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The Agta of the Northern Sierra Madre. Livelihood strategies and resilience among Philippine hunter-gatherers

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In memory of Royel Wagi

To Winner Wagi

Promotie commissie

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The Agta of the Northern Sierra Madre

Livelihood strategies and resilience among Philippine hunter-gatherers

Proefschrift

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CONTENTS

LIST OF TABLES, MAPS, FIGURES AND PHOTOS	viii
LIST OF ACRONYMS	xi
 I. INTRODUCTION	 1
The Agta: hunter-gatherers	3
The tribal extinction paradigm	6
Indigenous peoples and rights to natural resources	19
The study area	22
Research questions and methodology	30
 II. THE AGTA	 35
History	35
Demography	41
Family	59
Belief system	70
Social organization, mobility and livelihood	83
Conclusion	98
 III. HUNTING, FISHING AND GATHERING	 101
Introduction	101
Hunting	102
Fishing	129
Gathering	148
Conclusion	164
 IV. LOGGING	 167
Introduction	167
Corporate logging	168
Non-corporate, illegal logging	172
Agta involvement in logging	175
Environmental and social impacts	180
Conclusion	185

V. FARMING	187
Introduction	187
Similarity and variability of Agta farming systems	189
Disabungan	194
Diangu	209
Conclusion	224
VI. INTERVENTIONS	231
Change agents and their interventions over time	231
Christianization	240
Health and education	241
Livelihood and sedentarization	246
Sustainable resource use	253
Ancestral land rights	258
Empowerment	263
Conclusion	268
VII. CONCLUSIONS	275
The Agta in the foraging spectrum	275
The Agta as indigenous resource managers	285
Conclusion	295
APPENDIX: METHODOLOGY	297
REFERENCES	318
SAMENVATTING	347
SUMMARY	353
CURRICULUM VITAE	359

LIST OF TABLES, MAPS, FIGURES AND PHOTOS

Tables

1.1 Population growth 1980-2000	24
1.2 Population and land area per municipality 2000	25
1.3 Average annual per capita incomes 2000	25
2.1 Distribution of Negrito populations	43
2.2 Distribution and size of Agta populations	43
2.3 Agta population of the NSMNP per municipality	47
2.4 Non-Agta and Agta population of the NSMNP 2000-2005	50
2.5 Historical populations in the study area 1918-2000	51
2.6 Population projections for the study area 2010-2030	51
2.7 Agta population in Isabela province 1980 and 2005	53
2.8 Agta child mortality in the NSMNP	54
2.9 Causes of death mentioned by Agta parents	54
2.10 Characteristics of three residential groups	87
2.11 Time investment by the coast-dwelling Dimasalansan Agta 2005	90
2.12 Time investment by the river-dwelling Diangu Agta 2004-2005	94
2.13 Time investment by the river-dwelling Disabungan Agta 2004-2005	97
3.1 Hunting grounds and hunting success rates 2004-2005	104
3.2 Agta households involved in hunting	112
3.3 Hunting success rates 2004-2005	114
3.4 Hunting tool use	118
3.5 Hunting tools used in past and present	119
3.6 Effectiveness of hunting tools and strategies 2004-2005	121
3.7 Trap ownership and trap checking frequency	123
3.8 Hunting patterns 1979-1982 and 2004-2005	127
3.9 Freshwater species caught by Disabungan and Diangu Agta	130
3.10 Marine species caught by Dimasalansan Agta	131
3.11 Fishing grounds exploited by three residential groups 2004-2005	132
3.12 Income from lobster trade in Divilacan May - October 2004	136
3.13 Fishing success rates in three residential groups 2004-2005	139
3.14 Fishing strategies and returns in three residential groups 2004-2005	140
3.15 Time investment in gathering 1979-2005	149
3.16 Wild tubers collected	151
3.17 Time investment in rattan collection and processing 2004-2005	155

4.1 Agta and non-Agta loggers per municipality and Agta settlement	177
4.2 Time expenditure in logging among the Disabungan Agta in 2004-2005	178
4.3 Average daily wage of Agta loggers 2003-2005	179
5.1 Time investment in farming and farm labour 2004-2005	192
5.2 Crops in Disabungan swiddens 2004	201
5.3 Area per crop on Disabungan swiddens 2004	202
5.4 Planted and unplanted area on Disabungan swiddens 2004	203
5.5 Planting and harvesting ratio of upland rice on Disabungan swiddens 2004	208
5.6 Planting and harvesting data Diangu 2004-2005	218
5.7 Gross and net Diangu rice harvests 2004-2005	220
5.8 Contribution of own harvest and labour to Diangu rice stocks 2004-2005	222
5.9 Debts paid by Diangu Agta after the 2004 and 2005 harvests	223
6.1 Enrolment in primary and secondary education 2003-2005	243
6.2 Awareness on the NSMNP	255
6.3 Awareness on ancestral domain claims and titles	260
7.1 Returns of livelihood options per residential group in Ph. Peso per hour	281
7.2 Child mortality for river-dwelling and coast-dwelling Agta in the NSMNP	283
A. Time allocation categories	302
B. Participants and recorded person-workdays per study site and age category	305
C. Rice fields and swiddens Diangu Agta 2004	308
D. Swiddens Disabungan Agta 2004	311

Figures

Figure 2.1 Age-sex structure of the study population in 2005	48
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Maps

1.1 Study area	2
1.2 Region 2 (Cagayan Valley)	23
1.3 The NSMNP and its management zones	28
2.1 Negrito populations in the Philippines	44
2.2 Agta settlements in and around the NSMNP	46
3.1 Disabungan hunting and fishing grounds	106
3.2 Diangu hunting and fishing grounds	108
3.3 Dimasalansan fishing and hunting grounds	110

5.1 Situation of Digud swiddens 2004	198
5.2 Situation of Dipili swiddens 2004	199
5.3 Situation of wet rice fields and swiddens in Dibulo 2004-2005	214

Photos

2.1 Settlement at Blos River, Maconacon, April 2004	64
2.2 Wooden house at Dipili, San Mariano, February 2007	64
2.3 Coastal settlement at Dimatog, Palanan, May 2005	65
2.4 River-dwelling settlement at Diangu River, Maconacon, March 2004	65
2.5 The birth of Kristopher Mariano at Digud, December 2004	68
2.6 Kristopher Mariano with his uncle and mother, December 2004	68
2.7 Agta boy's grave at Batag, San Mariano, September 2004	75
2.8 Disabungan Agta shifting camp, San Mariano, September 2004	75
2.9 <i>Gaygay</i> in Diwagao, Dinapigue, July 2003	77
2.10 <i>Gaygay</i> in Dimabigao, San Mariano, August 2004	77
3.1 Disabungan watershed, January 2005	107
3.2 Diangu watershed, October 2004	109
3.3 Dimasalansan reef and beach, December 2004	111
3.4 Emoy Wagi showing his hunting catch, Dipili, San Mariano, August 2004	117
3.5 Josephine Matias fishing, Dipili, San Mariano, August 2004	137
3.6 Agta fisherman showing his lobster catch, Dibubun, Divilacan, April 2005	146
3.7 Repairing lobster traps, Dikaberitbitan, Divilacan, July 2005	147
3.8 Winner Wagi straightening rattan, Digud, San Mariano, April 2005	157
3.9 Scrap metal collection, Blos, Maconacon, July 2006	163
4.1 Logging operations in LUZMATIM concession, Dinapigue, August 2003	170
4.2 Agta guarding LUZMATIM equipment, Dinapigue, August 2003	170
4.3 Log transportation at Disabungan River, San Mariano, August 2004	176
4.4 Agta chainsaw operator at Dipili, San Mariano, August 2004	176
4.5 Etong Mariano and Winner Wagi, Disabungan River, January 2004	184
4.6 Computation of payment for logs, Disabungan River, January 2004	184
5.1 Swidden in Dipili, San Mariano, August 2004	205
5.2 Carmen Matias weeding her field at Dipili, San Mariano, January 2004	206
5.3 Berning Ignacio ploughing his land in Dibulo, Maconacon, March 2004	217
5.4 Evelyn Aluad cleaning rice, Dibulo, July 2005	221
5.5 Planting rice for non-Agta neighbours, Diangu, April 2005	221
6.1 Agta elementary students, Sta. Marina, Maconacon, March 2004	246
6.2 Fidela Impiel presenting health issues, Cabagan, August 2005	274

LIST OF ACRONYMS

CADC	Certificate of Ancestral Domain Claim
CADT	Certificate of Ancestral Domain Title
CDF	Community Development Facilitator
CLUP	Comprehensive Land Use Plan
CML	Institute of Environmental Sciences
CNI	Commission on National Integration
CPPAP	Conservation of Priority Protected Areas Project
CSC	Certificate of Stewardship Contract
CVPED	Cagayan Valley Program on Environment and Development
DAO	Departmental Administrative Order
DENR	Department of Environment and Natural Resources
DGIS	Netherlands Directorate-General for Development Cooperation
IPRA	Indigenous Peoples' Rights Act
ISU	Isabela State University
IUCN	International Union for the Conservation of Nature
LGU	Local Government Unit
NCIP	National Commission on Indigenous Peoples
NGO	Non-Government Organization
NIPAS	National Integrated Protected Areas System
NORDECO	Nordic Agency for Development and Ecology
NPA	New People's Army
NSMNP	Northern Sierra Madre Natural Park
NSMNP-CP	Northern Sierra Madre Natural Park Conservation Project
NSO	National Statistics Office
OMA	Office of Muslim Affairs
ONCC	Office of the Northern Cultural Communities
OSCC	Office of the Southern Cultural Communities
PAMB	Protected Area Management Board
PANAMIN	Presidential Assistant for National Minorities
PLAN	PLAN International Philippines
SIFMA	Socialized Integrated Forest Management Agreement
SIL	Summer Institute of Linguistics
WWF	World Wildlife Fund

I. INTRODUCTION

This is a study on the Agta's responses to social and environmental change. Indigenous peoples' cultural survival is reported to be threatened in the face of modernity and globalization. Hunter-gatherer societies are considered especially vulnerable, as the natural resource base on which they depend economically and culturally is under increasing pressure (Bodley 1999a; Headland and Blood 2002). Indigenous peoples in general and hunter-gatherers in particular, have a reputation of environmental friendliness. The hand-over of exclusive resource use rights to indigenous peoples is therefore expected to provide a remedy to the depletion of biological and cultural diversity (Kemf 1993; Posey 1999). National governments in most parts of the world are currently implementing policy instruments that grant collective resource use rights to their indigenous populations (Persoon et al. 2004).

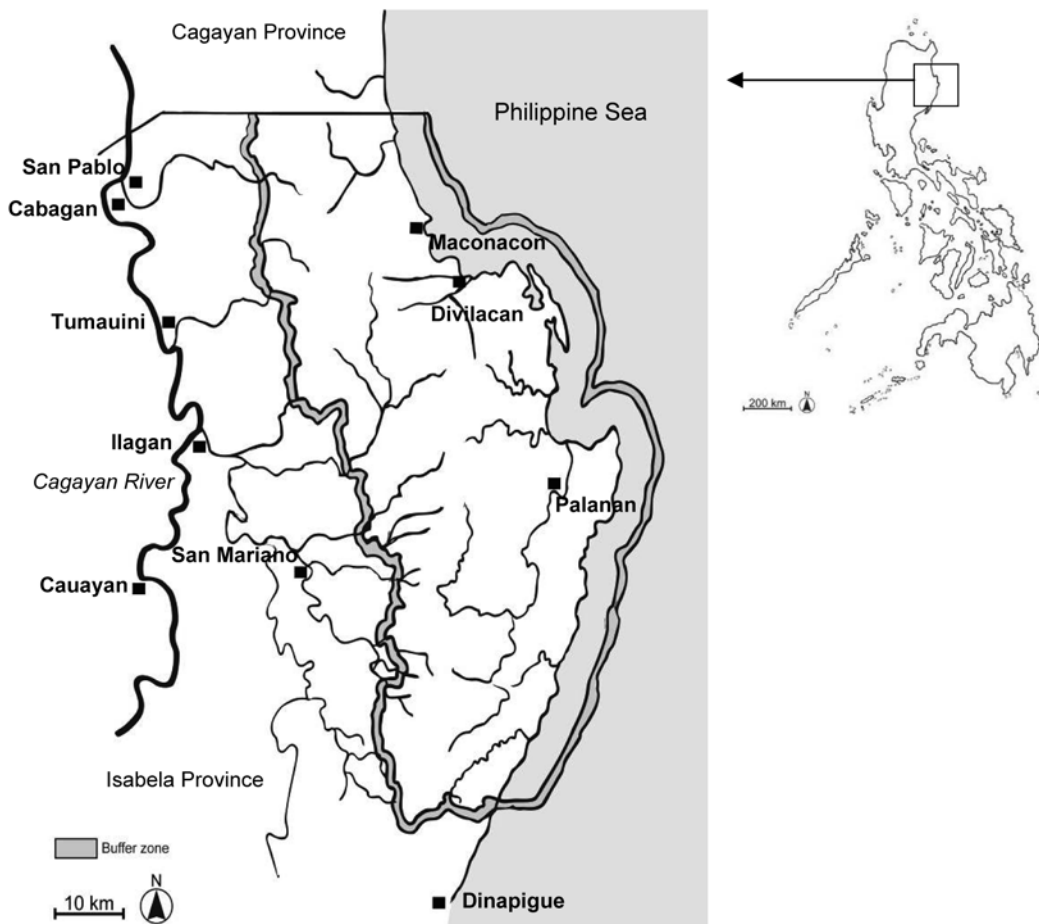
The Agta are one such indigenous population. Numbering around 9,000 individuals they are among several hunter-gatherer groups that have inhabited the Philippine Archipelago for at least 35,000 years. Today, they live along the coasts and in the tropical rain forest of the Sierra Madre Mountain Range in north-eastern Luzon. Despite the immigration of Austronesian farmers about 4,000 years ago and four centuries of Spanish and American colonization, they have maintained a hunter-gatherer mode of existence (Headland 2003; Bellwood 2005; Headland and Reid 1989). Anthropologists and other interested scholars, however, have over the past century been worried about how much longer the Agta will be able to do so. With ongoing deforestation as a result of logging operations and agricultural expansion, they have predicted the disappearance of the Agta as a distinct cultural group (Headland 2002; Early and Headland 1998).

Scholarly interest in the Agta was at a height in the 1970s and 1980s (Headland 1975; Bennagen 1976; Peterson 1978a, b; P. Griffin and Estioko-Griffin 1985; Headland 1986), although several important publications appeared afterwards (M. Griffin 1996; Headland and Headland 1997; Early and Headland 1998; Headland 2002). Meanwhile, the Philippines adopted both environmental and indigenous peoples' rights legislation to counter processes of biological and cultural degradation. Under the Indigenous Peoples' Rights Act of 1997, the Agta can apply for legal ownership of their indigenous territories. Moreover, in the late 1990s part of the Agta's territory has been designated as protected area, the Northern Sierra Madre Natural Park in Isabela province (map 1.1). Some 1,800 Agta live within and next to the park boundaries, along with around 21,000 other people from diverse ethnic backgrounds. Being the indigenous population of the mountain range, the Agta enjoy special use rights within the park.

This dissertation focuses on the Agta of the Northern Sierra Madre Natural Park. It looks into the following questions. First, how is the park's Agta population distributed geographically and structured demographically? Second, what are the characteristics of contemporary Agta culture and social organization? Third, what do the Agta do for a living and how do they make use of natural resources? Fourth, how do they relate to other local communities and actors, including government and non-

government organizations? Lastly, how do development interventions affect this Agta population? Throughout the study I will argue that for a proper understanding of the Agta's present-day struggle with environmental and social change we should pay attention to internal diversity (Pelto and Pelto 1975). Moreover, I maintain that rather than passive victims of the outside world, the Agta as a cultural group are resilient: instead of being just overpowered by change, they deal with it constructively by adapting to new circumstances (Walker et al. 2004).

In this introductory chapter I will first discuss the theoretical perspectives that form the background of the study before sketching the research area and outlining the chosen methodology. Chapter II is an ethnographic chapter, which provides information on the Agta's history, socio-cultural organization and demography. The three succeeding chapters focus on livelihood activities, namely hunting, fishing and gathering (Chapter III), logging (Chapter IV) and farming (Chapter V). Chapter VI looks into development interventions directed at the Agta by government and non-government organizations, and the Agta's responses to these interventions. Chapter VII presents the conclusions of this study.



Map 1.1 Situation of the study area in the Philippines (right) and a close up of the Northern Sierra Madre Natural Park with its nine municipalities and buffer zone (left)

THE AGTA: HUNTER-GATHERERS

The Agta are by no means an isolated population. On the contrary, they are surrounded by a host of other ethnic groups, with whom they maintain social and economic relations (Headland and Reid 1989, 1991; Reid 1987). So why focus on the Agta as a separate ethnic group? Most importantly, the Agta themselves feel they are different from their neighbours. From an anthropological point of view, despite their long-standing contact with neighbouring populations, the Agta can indeed be considered to be different in various crucial respects. The most important of these are their history and their mode of production.

The Agta descend from an Australoid population that colonized the Philippine Islands at least 35,000 years ago.¹ Only for the past 4,000 years has this original population been joined by Austronesian peoples (Bellwood 1985:70, 1999:284, 2005:135). From this distinct genetic history originate the Agta's phenotypically different features: their skin is darker, their stature shorter and their hair curlier than that of most other Filipinos. Within the Philippines the Aeta of western Luzon, the Batak of Palawan, the Ati of Panay, the Ata of Negros and the Mamanua of Mindanao all share this common ancestry. Other related groups include the Batek of peninsular Malaysia and probably the Onge and Jarawa of the Andaman Islands (see Endicott 1999a; Pandya 1999; Radcliffe Brown 1922).

The umbrella term 'Negrito' was introduced by the Spanish in the sixteenth century to lump these various Australoid groups together. It was retained by the US colonial government and later adopted by the Philippine government (Headland 2003:1; Seitz 2004:2). Literally meaning 'little black', the term has racist connotations, and it can therefore be questioned whether it should be applied at all, especially by anthropologists and linguists. Some scholars indeed avoid its use, but fail to provide a satisfactory alternative (B. Griffin 2002:42; Brosius 1990:xxi-ii). Others argue that the term does in practice not have the derogatory connotations we might attribute to it in theory and suggest that it can therefore be safely used (see Headland 2003:1; Seitz 2004:2; Endicott 1979a:1). Although I sympathize with opponents of the word 'Negrito', for lack of better terms I will indeed use it in as far as I refer to the collection of Australoid peoples in the Philippines and other parts of Southeast Asia. As much as possible, however, each of these peoples will be referred to by the specific names with which they identify.

Hunter-gatherers defined

In addition to their common origins, the Agta share with other Negrito populations a hunter-gatherer mode of production. The modern anthropological understanding of hunter-gatherer societies dates from the *Man the Hunter* conference, which was held in Chicago in 1966 (Ingold et al. 1988a:1; Lee and Daly 1999:8) and resulted in a book of the same title (Lee and Devore 1968). Since then, the concept of hunter-gatherer (often used interchangeably with the concept of forager) has been subject to much discussion, leading to multiple definitions and classifications (see Lee and Daly 1999:3; Panter-

¹ See Jocano (2000:50) for a controversial critique of this view.

Brick et al. 2001:2). Some have even questioned the validity of the concept itself. Burch (1994:454), for instance, has suggested that 'there is too much variation within the class of hunter-gatherer societies to make it a useful category for theoretical purposes'. In a more general argument, Hutterer (1991:223-4) concludes that typologies of societies are never satisfactory, whether they are based on subsistence systems, social organization, religion, kinship systems, language or settlement patterns.

Although hunter-gatherer societies, like other societies, do indeed vary broadly in their specific characteristics, I agree with Ingold et al. (1988b:5) that on a more general level they display certain common traits that are much less present among other types of society. Kelly's book *The foraging spectrum* (1995) does justice to this variability while still pinpointing what makes foraging societies stand out from others. It describes hunter-gatherers as people who 'procure most or all of their food from hunting, gathering, and fishing', but continues to say that '[...] many people who traditionally have been labelled hunter-gatherers do grow some of their own food, trade with agriculturalists for produce, or participate in cash economies, though ethnographies often downplay the significance of these activities' (Kelly 1995:3). Like other (working) definitions, Kelly's emphasizes hunter-gatherers' foraging mode of production as their main distinctive trait. Yet, several additional characteristics are usually mentioned. The most important of these are hunter-gatherers' mobility and their relatively simple and egalitarian social organization.

Anthropologists and archaeologists have fiercely debated the authenticity of present-day hunter-gatherers (see Wilmsen 1989; Solway and Lee 1990). Within this debate, the 'traditionalists' see foragers as autonomous peoples with a distinct cultural identity, which they were able to maintain through history. The 'revisionists', in contrast, argue that these peoples' hunting-gathering adaptation has nothing to do with cultural continuity, but is rather the product of their position at the bottom of society. In that sense, they are no different from other rural under-classes (Kent 1992:45-6; Headland 1999). I do not wish to further deal with this controversy here, for I agree with Spielmann and Eder (1994:319) that regardless of these foragers' histories, their current identity as hunter-gatherers matters, and must not be trivialized. Likewise, Layton (2001:314-5) argues that rather than asking whether hunter-gatherers are 'genuine or spurious' (Solway and Lee 1990), we should focus on their interesting tendency to follow a foraging mode of production despite their different histories.

It is nonetheless useful to roughly determine what these histories may have looked like. Layton (2001:314-5) distinguishes three possible histories for recent hunter-gatherers, the first two of which apply to what Hoffman (1984) has earlier called 'primary' hunter-gatherers. First, they may possess a continuous cultural and genetic history inherited from pre-farming ancestors, albeit influenced by interaction with non-foraging peoples. Second, they may possess a continuous cultural history, but have become genetically diverse as they are joined by former farmers or pastoralists, and left by others. Third, they may possess neither cultural nor genetic continuity with pre-farming ancestors, being refugees from farming or pastoral communities who have been forced to reinvent hunting and gathering. This last group has also been termed 'secondary' or 'respecialized' foragers (Hoffman 1984; Endicott 1999b:275). It includes the Kubu of Sumatra (Persoon 1989), the Punan of Central Borneo (Bellwood 1999; Hoffman 1986) and the Mlabri of North-eastern Thailand (Oota *et al.* 2005). All

of these peoples are thought to have relatively recently shifted to a foraging economy from a farming mode of production under the influence of specific local circumstances.

Having retained a hunting-gathering mode of existence, the Agta are considered continuous, or primary, hunter-gatherers. Given that they are not just influenced by, but have intense contact with farming populations, they might best be grouped into Layton's second group. The Agta have historically exchanged part of their foraged produce for products such as rice, coffee, sugar and other valued goods with nearby farmers, loggers and traders (Headland 1986; Griffin and Estioko-Griffin 1985). For this reason, Headland (1986) has called them 'commercial hunter-gatherers' (Hayden 1981:346).

At present the most important trade products provided by the Agta include wild pig and deer meat, freshwater eel, live lobster, rattan and timber. The Agta follow a highly diversified and flexible livelihood strategy, which combines foraging activities with barter, paid labour and cultivation. Benjamin's term 'opportunistic' foraging (1973:viii) aptly describes this strategy. In most of their activities, the Agta follow what Woodburn (1988) calls an 'immediate return system'. That is, the Agta tend not to stock their produce, but rather consume or trade it immediately or within several days. As we will see, this even applies to some extent to their farm products. The Agta live together in small, closely related and relatively egalitarian social groups. Mobility is retained even when a relatively sedentary lifestyle has been adopted. As Endicott (2007:xi) notes for the Malaysian Batek, to facilitate such mobility, the Agta have few possessions and flexible, but nonetheless clear, notions of ownership of land and resources.

The Agta and others

Agreeing that it is useful to speak of the Agta as hunter-gatherers poses the need for a term to refer to those who are not foragers. I agree with Rupp (2003:38) that anthropologists tend to overemphasize the dichotomy between foragers and others, by either not paying attention to the latter at all, or by homogenizing them into generalized categories. The non-foragers are referred to in large conceptual blocks, such as Negroes and Grand Noirs in the Central African context; and villagers, farmers, horticulturalists in many other cases. In the context of the Agta, 'the others' are mostly referred to as lowlanders, farmers, and even Filipinos. I will first discuss why I prefer not to use any of these concepts before forwarding an alternative.

The term lowlander is inaccurate simply because many of the Northern Sierra Madre's inhabitants are uplanders. While the foothills are inhabited by Ilocano migrants, who indeed originate from lowland areas in North-west and Central Luzon, more recently additional groups of Ifugao and Tingguian immigrants have settled along the forest fringe. Coming from the Cordillera Mountains, these people are uplanders by origin.

I avoid the use of the term Filipino to denote an opposition with the Agta or other Negrito groups. It is used by Early and Headland (1998:22), who qualify their choice saying that 'the Agta are Filipinos in the civil sense but not in the cultural sense'. The term can also be found in literature on other Negrito peoples. Novellino

(1999:252), for instance, sets the Batak of Palawan apart from Filipinos; and Seitz (2004:9) does the same for the Aeta of Zambales. Given the Agta's and other Negritos' low social status within the Philippines, I feel that anthropologists should not (unintentionally) feed the misconception that they are not true Filipinos as this may be abused to serve as justification for discrimination against the Agta.

The term farmers is less problematic, but still not all-encompassing. I attempt to avoid it as a collective term and use it only in a context where people's farming occupation is relevant. It otherwise blurs the important fact that they often also engage in other activities such as fishing, hunting and logging. These off-farm activities are of particular importance for understanding the relationships between the Agta and their neighbours. Moreover, to call all those who are not Agta farmers implicitly confirms the dominant prejudice that the Agta do not engage in agriculture at all.

An alternative could be to stick to the terms the Agta and their neighbours use to refer to each other. The Agta interchangeably speak of *pute*, *unat* (non-Agta) or *kristyano* (Christian) when referring to someone outside their own ethnic group. These others, in turn, refer to the Agta as *pugot*² (black), *kulot* (curly-haired) or *dumagat* (from the sea) when referring to coast-dwelling Agta. However, with the exception of *kristyano* and *dumagat*, these terms all have derogatory connotations and are never used by those they refer to. Agta refer to themselves as Agta and their neighbours refer to themselves mostly by their own specific ethnic label, such as Ilocano, Ifugao or Tingguian.

For these reasons, I use non-Agta as a collective term for all ethnic groups other than the Agta that inhabit the Northern Sierra Madre. Admittedly, the term does not deserve praise for beauty or creativity. Nor does it do justice to the cultural and linguistic diversity that this group of peoples represents. Whenever possible and appropriate, therefore, I will mention the ethnic labels with which these non-Agta identify. Speaking of non-Agta has the advantage of being all-encompassing. It also leaves space for describing relations between Agta and non-Agta in an unbiased and nuanced way.

THE TRIBAL EXTINCTION PARADIGM

The Agta's and other Negritos' distinctive appearance, mode of production and culture has over the past centuries drawn the attention of numerous adventurers, missionaries, (colonial) government agents and anthropologists (see Semper 1861; Worcester 1906, 1912; Vanoverbergh 1937, 1938; Schebesta 1957; Bennagen 1976; Griffin and Estioko-Griffin 1985; Headland 1986). Despite their highly different backgrounds and purposes, these observers shared not only a fascination for their subjects' distinctiveness, but also a preoccupation with their presumed upcoming extinction. They were all convinced that the 'otherness' they witnessed would soon be something of the past.

These convictions were not limited to Philippine foragers. As Schefold (1990:34) shows, the imminent disappearance of small scale societies has been predicted by anthropologists for over a century. I will refer to this trend in scientific

² The term *pugot* was originally used for Africans introduced by Portuguese slave traders (W. Scott 1994:190).

and popular ethnographic writing as the tribal extinction paradigm. As an alternative to this paradigm, resilience oriented views stress the adaptability of forager societies. Following Folke (2006:254) and Folke, Colding and Berkes (2003:352) I use the concept of resilience to refer to the capacity to persist in the face of change. Resilience oriented authors point out how small-scale societies have survived in spite of the great environmental and social changes with which they have been confronted throughout prehistory and history. They also stress that cultural change does not necessarily result in a cultural group's disappearance, but may ensure that it equips itself to adequately face changing circumstances (see Layton 2001; Rowley-Conwy 2001).

As I will show in the following, in the case of the Agta and other Philippine Negritos, the tribal extinction paradigm has so far largely gone unchallenged. Encroachment and deforestation are seen to work together in bringing about an irreversible process of deculturation, and possibly physical extinction. Aside from a profound pessimism on the Agta's and other Negritos' future, the 'tribal extinction paradigm' consists of a number of additional notions. These are first, the Agta's difficulty to take up farming, and second, the negative and exploitative character of the Agta's relations with non-Agta farmers, loggers and traders. I will deal with each of these notions in turn before getting back to the concept of resilience.

Encroachment, deforestation and deculturation

The early missionaries and colonial government officers that came to the Philippines noted two main causes of looming tribal extinction: the encroachment of Austronesian peoples into Negrito territory; and the Negritos' high death rates. During Spanish times such predictions were still mainly implicit, as in Father Francisco Colin's *Account of the Filipinos and their pre-Spanish civilization* (1663) (cited in Zaide 1990, Vol.V:3-5):

'All those whom the first Spaniards found in these [Philippine] islands with the command and lordship over the land are reduced to the first class, the civilized peoples. Another kind, totally opposed to the above, are the Negrillos [...] There are still a number of those people in the interior of the mountains. [...] Those blacks were apparently the first inhabitants of these islands, and they have been deprived of them by the civilized nations who came later by way of Sumatra, the Javas, Borneo, Macasar, and other islands lying toward the west...'

American colonizers were much more explicit, although not necessarily worried, about the matter. In fact, from Dean Worcester's description of the different ethnic groups of the island of Romblon in *The Philippine islands and their people* (1898:473), it appears that the Negritos' extinction would be a relief rather than a problem:

'The Negritos come at the bottom of the scale mentally, and there are good reasons for believing them to be incapable of civilization; but this fact is of little importance, as they are rapidly disappearing, and seem destined to speedy extinction'.

Several years later, in his *Headhunters of Northern Luzon*, Worcester (1912:847) further elaborates on this prediction:

‘The number of Negritos in the Philippines can hardly exceed 25,000 and it is constantly diminishing from purely natural causes. In many regions their birth rate is known to be materially below their death rate, and in my opinion they must be regarded as a “link” which is not now missing, but soon will be’.

Toward the end of American rule in the Philippines, the tone of voice becomes slightly more concerned, as in Keesing and Keesing’s *Taming Philippine headhunters* (1934:189):

‘[...] And in nearby jungles the timid pigmy bands, having little permanent attachment to the soil, seek skilfully the lessening game, and wage their losing battle with extinction’.

The environmental concerns that can be implicitly sensed from Keesing and Keesing’s account have become a central focus in more recent anthropological reflections. Deforestation has been added to the list of threats to the Agta’s and other Negritos’ continued existence. P. Griffin and Headland (1994:73), for instance, predict that:

‘[...] by the year 2005, the tropical forests of the Philippines will be gone. Perhaps the most tragic aspect of this loss is that by that time the unique and ancient Agta culture will be extinct as well’.

While definite figures on historical forest cover loss in the Philippines are lacking (Kummer 1991:42; Bankoff 2007:329), reconstructions of deforestation suggest that forest cover may have declined from 90% of the total land area at the time of first contact with the Spanish in 1521 to less than 25% by the early 1990s. Luzon was heavily hit: between 1950 and 1987 it lost an estimated 2.8 million hectares of forest. Until 1900, the major causes of deforestation were most likely the steady population increase, the spread of commercial crops, and timber extraction for ship building on order of the Spanish colonial government. In the American and post-independence period, the destruction of old-growth and (and residual) forests in the Philippines in general, and in the Sierra Madre in particular was primarily caused by legal and illegal logging (Bankoff 2007:317-8; Kummer 1991:45-6, 58, 69-75; van den Top 2003:54-6).

The 1904 Forest Act introduced the Timber Licensing Agreement (TLA) as the legal instrument for corporate access to public forest. Through these agreements, the government granted private enterprises the right to utilize forest resources within a particular concession area. TLAs were given out for periods of 25 years, after which they could be renewed for another 25 years (van den Top 2003:196). Large-scale, mechanized logging operations in the Philippines boomed particularly between 1965 and 1975. After the fall of the Marcos regime in 1986, successive Philippine administrations felt that the concession system did not function properly. Timber companies did not follow the regulations within their concession areas and illegal logging outside concession areas was widespread (van den Top 2003:65, 197-8).

Lengthy political discussions on the need and possibility for a nationwide commercial log ban took place in the late 1980s and early 1990s, but proponents and opponents could not agree on the scope and time-span of such a ban (Vitug 1993). Instead a series of local logging moratoria were declared in the early 1990s, which covered several but not all remaining forest areas in the Philippines (Guiang 2001:119; Persoon and van der Ploeg 2003:454-5; Jongman 1997:22-32). As we will see in the chapters to come, however, these log bans have by no means meant the end of deforestation in the Northern Sierra Madre.

In contemporary anthropological writing, this process of continued environmental degradation in combination with the cultural, economic and political dominance of non-Negrito populations, is seen as causing the presumed deculturation of Negrito populations. For instance, based on his fieldwork among the Agta of Palanan, Bennagen (1977:190-1), writes on the 'Negrito's possible extinction' as follows:

'[...] predatory industrializing forces continue to sap the remaining vitality of their decaying culture. The Negrito now finds himself trapped in the interstices of two contradictory traditions, confirming once more a recurring historical experience: one culture's decay is another's growth. Today we bear witness to a culture, dying like a ripple, in the sidestream of history'.

Rai (1990:3), in the introduction to his book *Living in a lean-to*, on the Agta of Isabela province, writes that despite their survival as a hunter-gatherer group,

'Time seems to be finally catching up with the Agta [...] and in the last few decades they have experienced dramatic changes in their traditional way of life'

Rai (1990:85) is convinced that he witnessed the Agta going through a transition process from a traditional economy which he perceived to have consisted mainly of hunting and other foraging strategies, to a non-traditional economy which developed in conjunction with the outside population:

'The fragile transition state of the Agta, today characterized by a non-forest orientation, stands in sharp contrast to their past conditions and leaves them in a predicament. The continuing environmental degradation of their homeland leaves the Agta with no option except to emphasize the non-foraging way of life [...]' (Rai 1990:xiii).

Rai expects this transition to come at a high cultural price as the 'non-foraging way of life' will result in considerably decreased mobility, which in turn implies greater social tensions. It will further require replacement of the central value of sharing for the central value of saving (Rai 1990:124-5). In other words, the Agta are about to lose several core pillars of their cultural identity.

Headland (1986:441), likewise, predicts that:

'[...] within the next several years the Agta will reach a point of deculturation where their ethnic solidarity, their culture, and their language will be a thing of the

past. I am not talking here just about culture change (which I am not against), but rather the actual decay of a people's total way of life as the result of abusive outside forces on an ecological system. This includes that ecosystem's aboriginal inhabitants - a case where whole institutions are lost to a group without replacement of functional equivalence'.

Early and Headland (1998:164-5), in answering the question of whether the Agta as a people will be dying out, say:

'Unless their high mortality continues to be offset by their high fertility, extinction is always a possibility. [...] But there is another alternative to dying out. The Acculturating population [consisting of mixed Agta and non-Agta families] [...] is probably a temporary population, a transient stage. It provides a cultural matrix in which the mixed progeny learn the national culture in a family setting. This environment leads to assimilation of the Agta into the Filipino multiracial population, as has happened among Negritos in other parts of the country. Any San Ildefonso Agta [living on the San Ildefonso Peninsula, Eastern Luzon, Aurora Province] who continue to be unassimilated will remain landless peasants whose role will be to provide cheap labor for local farmers. This situation may lead to further deterioration of health conditions, to an increase in mortality, and perhaps extinction'.

In an article for *Cultural Survival*, which carries the meaningful title *Basketballs for bows and arrows*, Headland (2004:41) reflects on the process of deculturation as follows:

'Until the 1970s, all Agta boys knew how to shoot small bows and arrows [...]. Today, bows and arrows are no longer seen, and young men neither know how to make nor shoot them. Young men are skilled, however, at playing basketball on cement courts in nearby lowlander settlements. The Agta [...] underwent traumatic cultural change in the 20th century as a result of deforestation in the Sierra Madre and other acculturative forces'.

According to Early and Headland (1998:163), they are especially vulnerable to such cultural loss because:

'[...] the Agta are not highly defensive of their cultural ways. They know their subordinate position and seek to survive in it with little thought of preserving their traditional culture'.

This cultural vulnerability has also been stressed for the Batak of Palawan. In his book *On the road to tribal extinction*, Eder (1993:238-9) points to the Batak's demographic characteristics, such as small population size and scattered settlement pattern, for the erosion of ethnic identity. He argues these 'provided a relatively fragile socioterritorial basis for cultural transmission and continuity' and predicts that the Batak will either end up physically extinct, or turn into deculturated and depopulated tribal Filipinos, whose main characteristics are poverty, illiteracy and political impotency (Eder 1993:225). He describes how the Batak went from a physically and culturally distinct

population of about 600 individuals in the closing decades of the nineteenth century, to a population in disarray by the end of the twentieth century:

‘Undernourished as individuals, decimated as a population, and virtually moribund as a distinct ethnolinguistic group, the Batak appeared destined for extinction sometime early in the twenty-first century’ (1993:v-vi).

More recent publications on the Batak radiate similar pessimism. Novellino (1999:252-3, 2007:213) suggests that the Batak will go from acculturation to physical disappearance and concludes that they continue to face demographic decline, while their diet becomes decreasingly rich and varied.

Being convinced of their research populations’ fast approaching disappearance, authors view their studies as a last opportunity to document what is about to be lost forever. Thus, De Souza (2006:616), in a study on nutrition among the Agta of Casiguran (Aurora Province, Eastern Luzon), writes:

‘Unfortunately populations like the Agta are becoming increasingly rare as their physical existence and cultural practices are threatened by expanding agricultural and industrial societies. Currently, they are simply providing us a last glimpse of one of the most extreme causes of secular environmental stress on human growth and demography’.

While Rai’s study

‘[...] is an attempt to describe [...] the traditional life of the Agta before it disappears [...]’ (Rai 1990:3).

And Galang, in his travel account *Among the Agta of North Sierra Madre*, contends that:

‘[...] it is probably not possible for the Agta of the coastal Sierra Madre Mountain Range to survive the onslaught of change and development as it is now dictated by the dominant culture from the outside. [...] Indeed the future appears distinctly bleak for the Agta. It would seem that under the prevailing conditions, either physical or cultural extinction is their fate’ (Galang 2006:36).

Transition to agriculture

One of the most important reasons for above demonstrated pessimism on the Agta’s future is their perceived inability to become farmers (see Headland 1986). In the anthropological and archaeological literature, the Agta feature as an example of a foraging people that fails to adopt agriculture. The transition from foraging to farming is a subject that has raised broad academic interest. There is general consensus that hunter-gatherers usually take up agriculture only if they are in direct contact with farming populations (Rowley-Conwy 2001:64; Bellwood 2005:41). Even then, however, a shift towards an agricultural existence is by no means given.

Bellwood (2005:31-4) argues that if hunter-gatherers get into contact with farming populations, they will prefer to establish mutualistic exchange relations with them, rather than give up their foraging existence. Only when pressure on foraging grounds increases due to the agriculturalists' expansion does it become interesting for hunter-gatherers to shift to agriculture themselves. However,

'The catch-22 situation here is that by the time the farmer pressure is sufficient to make agricultural adoption worthwhile, it can be already too late [...]'

In Bellwood's view (2005:33), the Agta along with the Batak, some marginalized San and likely the Hadza, Aka, Mbuti and Semang, are examples of foraging peoples who missed this window of opportunity. He concludes that:

'The process in the 21st century would appear similar to trying to jump aboard a fast-moving train. For those who miss the train through choice or circumstance, the future can be grim indeed'.

Explanations for some foragers' presumed failure to jump aboard this train have been sought in internal and external factors. With respect to internal barriers, Sahlins (1972:27) concluded that hunter-gatherers are not switching to agriculture because it is simply not as energy-input efficient as the foraging option. He also suggested that 'food storage [...] may be technically feasible, yet economically undesirable and socially unachievable' (Sahlins 1972:32). This latter argument is also reflected in Woodburn's earlier mentioned concept of immediate return systems (1988:57-8). Given these systems' focus on the present, rather than the future, the importance attached to sharing, and the absence of accumulation of food and property, it is considered unlikely for immediate return hunter-gatherers to adopt agriculture. This being so, people with immediate return systems of production will remain hunter-gatherers as long as they retain access to sufficient land and wild food.

Once such access is no longer available, there are two options. One is for the hunter-gatherers to make a 'lucky escape' (Bellwood 2005:34) and switch to agriculture while this is still possible. However, as is clear from the above, only some foraging peoples succeed in doing so and the resulting agricultural transitions are 'always small in scale and certainly not of the strength likely to set off a process of agricultural dispersal' (Bellwood 2005:34). This is where the external barriers come in. The reason for such rare success lies in the fact that most, if not all, immediate return hunter-gatherers live in areas that are decidedly marginal for cultivation. Moreover, they are surrounded by agriculturalist and pastoralist peoples who have settled in more fertile agricultural landscapes (Woodburn 1988). Bellwood (2005:32) argues that under these circumstances it becomes highly unlikely for hunter-gatherers to adopt agriculture. This is because

'[...] the surrounding cultivators and cash-croppers normally do not allow the hunters to farm successfully. It suits the farmers better to keep them in a semi-dependent relationship, hunting and collecting for trade and laboring in fields from time to time'.

For the Agta, this view has been postulated most firmly in Headland's (1986) dissertation *Why foragers do not become farmers*, which serves as a major point of reference in the upcoming chapters. Headland maintains that the Agta of Casiguran are prevented from taking up farming by their non-Agta agricultural neighbours. At the same time, their commercial foraging niche comes under increasing pressure as a result of environmental degradation. Where these conditions coincide, hunter-gatherers will neither be able to make the switch to farming, nor maintain a productive foraging economy. The 'grim future' then is one in which these foragers end up as an underclass of subordinated, deculturated, marginalized, discriminated, landless labourers (Bellwood 2005:33; Headland 1986; Woodburn 1988:49). From here, the only possible scenarios are thought to be physical extinction, cultural extinction, or both. In the following chapters I will challenge this view and emphasize the Agta's ability to flexibly respond to opportunities as they arise. I will show that agriculture is among these opportunities more often than academic and public opinion suggest.

Forager-farmer relations

As can be sensed from the foregoing, a second theme embedded in the tribal extinction paradigm concerns the nature of hunter-gatherers' relations with farmers. Contrary to long-maintained claims on hunter-gatherer isolation, archaeological, botanical, ecological and linguistic evidence proves that foragers and farmers were already in contact in parts of pre-historic Europe, Africa and Asia (Layton 2001, Gregg 1988, Bellwood 1997, Headland and Reid 1991, 1989). In the case of North Luzon it has been hypothesized that such pre-historical relations with farmers mainly arose as a result of the proto-Agta's need for carbohydrates. These could not be obtained in sufficient quantities from Luzon's rain forest, to which the proto-Agta had presumably retreated after agricultural populations settled in their original, more productive, foraging grounds (Headland 1987a). This issue is known as the 'wild yam question' and has inspired various scholars to ask how well hunter-gatherers in other tropical regions have been able to live independently from agriculture.

The discussion is as yet undecided. Headland's thesis was largely confirmed by Bailey et al. (1989), who conclude that there is no ethnographic and archaeological evidence that foragers have ever been able to live in tropical rain forests without cultivated food. This is because resources in undisturbed tropical rain forests likely are so poor, variable and dispersed that they cannot support viable hunter-gatherer populations. It must be noted that the situation is different when sago is available, a starch extracted from various palm species, as is the case in Borneo and Papua New Guinea (Sellato and Sercombe 2007:17-8).

A possible exception is Peninsular Malaysia. Although no quantitative data exist to support this, even without sago, its rain forests probably are sufficiently rich to support small nomadic groups of foragers independent of agriculture. Indeed, there have been various periods since the mid-nineteenth century during which the Batek De, a foraging people that currently inhabits these forests, claim to have fully depended on the forest. The reason that they do not live independently from farmers is therefore not

that it is impossible, but that trade makes life considerably easier (Bailey et al. 1989:62; Endicott and Bellwood 1991:158, 162-9).

Bahuchet et al. (1991) make similar claims for foraging peoples in Central African tropical forests. They suggest that the extent to which wild yams and other wild plants are used cannot be taken as indicator of their availability. These resources may well have been and be present in sufficient quantities to support hunter-gatherer populations, but have become increasingly neglected with greater availability of cultivated foods. They therefore consider relations between Central African foragers and farmers to have arisen out of choice, and not out of necessity (Bahuchet et al. 1991:213-5, 237).

More than on the origins of forager-farmer relations, ethnographic work focuses on the forms these relations presently take. Spielmann and Eder (1994) have compared and analysed much of this work in a thorough review article. Later contributions to the discussion include Layton (2001) and Rupp (2003). In the case of economic relations, hunter-gatherers typically exchange wild proteins or other forest products for domestic carbohydrates, tobacco, metal items and other valued commodities. An interesting form of such exchanges is silent barter; that is trade without face to face meeting, which was practiced by the Sumatran Kubu (Persoon 1989:507) and some Bornean Punan groups (Sellato and Sercombe 2007:22). In addition to forest products, foragers often provide labour to farmers. Social relations arise in the form of inter-marriage and fictive kinship ties (Headland and Headland 1999; van de Sandt 1999).

A vital question is how we should interpret such socio-economic relations between foragers and farmers (Layton 2001:294, 301; Persoon 1989:508-9; Minter 2009). Is it justified to attribute certain levels of symbiosis or even mutualism to them (J. Peterson 1978a, b; Terashima 1986)? Or is what we see best considered as varying degrees of sub-ordination and exploitation which can only be understood in terms of class-relations (Spielmann and Eder 1994:307-9; Woodburn 1988:43; Headland and Headland 1999)? In the latter case, hunter-gatherers are described as being more tolerant of farmers than farmers are of foragers. They are said to adjust more to the other group, for example by learning their language, often at the expense of their own. Also, the fact that inter-group marriage mostly involves forager women marrying farmer men is taken as symptomatic of farmers' dominance over foragers.

Based on research in southern Cameroon, Rupp (2003) rightly criticizes anthropologists' tendency to overemphasize and reinforce opposition between foragers and farmers 'through their consistent focus on the tensions between domination and subordination, master and slave, patron and client' (Rupp 2003:38-9). Likewise, in the Philippine context, Novellino (1999:286) emphasizes that there is more to relations between Batak and non-Batak than exploitation, especially when these ties are old and well established. He therefore argues that '[...], the right question to ask is not whether the Batak-migrants relationship is an exploitative one, but what kind of changes would be necessary to improve such a relationship for the benefit of both groups, and the forest as well' (Novellino 1999:287).

With the exception of J. Peterson's contested work³ (1978a, b), previous ethnographies on the Agta have indeed emphasized their subordinate economic,

³ J. Peterson concluded that the Agta and Paranan interact within a larger ecological system in which interdependency is critical for the survival of both populations. Her work has been criticized for its

political and cultural position in relation to farmers (see Headland 1986; Headland and Headland 1997, 1999; Early and Headland 1998; Griffin and Estioko-Griffin 1985; P. Griffin 1991; Rai 1990; Magaña 2000). Headland has done this most explicitly by describing Agta-farmer relations in terms of a competition over scarce natural resources. Borrowing from ecology, he uses Hardin's (1960) Competitive Exclusion Principle to explain relations between Agta and non-Agta. This principle states that 'if two populations compete for the same resource that is necessary for the survival of each and is short in supply, one of the populations will be eliminated' (Sutton and Harmon 1973:280, cited in Headland 1986:87). As a result, relations between Agta and non-Agta have been mainly phrased in negative terms, with the Agta being victims of farmers' intentional exploitation and domination. In this study I will show that not all is necessarily wrong between Agta and non-Agta and I will argue that their relations reflect more complex realities.

Resilience

In sum, scientific writing on the Agta has been dominated by pessimism on the Agta's future as a distinct cultural group. It is marked by a deterministic view on the direction in which cultural change among the Agta has recently developed and will continue to develop. The dominant idea is that the Agta will end up as deculturated landless peasants. This deculturation is seen as being the effect of two processes that simultaneously take place. These are firstly, the cultural, economic and political dominance of non-Agta populations; and secondly, the continued environmental degradation which removes both the Agta's base for subsistence and cultural identity. However, the tribal extinction paradigm fails to acknowledge that, although the foraging way of life can be overwhelmed by colonization, it is also resilient (Bodley 1999b:472).

The concept of resilience originates from ecology, where it was first introduced by Holling (1973). He demonstrated the existence of multiple stability domains in natural systems, as opposed to the existence of just one equilibrium state. An often used example is a rangeland system that can be sustained under varying conditions. While the rangeland system may be defined by the presence of grass, shrubs, and livestock, it does not necessarily depend on one specific combination of these elements. The rangeland may persist with varying combinations of amounts of grass, shrubs and livestock, with each combination representing a different stability domain (Walker et al. 2004:3). Holling used the concept of resilience to refer to the capacity to persist in such a domain in the face of change, and by incorporating change (Folke 2006:254; Folke, Colding and Berkes 2003:352). He pointed out that even when systems have low stability, that is, if they fluctuate greatly, they may still be resilient (Holling 1973:17).

Holling's interpretation of the resilience concept was adopted by fields outside ecology, including the social sciences (Folke 2006:255). In anthropology⁴ it was used by Vayda and McCay (1975:298-9) to challenge the concept of culture as equilibrium based system. They define resilience as remaining 'flexible enough to change in response to whatever hazards or perturbations come along', thereby stressing that '[...] some properties of a [...] system must at times change so as to maintain other properties that are important for staying in the existential game [...]'. More recently, Adger (2000:361) has defined social resilience as the ability of communities to withstand external shocks to their social infrastructure. At present the concept of resilience takes a central place and is further developed in the study of linked social-ecological systems (Folke 2006:260; see also Berkes and Folke 1998; Berkes, Colding and Folke 2003; Walker et al. 2004; Visser 2006).

While resilience can in a social context arguably only be illustrated, not modelled (Scheffold 1990:39), I consider the concept valuable for the fresh perspective that it offers on change and on how societies deal with change. In the following, a number of concepts related to resilience will be explained. Further on in this study I will get back to these in relation to specific features of the Agta's socio-economic system and I will reflect on them more generally in the concluding chapter.

A major distinction is between resilience and adaptability on the one hand, and transformability on the other hand. Resilience is defined as the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity and feedbacks (Walker et al. 2004:2). Folke (2006:259) provides a useful addition to this definition by noting that '[...] resilience is not only about being persistent or robust to disturbance. It is also about the opportunities that disturbance opens up in terms of recombinations of evolved structures and processes, renewal of the system and emergence of new trajectories.'

Walker et al. (2004:2-3) propose four aspects that together determine a system's resilience. Adaptability is the capacity of actors in that system to influence resilience by manipulating one or several of these four aspects. These are firstly, 'latitude', or the maximum amount a system can be changed before losing its ability to recover; secondly, 'resistance', which refers to how easily a system can be changed; thirdly, 'precariousness', which indicates how close the system currently is to a limit (when this limit is breached the system will disintegrate); and fourthly, 'panarchy', or the influence from scales above and below the focal scale, which I interpret as the external influences on the system.

Transformability, in contrast, is the capacity to create a fundamentally new system when ecological, economic, or social (including political) conditions make the existing system untenable (Walker et al. 2004:2-3). In other words, while resilience and adaptability have to do with the dynamics of a particular system or a closely related set of systems, transformability refers to fundamentally altering the nature of the system (Walker et al. 2004: 2). I find this distinction between resilience and adaptation on the one hand, and transformation on the other hand very helpful to interpret the Agta's responses to social and environmental change.

⁴ In fact, as early as 1935, De Josselin de Jong used the Dutch equivalent of the word resilience (*veerkracht*) in relation to the survival of indigenous elements in Indonesian culture despite powerful Hinduist and Islamic influences (de Josselin de Jong 1935:174, 180).

What stands out from the anthropological interpretations of change in Agta society as summarized in the foregoing paragraph is the great importance that is attached to specific aspects of Agta culture such as language, foraging and the use of bows and arrows. Their occurrence is taken as indicator of cultural integrity, and consequently, their alteration or disappearance is understood as indicator of cultural degradation. In this view, the Agta go through a process of change that is about to lead to the disintegration of their socio-economic system and its replacement by a fundamentally different system. This new situation either consists of physical extinction, or hybridization.

Using a resilience and adaptation lens to view change among the Agta provides a different perspective. It reminds us that the Agta's ancestors have already gone through a language switch several thousands of years ago during which they abandoned their Negrito languages in favour of Austronesian ones (Reid 1987; B. Griffin 2002:44); that the Agta's involvement in foraging and other activities has been historically variable (M. Griffin 1996:15); and that hunting and fishing tools have evolved over time (Persoon and Minter in press).

Indeed, under the influence of environmental change and cultural creativity, hunter-gatherers have undergone substantial behavioural modification throughout history. Even when situated in a world of hunter-gatherers alone, their cultures were not static (Layton 2001:294). Change occurs as a result of adaptive necessities (Rowley-Conwy 2001:64). Thus, the resilience perspective suggests that it is because of these very changes that the Agta are still here as a distinct cultural group. I therefore agree with Bird-David (1988:29-30) that rather than as indicators of cultural loss, many aspects of change may be seen as ways to ensure cultural continuity.

A similar view has been proposed for several other foraging peoples, both within and outside the Philippines. Examples are ethnographies on the Malaysian Chewong (Howell 1984) and Batek (Endicott 1979a; Lye 2004). Indeed, Lye (2004:2) writes:

‘I am not worried about cultural survival issues. Those will take their course and the Batek will deal with them as they have always dealt with socio-cultural change’.

Likewise, Rival (1999:103), notes for the Amazonian Huaorani:

‘Despite predictions that the national society would quickly absorb this reduced, egalitarian, and foraging group, Huaorani people are, twenty-five years on, flourishing’.

Within the Philippines, Seitz (2004:8-9) stresses resilience in his documentation of the Aeta's coping mechanisms following the Pinatubo eruption:

‘To view the Aeta as a “particularly vulnerable group” even before the eruption [...] was and still is inaccurate [...]. [...] the idea of the Aeta being not only a needy and underprivileged, but also a disappearing group has always been widely accepted. The Aeta and their culture were often portrayed in terms that ran counter to real circumstances and developments. Neither was it justified to draw a picture of the Aeta as a generally destitute group, nor see them as becoming extinct’.

As is clear by now, for the Agta, in contrast, earlier alarming predictions have so far hardly been put in perspective. There are two important exceptions. In a critical reflection on his own assumptions regarding cultural degradation, M. Griffin (1996:15) suggests that the focus on cultural change blinds us for the importance of cultural continuity:

‘[...] I thought I saw the Agta changing wherever I looked. The Agta acting as paramilitary units, working as farm labor, living close to farmers, and not hunting or gathering much was all radical change to me. This proved to be a difficult presumption and attitude to overcome in subsequent research. I did not get over my “culture change” filtered view of the Agta until just before leaving the field in late 1994. Only then did I see that what the Agta do is often cyclical: sometimes hunting, sometimes farming, sometimes wage labor, and in and out of indebtedness’.

Responding to Rai’s observation that the Agta are in a unique moment of transition away from foraging, M. Griffin (1996:58-9) comments that social systems need not be determined by subsistence strategies:

‘The means of subsistence that people who are currently (or until recently) classified as foragers pursue are extremely diverse and related to particular environments. When the Agta case is looked at in a wider historical perspective, what seems to remain constant is their social system of kin-based relationships. What cyclically changes is how they overcome the various limitations posed by their environment. Social systems change and manage to reinforce themselves according to historical moment’.

In a short article, B. Griffin (2002:41, 44-5) expresses similar confidence that given the Agta’s extensive history of adapting to change, they may be equipped to deal with present and future change as well, even if the future appears bleak. This sort of cautious optimism provides a welcome counterweight to the dominant notion of deculturation and, leaning on the concepts of resilience and adaptation, I aim to take it forward in succeeding chapters.

INDIGENOUS PEOPLES AND RIGHTS TO NATURAL RESOURCES

Although anthropologists have described the Agta's and other indigenous peoples' tribal extinction as an almost inevitable fate, two complementary suggestions to counter the process have been consistently forwarded. First, deforestation and other forms of environmental degradation were to be halted. Second, further encroachment into indigenous territory was to be prevented by granting secure land ownership to the original inhabitants (Headland 1986:444; Eder 1993:222-3; B. Griffin 2002:41). These ideas were not confined to the situation of the Agta or other Negrito peoples. Both within and outside the Philippines, recent decades have seen growing concern over the state of the environment and the state of indigenous peoples. It must be stressed that this concerns two parallel processes, which only partly overlap. That is, environmental agendas have largely developed independently from indigenous rights agendas, and only more recently attention has arisen for the relationship between the two. Since I am mainly concerned with this convergence of agendas, this is what I will focus on in the following.

Where logging, mining and other forms of large scale resource extraction take place, indigenous cultures are reported to suffer disproportionately (Bodley 1999a). The other way around, it is widely documented that biodiversity rich areas tend to overlap with areas inhabited by indigenous peoples (Posey 1999; Kemf 1993). These observations have given rise to the notion that conservation of cultural and biological diversity should go hand in hand. Indigenous peoples have come to be seen as ideal stewards of nature (Persoon 2004). This view has gained ground in the international policy arena. The UN Declaration on the Rights of Indigenous Peoples, which was adopted by the UN General Assembly in 2007 after two decades of negotiation, explicitly states that respect for indigenous cultures contributes to sustainable environmental management. Within the Convention on Biological Diversity, which is ratified by 191 countries (including the Philippines), the value of indigenous resource practices for biodiversity conservation is dealt with in a separate article (Article 8j) (CBD 2008).

National governments have responded to these developments in varied ways. While the concept of indigenusness has been part of political discourse in Latin and South America since colonial times (Assies, van der Haar and Hoekema 2000), elsewhere in the world it is much less accepted.⁵ Many governments claim that all their constituents are indigenous. They fear that granting special rights to part of their population on the basis of ethnicity or a 'first comers' status will create dangerous tensions within ethnically diverse countries (Persoon et al. 2004; Kuper 2003:395).

⁵ The political sensitivity that surrounds the concept of indigenous peoples has made it difficult to come up with an internationally accepted definition of the term (Persoon et al. 2004:8-9). Within the UN system, however, the following working definition is used: 'indigenous communities, peoples and nations are those which having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the societies now prevailing in those territories, or parts of them. They form at present non-dominant sectors of societies and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal systems'.

The Philippines have a progressive reputation in this respect. In contrast to other Asian countries, it officially adopted the concept of indigenous peoples and created space for indigenous peoples' issues in its policies and legislation since the early 1990s. This implied a breach with earlier, much more oppressive policies. The Philippine land classification system prescribed that all land with slopes of 18% and above was State-owned forest. Under this system, almost all of the country's indigenous people were illegal squatters on public land despite their historical occupation of these areas (Eder and McKenna 2004:64). At the same time, indigenous populations were confronted with logging and mining operations, plantations and infrastructural projects. The social and environmental consequences of these developments became the focus of powerful public protest by local communities, NGOs, church-based groups and the media in the course of the 1970s. The replacement of the Marcos regime in 1986 by a more pluralistic administration marked the beginning of a new trend. Rather than being considered illegal squatters on State land, indigenous peoples came to be regarded as the ultimate partners in protecting what remained of the country's natural resource base (Vitug 1993; Poffenberger and McGean 1993; Leonen 1998:22; Persoon et al. 2003:220; Aquino 2004:62, 64).

Again, the confluence of environmental and indigenous peoples' rights agendas is visible from various legal and policy measures that arose independently. In 1992 the National Integrated Protected Areas System (NIPAS) was installed. Its main aim was conservation of biological diversity through the designation of protected areas throughout the Philippines. The NIPAS Act (DENR 1992) allows for the proclamation of such protected areas, but on the condition that indigenous peoples can continue to live and extract resources within park boundaries, and participate in park management. One year later, in 1993, the Department of Environment and Natural Resources (DENR) issued an administrative order (DAO 02), which had its origins in a series of earlier forest management policies. In contrast to these, DAO 02 was specifically directed at indigenous peoples as forest managers. It enabled indigenous peoples to request recognition of collective and individual rights to their ancestral domains. Since 1993, the DENR has issued 181 such claims, covering over 25,000 km² of ancestral land. In 1998, it handed over responsibility of ancestral domain issues to the newly created National Commission on Indigenous Peoples (Aquino 2004:69, 72-3; Pabico 1998).

The creation of this Commission was the result of a parallel process: a lobby for indigenous rights legislation by a group of lawyers and social activists. As in other parts of the world, this movement was driven by the urge to undo injustice brought upon indigenous peoples in colonial and post-colonial periods. Although the 1987 Constitution did contain provisions on the recognition of indigenous peoples' rights, it was felt that specific legislation was needed. The result was the Indigenous Peoples' Rights Act (IPRA), which was enacted in 1997. Being the first of its kind, the IPRA was internationally welcomed as a landmark law. Domestically, however it was the focus of controversy, which has delayed its actual operation until the year 2000. The contentious issue concerned the transfer of ownership of public land to collective social entities. While this transfer of land ownership has been argued to be unconstitutional, the Supreme Court eventually ruled for its legality. With that, the primary responsibility for indigenous peoples' affairs came to rest with the above mentioned National Commission on Indigenous Peoples (NCIP) (Ballesteros 2001; Eder and

McKenna 2004:67). The Commission's main mandate is to help indigenous peoples throughout the country get legal ownership over their territories. The conversion into legal titles of the 181 ancestral domain claims issued by the DENR thus became the NCIP's responsibility.

On the face of it, with all these developments much has changed since anthropologists raised alarm over the Agta's imminent tribal extinction. It seems their calls for environmental conservation measures and greater land security for indigenous peoples were noted. A protected areas system was installed to create safe havens from deforestation, which could in theory benefit indigenous peoples. Progressive legislation was enacted to ensure that indigenous peoples can claim collective land rights and self-determine their paths of development, even within protected areas. These developments were the result of an alliance between nature conservation and indigenous rights advocates that became influential both within and outside the Philippines. The alliance, however, is not without tension (Persoon 2004:6). Indigenous rights and environmental agendas may not be as compatible as was initially hoped.

Critics show that indigenous peoples are not necessarily inherent environmental stewards. They argue that usual portrayals of indigenous peoples as noble ecological savages present them in static, naive ways that are far removed from the more complex reality (Ellingson 2001:348; Duhaylungsod 2001:610-11; Kuper 2003:390). Examples of such portrayals of the Agta and other Negritos are plentiful. Bennagen (1977:190), for instance, refers to the Agta of Palanan as 'original ecologists', saying that 'the Negrito is an intrinsic part of his environment' and that 'ecological awareness has sustained them [Agta] through the centuries'. He further writes that 'Against the bleak landscape of depredations, the Negrito emerges as ecological hero' (Bennagen 1977:190). In a similar fashion, Rice and Tima (1973:29-30), quoted by Noval-Morales and Monan (1979:81) observe that 'As a result of their cosmology, the Negritos tend to be conservative in their methods of exploitation of their natural resources'. Rai (1982:6) and Magaña (2000:1) have referred to the Agta as 'eco-system people' in order to emphasize their harmonious relationship with the eco-system of which they are said to be part. Claims like these are rarely substantiated. The relationship between indigenous peoples and the natural resource base on which they depend is much more complicated and often less harmonious than the stereotype suggests (Hames 2007; Kelly 1995:158; Demmer and Overman 2001; Aquino 2004).

Conversely, it is argued that human rights issues have been taken over by the environmental agenda. Indigenous peoples' advocates point out that recognition of indigenous peoples' rights is more than an environmental concern (Leonen 1998:33; Bryant 2000). Conservation agencies (both governmental and non-governmental) have been accused of dictating 'enforced primitivism' (Borgerhoff Mulder and Coppolillo 2005:189), by demanding that indigenous peoples in protected areas only use traditional resource extraction methods (Layton 2001:310-11; Holt 2005:212). Indeed, within the Philippine context such provisions take a central place in environmental and indigenous rights legislation. The NIPAS Act stipulates that indigenous peoples are allowed to continuously live in protected areas provided that they exclusively use traditional resource extraction methods. The IPRA grants indigenous communities ownership of their territories on the condition that they will manage these in a traditional and sustainable manner. This raises ethical questions with respect to

indigenous peoples' ability to develop in accordance with their own cultural and economic goals (Eder and McKenna 2004:80).

While conservation agencies like the World Wide Fund for Nature (WWF) and the International Union for the Conservation of Nature (IUCN) have formulated policy guidelines regarding indigenous peoples in protected areas (IUCN and WWF 2000; WWF 2008), their sincerity has been questioned. Chapin (2004) claims that the world's largest and most powerful conservation NGOs have altogether abandoned their previously proclaimed cooperation with indigenous peoples. He maintains that these organizations have become indifferent to indigenous peoples' concerns and pay lip service to them only for fundraising purposes.

If growing estrangement marks the relationship between conservationists and indigenous peoples (Hames 2007:185; Chapin 2004), in Philippine political and public discourse the alliance is still very much alive. Indigenous peoples continue to be put forward as the best possible partners in conservation by both government and NGOs. As I will show, the Agta are time and again hailed as stewards of the Sierra Madre by local advocacy groups and politicians. This rhetoric does not lead to any action on the ground though. As mentioned, one of the guiding questions of this study is how government interventions, including modern policies in the field of environmental conservation and indigenous rights affect the Agta. We will soon see that this impact is minimal since neither the NIPAS Act nor the IPRA are effectively implemented. The establishment of the Northern Sierra Madre Natural Park does in practice not halt forest degradation. Also, although the Agta can theoretically claim rights to their ancestral domains, efforts towards this end have over the past decade not generated substantial results. The chapters that follow will therefore demonstrate that, in spite of recent policy shifts, previous anthropologists' appeals for environmental protection and recognition of rights to ancestral land have only been given theoretical support. In Leonen's words, in indigenous peoples' everyday lives 'the law is marginal' (Leonen 1998:44), while other forces turn out to be much more influential.

THE STUDY AREA

This study focuses on an Agta population of about 1,800 individuals living in and around the Northern Sierra Madre Natural Park, in the province of Isabela. It describes and analyses the ways in which this population responds to social and environmental change. For a proper understanding of the Agta's situation it is important to know something of the world that surrounds them. I will first sketch the larger context before zooming in to the Northern Sierra Madre Natural Park.

Cagayan Valley and Isabela Province

Isabela is the Philippines' second largest province, covering over 10,664 km². Together with the provinces of Batanes, Cagayan, Quirino and Nueva Vizcaya, it is part of the Cagayan Valley, or Region 02 (map 1.2). The Cagayan Valley is among the remotest, poorest, and least urbanized of the country's 16 administrative regions (PPDO 2000:2;

RLUC 2005:9, 13, 24-8). Each of the region's provinces is administered by a governor and the provincial offices of various line agencies. Since the enactment of the Local Government Code in 1991, central government power and resources have been devolved to offices at regional, provincial and municipal levels (van den Top and Persoon 2000). This includes the National Commission on Indigenous Peoples (NCIP) and Department of Environment and Natural Resources (DENR), which have regional, provincial and district or community offices, with the latter covering various municipalities.

The country's largest river, the Cagayan, traverses the region from south to north, discharging in the Babuyan Channel. The major towns are located along the river, and are connected by North Luzon's only highway, a two-lane road. The Cagayan Valley is bounded by the foothills of the Central Cordillera on the west, the Caraballo Mountains in the south and the Northern Sierra Madre in the east. The region has a tropical climate. Total annual rainfall varies from 1600 mm in the valley, to 4400 mm in the mountains. Humidity is generally high, ranging from 70% to 90% and temperatures vary from 17°C to 35°C, with December and January being the coolest, and April, May and June the hottest months. The Cagayan Valley is situated in the Philippines' typhoon belt and receives an average of 12 tropical storms each year. Most of these occur during the wet season, which roughly runs from July to December (RLUC 2005:13).



Map 1.2 Region 2 (Cagayan Valley)

In 2000, the region had a population of 2.8 million, 1.3 million of which live in Isabela. With 121 persons per square kilometre Isabela belongs to the most sparsely populated provinces of the Philippines (NSO 2005a:213-4). Population growth rates are high, as they are throughout the country. The Philippine population has more than doubled over the past 30 years. If it continues to grow at its current rate, it will double again within another 30 years (NSO 2005a:191-3). This high natural growth is the combined result of persisting high fertility and decreasing mortality. Since effective family planning hardly occurs⁶, crude birth rates only declined from 26.4 per 1,000 persons in 1970 to 24.1 in 2005. In the same year, the Philippines had a total fertility rate of 3.4 children per woman and an average household size of five (NSO 2007a; NSO 2005a:305). While fertility remains high, mortality has dropped from 6.4 per 1,000 persons in 1970 to 4.8 in 2000. As a result, life expectancy at birth has increased from 57 in 1970 to 71 in 2005 (NSO 2005a:227; Unicef 2007a).

In the Cagayan Valley, immigration further adds to the high growth rates (table 1.1). The majority of immigrants are of Ilocano origin. They were initially drawn to Isabela by the availability of agricultural land. From the 1950s onwards, employment opportunities offered by the logging industry resulted in accelerated immigration of especially Tagalog and Visayan labourers. In recent decades, a new wave of land seeking migrants, notably Ifugao and Tingguian from the Cordillera Mountains have settled in the Sierra Madre uplands.

Of Isabela's 37 municipalities nine overlap with the research area, that is the Northern Sierra Madre Natural Park (map 1.1). In the year 2000, the total population of these towns amounted to 297,803, or almost one fourth of Isabela's total population (PPDO 2000:19) (table 1.2). As Chapter II will show, only part of this population lives within or next to the park boundaries. The coastal towns of Palanan, Divilacan and Maconacon are the only municipalities that are fully covered by the park. With the exception of the old missionary town of Palanan, they all classify as small towns, with populations of less than 5,000. Like Dinapigue, they have a recent history, as they arose as municipalities only during the logging boom. With the ending of commercial logging in the early 1990s they lost much of their vibrant character, as did the inland municipality of San Mariano (see also Persoon and van der Ploeg 2003).

Table 1.1 Population growth 1980-2000 (in millions)¹

	1980	1990	1995	2000
Philippines	48.1	60.7	68.6	76.5
Cagayan Valley (Region 02)	1.9	2.3	2.5	2.8
Isabela	0.9	1.1	1.2	1.3

¹ Source: NSO 2005a:210

⁶ The most important reasons for this are poverty, lack of information, and strong opposition to the use of contraceptives by the Roman Catholic church, to which as many as 61.8 million Filipinos belong (Varga and Zosa-Feranil 2003:6, 21; NSO 2005a:224, 305; NSO 2005b:25).

Table 1.2 Population and land area per municipality in 2000¹

Municipality	Population	No. of households	Land area (ha) ²
San Pablo	19,090	3,466	63,790
Cabagan	41,536	7,250	43,040
Tumauini	50,256	9,239	59,940
Ilagan	119,990	24,085	139,360
San Mariano	41,309	7,796	149,650
Dinapigue	3,171	635	93,892
Palanan	15,317	2,837	74,750
Divilacan	3,413	633	89,200
Maconacon	3,721	786	68,992

¹ Sources: PPDO (2000); NSO (2000); RLUC (2005); LGU San Pablo (2003); LGU Cabagan (2000); LGU Tumauini (2000); LGU Ilagan (2003); LGU San Mariano (2000); LGU Dinapigue (2001); LGU Palanan (2000); LGU Divilacan (2005); LGU Maconacon (undated).

² Municipal land area statistics differ per source. For table 1.2, as much as possible use is made of the data presented in the municipal Comprehensive land use plans as these seem most accurate and consistent. If these were not available, the Regional physical framework plan (RLUC 2005) was consulted.

Within the Philippines, which classifies as a lower middle income country (World Bank 2006), the Cagayan Valley is among the poorest regions (RLUC 2005:24-8). In 2000, nearly 60% of Isabela province's population lived below the poverty threshold, having an annual income of less than Php40,000 (US\$833) (table 1.3). It is important to note that within Isabela, income and access to basic services are unevenly distributed. There is a vast contrast between the relatively urbanized valley on the one hand; and the mountains on the other hand, where poverty is most extreme. It is in the context of this extreme poverty, that Agta and non-Agta are living next to each other and their relations must be viewed in this light.

Table 1.3 Average annual per capita incomes in 2000¹

	Php	US\$
Philippines	32,141	669.2
Cagayan Valley	25,875	538.7
Isabela	27,574	574.1

¹ Source: NSO 2007b

Poverty shows in many ways. The Food and Nutrition Research Institute, for instance, reports that in Cagayan Valley nearly one third of children younger than five are underweight. These rates are among the highest in the Philippines (Cerdeña et al. 2001). Sanitary conditions are problematic. While 80% of the Philippines' national population had access to safe sources of drinking water in the year 2000 (NSO 2005a:628) less than half of Isabela's population had so. The availability of (good quality) medical services is limited to the larger town centres. Isabela roughly has one doctor available for every 4,700 persons, one nurse for every 3,000 persons, and one

hospital bed for every 1,400 persons. Literacy, especially functional literacy,⁷ is low. Although the government of Isabela claims that educational facilities are more or less evenly distributed throughout the province (PPDO 2000:60-2, 112), elementary and secondary schools are thinly spread within the remoter areas.

While logging once was the major driver of Cagayan Valley's economy, since the instalment of local logging moratoria in 1992 (van den Top 2003), the forestry sector's contribution to the regional economy has decreased to 1%. Cagayan Valley now mainly depends on the agricultural sector, which contributed over 54% to the regional domestic product in 2000 (RLUC 2005:24-8). Agricultural production is much affected by yearly typhoons (Huigen en Jens 2006). Grains are the most important product. In 2003, the region was the third most important rice producer and the second most important corn producer (NSO 2005a:357-9). In Isabela province, irrigated rice and corn take up as much as 95% of the province's croplands and 36% of the province's total land area (PPDO 2000:19, 41, 83-4). While both irrigated and dry rice have been major crops for centuries, yellow corn production has taken a leap more recently (Hobbes and de Groot 2003) and increasingly dominates the agrarian landscape.

Isabela's most important agricultural areas are situated in the western lowlands, on either side of the Cagayan River. Despite attempts at land reform starting in the early 1970s, much of this land is still in the hands of several landlords who either hire day-labourers to cultivate it or rent it out to small farmers (Schuren 2002:71). From the valley, several largely unpaved roads lead eastwards to the more sparsely populated and extensively cultivated Sierra Madre foothills. These denuded areas have been logged by various logging companies between the 1950s and early 1990s, and were afterwards converted into agricultural land by immigrant farmers. They mainly grow yellow corn, rain fed rice, root crops and banana (Overmars 2006; PPDO 2000:19, 41, 83-4). Beyond the foothills, one reaches the Northern Sierra Madre's steeper slopes, which are still largely forested and inhabited by the Agta.

The Northern Sierra Madre Natural Park

The Northern Sierra Madre Natural Park is the largest protected area in the Philippines. It was officially established as protected area under the NIPAS (DENR 1992) in 1997⁸ after representatives of the municipalities covered by the proposed park had endorsed its declaration. In 2001 the Congress of the Philippines adopted Republic Act no. 9125, or the Northern Sierra Madre Natural Park Act, which holds specific regulations for the park. In the same year, a park management plan was drafted. Various internationally

⁷ Provincial and municipal statistics only report 'simple literacy', which is the ability of a person to read and write with understanding a simple message in any language or dialect. No figures are available for 'functional literacy', which is a significantly higher level of literacy, and includes numeracy skills, which must be sufficiently advanced to enable the individual to participate fully and effectively in the activities of daily life (NSO 2005a:262; NSO 2000:xxiv).

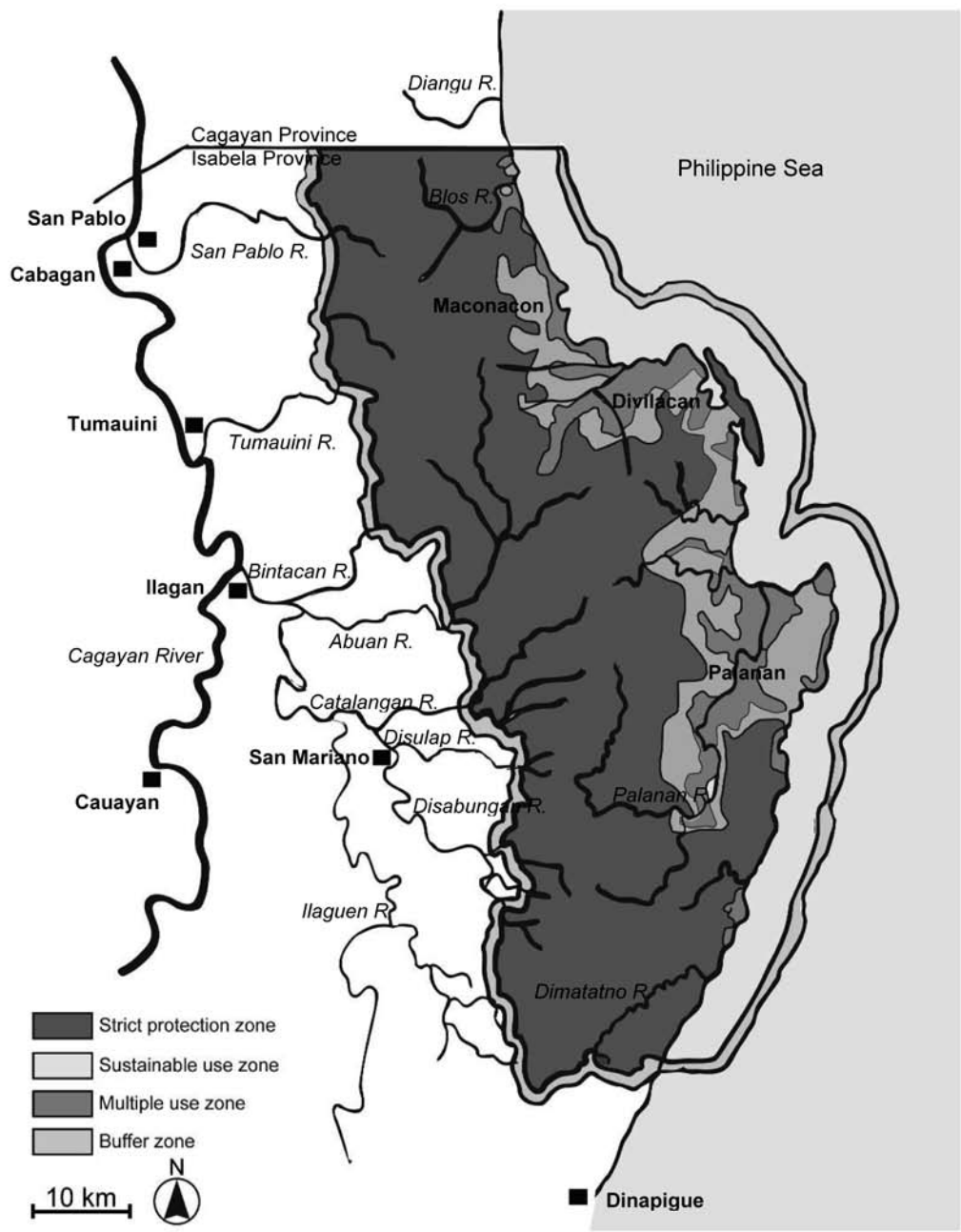
⁸ Through Presidential Proclamation no. 978. Note that Palanan was already designated as Wilderness Area by President Marcos in 1979 but commercial logging continued (Persoon and van Weerd 2006:92; van den Top 2003:224).

funded conservation projects started, all of which had ended by the time of writing (Persoon and van Weerd 2006:92).

The Northern Sierra Madre Natural Park covers nearly 360,000 hectares, 75% of which consist of terrestrial and 25% of marine habitat (Persoon and van Weerd 2006:93). It covers Luzon's last undisturbed lowland dipterocarp rainforest and further includes montane forest, limestone forest, mangroves, beach forest, coral reefs and other marine eco-systems. On the Philippine list of conservation priorities the protected area rates 'extremely critical' (Ong et al. 2002:88). It supports a great number of threatened and near-threatened bird, mammal, amphibian, reptile and marine species, many of which are endemic to the Philippines (Mallari et al. 2001:154-60). The park's highest peaks reach up to over 1,800 meters. Several rivers cut through the forest. On the interior side of the mountain range the San Pablo, Tumauini, Bintacan, Abuan, Catalangan, Disulap and Disabungan rivers flow to the Cagayan River. On the Pacific side the Diangu, Blos, Palanan and Dimatatno rivers discharge in the Philippine Sea (map 1.3).

The park falls within the provincial boundaries of Isabela and (partly) covers nine municipalities. As mentioned, in the year 2000 these had a total population of close to 300,000 people (PPDO 2000:19). Of these, about 23,000 people live within the protected area's boundaries, including some 1,800 Agta (DENR 2001a; Magaña 2000). The remainder of the park's population partly consists of people with a long history in the area. These are the Ibanag who live all along the western foothills, the Kalinga in the interior of San Mariano and the Paranan in Palanan. The majority, however, is made up of migrants of predominantly Ilocano ethnic origin, who have settled in the Sierra Madre foothills over the past century. Smaller groups of migrants, notably of Ifugao and Tingguian origin have more recently settled in all parts of the park.

The NIPAS Act stipulates that people who have lived in a protected area or cultivated land there for at least five years prior to its establishment, cannot be relocated against their will. Moreover, they retain their land rights. The Philippine land classification system differentiates between 'forest land' and 'Alienable & Disposable land' (A&D land). In practice, the major criterion for distinguishing between the two is slope: lands with a slope of 18% and above are generally considered forest lands (Kummer 1991:44). While A&D land is eligible for private ownership, all forest land belongs to the State. In Isabela, as much 66% of the total land area (0.6 million hectares) is classified as forest land (DENR 2004:5), almost all of which is located in the Northern Sierra Madre, and therefore within the park (PPDO 2000:3-4). Nonetheless, considerable tracts of A&D land are present within the protected area, notably along the coastal strip, along Palanan river and in the lower portions of Divilacan. Moreover, the presence of people without formal land rights is unofficially tolerated.



Map 1.3 The Northern Sierra Madre Natural Park and its management zones (DENR 2001a)

The park's management plan outlines a zoning system which takes the presence of these human communities into account (DENR 2001a:72-81). Four zones are important here (map 1.3). First, except on the northern boundary with Cagayan Province, the park is surrounded by a 1 km wide buffer zone. It is meant to function as a social fence against encroachment, but no real restrictions apply here. On the park's coastal side, a multiple use zone and a sustainable use zone together cover some 53,000 ha, or 14% of the total protected area. Few restrictions apply in the multiple use zone, although sustainable land use is promoted. In the sustainable use zone only 'traditional and sustainable resource utilization' is allowed. The remainder of the protected terrestrial area consists of a strict protection zone, which covers 240,000 ha, or 67% of the total area. Within the strict protection zone, only the indigenous Agta are allowed to settle and extract resources, provided that 'traditional resource use' is practiced (DENR 2001a:73). The real implications of this zoning system will be repeatedly discussed throughout the following chapters, and especially in Chapter VI. Here, it suffices to say that the management strategy has focused on self regulation, promotion of sustainable resource use, awareness raising, and alternative livelihood projects, rather than on punitive action. This strategy is locally known as the 'people first approach'.

The body responsible for the implementation of the management plan is the Protected Area Management Board (PAMB), which was created in 1998. The PAMB controls and supervises the Protected Area Superintendent and is chaired by the Regional Director of the DENR. In the PAMB the main stakeholders to the park's natural resources are represented. There are 36 PAMB members in total, 12 of whom are indigenous representatives. Other main stakeholders represented in the management board are the provincial office of the DENR, the planning and development officer of the provincial government of Isabela, the local governments of the nine municipalities covered by the park, *barangay* (village) administrations and NGOs. The PAMB meets quarterly in rotating locations to decide on management issues. Two of these are general assembly meetings, and two are executive committee meetings. In the latter, one Agta representative holds a seat. The office of the Protected Area Superintendent, which falls under the DENR, acts as the secretariat during PAMB meetings. The DENR, together with the municipal and *barangay* governments, police and army are responsible for law enforcement.

The park is presently threatened mainly by illegal logging, agricultural expansion and over-hunting (DENR 2001a:52-4). Despite cancellation of most logging concessions in the early 1990s, illegal logging continues on a large scale throughout the Sierra Madre. Where new forest clearings arise, conversion of these clearings into farmland usually occurs, leading to permanent loss of forest cover (van den Top 2003). As local populations continue to grow, both as a result of natural growth and immigration, the need for additional farmland persists. Moreover, population expansion increases competition over game and fish stocks. These recurring problems will be discussed in detail in later chapters.

Imminent threats further come from mining and road development. In order to boost the local economy, the government would like to see that mineral deposits are exploited (RLUC 2005:146). The Cagayan Valley has copper, gold, iron and nickel reserves and in 2002, 115 mining applications were under review region wide (RLUC 2005:101, 146; PPDO 2000:4, 48, 84). In 2007 the provincial government of Isabela

approved an application by the Platinum Group Metals Corporation to mine nickel in Dinapigue. The mine is situated adjacent to the Northern Sierra Madre Natural Park and it overlaps with the Agta's hunting and fishing grounds (see Chapter VI and de Brabander 2009).

Road construction has been on and off the agenda of the park's PAMB meetings over the past years. This concerns both a coastal road that will connect the four coastal municipalities, as well as one across the mountain range. At present, the only road that crosses the mountain range to the Pacific coast runs to the southern coastal town of Dinapigue. The other coastal towns of Palanan, Divilacan and Maconacon are only accessible by sea, light plane, or on foot. One reason that road construction is heavily promoted is the potential it is thought to bring for tourism development (PPDO 2000:99; RLUC 2005:103-4). For various reasons, however, these plans have little potential (van der Ploeg and Taggug 2003:367). Moreover, they may seriously harm the park's biodiversity (Elixhauser et al. 2003:350).

RESEARCH QUESTIONS AND METHODOLOGY

The main focus of this study is on contemporary Agta livelihood strategies and natural resource use under circumstances of social and environmental change. I define livelihood strategy as the way the Agta select and combine specific activities for making a living. It is not just the sum of these activities, but the way they interact in order to gain maximum livelihood and social security. Following Chambers and Conway (1991) and Scoones (1998), the analysis takes place mostly at the household level. Social change is to be understood as three processes that take place simultaneously. First, it refers to non-Agta population expansion into Agta territory. Second, it refers to change within Agta society. Lastly, it refers to the changing policy situation with respect to environmental management and indigenous rights, minimal though its impact may presently be. By environmental change I mean the effects of logging, hunting, fishing, gathering and other activities that non-Agta and Agta engage in on the one hand; and environmental conservation initiatives on the other hand. The following specific questions have guided this study.

1. How many Agta live within the Northern Sierra Madre Natural Park (NSMNP), where do they live, and how is this population demographically structured?
2. What are the characteristics of contemporary Agta culture and social organisation?
3. What livelihood strategies do the Agta of the NSMNP follow, how do these strategies come about and what are the implications for natural resource use within the NSMNP?
4. What is the nature and importance of Agta's relations with non-Agta farmers, loggers, traders, missionaries, NGO personnel, government officials and others?
5. What is the impact of (non-)governmental interventions, including environmental and indigenous rights legislation, on the Agta's socio-economic situation?

In answering these questions I have sought to highlight what Pelto and Pelto (1975) have called 'intra-cultural diversity'. For although there is much attention for the great diversity *between* hunter-gatherer societies (see Kelly 1995; Lee and Daly 1999; Burch and Ellana 1994; Ingold et al. 1988a, b; Panter-Brick et al. 2001), much less consideration has been given to diversity *within* such societies. Overgeneralizations have arisen because anthropologists have mostly limited their studies to one particular sub-group in relatively small research areas (Kent 1992:54, 61), and because relatively long fieldwork periods were spent with a small number of particularly informative community members (Pelto and Pelto 1975:7).

Indeed, most studies on the Agta are based on fieldwork within a fairly limited area (see Headland 1986; Headland and Headland 1997, 1999; Early and Headland 1998; J. Peterson 1978b; Bennagen 1976). In as far as they covered several sub-groups, this has not led to in-depth analysis of differences and commonalities between them (see Rai 1990; Griffin and Estioko-Griffin 1985; Estioko-Griffin and Griffin 1981a; P. Griffin 1989). Even in the rare cases where there has been explicit recognition of internal divisions within the wider Agta population it was concluded that the Agta of eastern Luzon represent a single network (see M. Griffin 1996:38-40; Early and Headland 1998:59).

By ignoring internal diversity we miss out on the opportunity of better understanding processes of cultural change and adaptation. It will mask the flexible nature of foraging societies (Kent 1992:61). As Kelly (1995:34) aptly puts it: 'There is nothing wrong with seeking generalizations; indeed, this is part of the obligation of a scientist. But generalizations should not mask the underlying variability; rather they should be steps toward understanding it'. Or, in the words of Panter-Brick et al. (2001:6): '[...] it is the *range of behaviours* and the *flexibility* of human groups, not uniformity, which deserves emphasis'.

Thus, in this study I focus on diversity by comparing several Agta groups. It is only through careful consideration of micro-level details that we will be able to better understand macro-processes such as the impact of environmental and social change on the Agta as a cultural group. This requires paying attention to diversity in Agta's relations with non-Agta. It also calls for consideration of the existence of socio-economic differences within the Agta population. In contrast to other scholars, I therefore do not view the entire Agta population as one single network. Instead, as I will explain in the next chapter, I see the Agta population of the Northern Sierra Madre Natural Park (which of course is part of the larger Agta population of Northeast Luzon) as consisting of several kinship networks that show internal coherence in several respects. Within these kinship networks I distinguish between various residential groups, which, despite considerable mobility, tend to mainly occupy one river valley or one stretch of coast.

Methodology, site selection and organization of field work

I will here summarize the general methodology used, while I refer to the Appendix for a detailed description of each research component and resulting data-set. In order to be able to see both commonalities and differences within the Agta population of the Northern Sierra Madre Natural Park two complementary approaches were taken. First,

a socio-economic survey was conducted among the entire Agta population within the park. This survey included a house to house census, a livelihood profile and ethnographic research. Second, based on this survey, three Agta residential groups were selected for in-depth research. This involved data collection on time allocation, hunting and fishing success, agricultural production, trade and nutrition. Field data were complemented with secondary data which were obtained from government and non-government offices. Another important source of information were the results from a workshop for 68 Agta households from throughout the study area, which was organized towards the end of the field work period, in August 2005 (see Minter et al. 2005).

For the socio-economic survey, site selection took place following the principle that all Agta settlements within and immediately outside the Northern Sierra Madre Natural Park were to be included. I aimed at reaching any Agta settlement of which the members depended on the natural resources within the protected area. In the case of the in-depth studies, the three residential groups were selected following the principle that they should differ from each other in as many respects as possible, notably subsistence strategies, environment and relationships with non-Agta. Moreover, they would have to fall within different kinship networks, the significance of which I will explain in Chapter II. The selected groups are the river-dwelling Disabungan and Diangu residential groups; and the coast-dwelling Dimasalansan residential group (see settlements no. 15-16; no. 24-25; and no. 39-44 respectively on map 2.2 and in table 2.3).⁹ Two of these residential groups have been the subject of previous anthropological studies. These are the Disabungan residential group, which was the focus of Navin Rai during his field work in 1979 and 1980, and the Diangu residential group, which was studied by Bion Griffin and Agnes Estioko-Griffin in the 1970s and early 1980s. This provides us with the opportunity to compare not only differences between Agta groups in space, but through time as well.

The Northern Sierra Madre is linguistically highly diverse, and among the study population three different Agta languages are spoken (Headland 1975; Robinson 2008). Since I would not be able to master all of these three and did not want to select just one, I chose to learn a language which would enable me to speak with Agta throughout the research area, as well as with non-Agta. This was Ilocano, which the Agta use in their communication with non-Agta. I followed a three week tailor-made language course in Baguio City, after which I further improved my knowledge of Ilocano in the field. Since I did not consider myself fluent enough in this language to be able to conduct in-depth interviews independently, I worked closely together with an assistant-interpreter during the entire study period. In the first project year this was Mr. Bernard Tarun, a forestry graduate from Isabela State University. In mid-2003 until the end of the project, I was always joined by Mrs. Maria Ranay-Pedrablanca, an environmental science graduate, also from Isabela State University. In addition, we locally hired what we called a 'camp manager', who took care of the many household chores that needed to be done daily. When travelling between Agta settlements, we

⁹ The names of these three residential groups refer to the main geographical area they are associated with. Note that I have assigned these names and that they do not always correspond with the names the group assigns to itself, as the latter are often too location specific for this purpose.

generally teamed up with one or more Agta guides as well, some of whom joined us through much of the park.

Although I am positive that it has not compromised the validity of my results, I am aware that the choice for the Ilocano language and my cooperation with a non-Agta assistant and ‘camp-manager’ has undoubtedly influenced my research. We were all outsiders to the Agta communities that I wished to get to know, and none of us spoke their own language (although my assistant made significant improvements in that direction through time). While I initially considered working with an Agta assistant, the only viable candidate was someone who was also caught up in other activities and was familiar with only part of the Agta population (and languages) covered by my study. I have always been sensitive to the possibility that my Agta informants would feel intimidated by our presence. I therefore carefully selected the people who accompanied me, important criteria being their soft-spoken and unprejudiced attitude towards Agta and a genuine interest in them. In the case of our ‘camp-manager’ we always worked with individuals who had known a particular Agta group for a long time, often since childhood.

Research permits were obtained from the PAMB of the Northern Sierra Madre Natural Park, from the NCIP and from the governments of each of the municipalities included in the study. Every field visit started with an explanation to each of our host communities of our purposes and an informal request for approval. Out of the three years that I lived in Cabagan (2002-2005), I spent nine months in the field, including travel time from and to Cabagan. Another two weeks of field work were carried out in February 2007. In each of the three selected residential groups about two months of field work were conducted, while the remainder was spent on survey activities throughout the protected area. Once she was sufficiently experienced, my assistant conducted an additional two months of field work to collect data on time allocation and hunting- and fishing success under my supervision. The data resulting from this field work were selected, organized and analyzed by me. In addition, I made use of data collected by several MSc and MA students who conducted research among the Agta under my supervision between 2002 and 2009. Wherever this is the case, I refer to these students’ reports in the text (de Jong 2003, van Velthoven 2004, Giebels 2005, Doornbos 2008, de Brabander 2009, Goslinga forthcoming).

Each field trip lasted between one and three weeks on end. For our survey activities, we spent between one and four days in each Agta settlement, before moving on to the next. In the three residential groups that we selected for in-depth research each field trip usually lasted two weeks. Field work was most complicated in the Sierra Madre’s interior, where Agta settlements are located far apart and the terrain is rough. Roads are non-existent and the only way to travel is on foot. During the wet season, rivers may swell quickly and often become impassable. Coastal Agta settlements are more easily accessible as they can be reached by motorized outrigger boat.

We camped next to Agta residences in light-weight tents. As Agta dwellings are small, to be precise, 3.9 m² as measured by Headland (1986:460), and since we did not wish to force ourselves onto one particular family, we found camping an appropriate way of being within everyone’s reach and sight, while maintaining independence at the same time. Moreover, the tents themselves generated a good deal of interest and entertainment. James Eder, when telling me about his field work among the Batak of Palawan, once said: ‘They were happy to see me coming, and they were happy to see

me going'. I guess that rather well reflects the way our Agta hosts felt about us. I wouldn't say that we were adopted into Agta families, as some anthropologists describe their position within their study population. We were, however, certainly warmly welcomed as an additional, albeit somewhat odd, household within the residential group. We had our own roof and took care of our own meals, although much sharing went on between our and other households. We functioned as coffee house and medical post for minor ailments. Occasionally, we were asked to give advice or to mediate in conflicts.

II. THE AGTA

Despite longstanding interactions with other ethnic groups, the Agta are in various respects dissimilar from neighbouring peoples. First, they differ from other Filipinos in terms of their history, to which they owe their most eye-catching feature: their Negrito appearance. The Agta's distinctiveness further lies in their demographic characteristics, language, social organization, settlement patterns, belief system, and in the way they make a living. This dissertation mainly focuses on the latter aspect. However, the Agta's livelihood system and the resulting resource exploitation practices can only be understood in relation to a socio-cultural context. Here, I will provide that context. While their common characteristics indeed set the Agta apart as a distinct socio-economic group, this does not mean they form a homogenous population. On the contrary, as this and the following chapters will show, heterogeneity forms an important feature of Agta society.

HISTORY

Prehistory

The Agta descend from the Philippines' first colonizers, a Negrito population which arrived in the archipelago between 35,000 and 60,000 years ago. These early Negritos were part of a major population dispersal which spread from Sundaland across the Wallace Line, through the islands of eastern Indonesia (Wallacea), to Australia/New Guinea and onward to the Bismarck and Solomon Islands (Bellwood 1999:284). Philippine Negrito populations have possibly arrived in two genetically different groups: a western group which spread directly from Sundaland via Borneo and Palawan, and an eastern group which spread from Wallacea via Mindanao to North-eastern Luzon (Omoto 1985:129, 1999:292; Headland 1986:165).

Prehistoric Philippine Negrito populations probably occupied coastal areas and broad river valleys (Reid 2007:10). As explained in the introductory chapter, given their continuous history of foraging, they are considered to be 'primary hunter-gatherers'. This is not to say that they did not practice any agriculture. Extensive swidden cultivation was probably part of the livelihood packages of at least part of these groups during certain periods (Headland 1986:165, 1987a:477; Headland and Reid 1989:45). Moreover, some groups fully shifted to agriculture at the expense of foraging activities. The Zambales Aeta in western Luzon most likely made this switch to swiddening prior to Spanish colonization, but the exact moment and the circumstances under which this happened remain unknown (Brosius 1990:19-23). In the rain forests of North-eastern Luzon, the home of the contemporary Agta, the hunting-gathering adaptation has been best maintained (Bellwood 1985:130, 1999:287).

This persistence of a foraging mode of production is not the product of the Agta's isolation. Contrary to the 'myth of isolated independent hunter-gatherers'

(Headland and Reid 1991), which has dominated academic and public views of foraging societies until the 1990s, the proto-Agta have since long been in contact with outsiders. They have most likely been involved in forest product trade with Chinese merchants throughout the past millennium, while social and economic relations with farmers have existed for at least 3,500 years (Headland and Reid 1989:45-6; Keesing 1962:171, 179). The first of these farmers were Austronesians who moved into North-Luzon from Taiwan via the Batanes between 2,500-2,000 BC (Bellwood 2005:135). Archaeological excavations at the coastal site of Dimolit and the inland site of Andarayan¹⁰ show that by 2,000 BC they were well-established in the Cagayan Valley. Moreover, symbiotic relations with Negrito groups had developed by 1,400 BC at the latest (Bellwood 1985:133, 137; Headland and Reid 1989:45-6; J. Peterson 1978a:338).

This contact between Negritos and Austronesians must have been very intense, for in the process all original pre-Austronesian Negrito languages were abandoned for Austronesian ones (Headland 1986:174-8; Reid 1987). Judging from the disparate relations of modern Negrito and non-Negrito languages, Reid (2007:12) hypothesizes that this language-switch has followed considerably different routes for different Negrito groups. The end product has been similar everywhere in that hardly any remnants of pre-Austronesian Negrito languages can be traced in modern Negrito languages. The only exceptions concern culture-specific words relating to the Negrito environment and words that became linguistic markers of a separate Negrito identity (Reid 2007:23).

As I explained in the introductory chapter, one of the main drivers of the intense prehistoric contact between Negritos and Austronesians is thought to have been the Negritos' need for cereals which they obtained from farmers in exchange for foraged food (Headland 1987a:477). This need arose as the Negrito populations were pushed off their original living areas: coasts, monsoon forests and wooded savannas. As these favourable foraging grounds were increasingly occupied by the Austronesian newcomers, the Negrito foragers became dependent on less productive ecosystems (Keesing 1962:334). These mainly consisted of higher lying rain forests, which probably lacked sufficient sources of carbohydrates to sustain human populations without any form of cultivation. Although the rain forests of North-Luzon contain a diversity of wild yams, which are indeed exploited by the contemporary Agta, these are hard to dig up and they are not abundant. This observation has led to the hypothesis that Negrito foragers were only able to survive in these rain forests by establishing symbiotic trade relations with farmers (Headland 1987a:466, 485). Clues as to the form these relations initially took are lacking. We do not know how frequent, symmetric and harmonious interactions were. Nor do we know to what extent inter-marriage took place or whether assimilation or elimination of proto-Agta by Austronesians occurred.

¹⁰ Dimolit is part of Palanan and Andarayan is situated in San Mariano, both within the study area.

The colonial period

Forager-farmer relations since Spanish colonization are more easily reconstructed. As is clear from the following quotes presented in Zaide (1990), they can be characterized as ambivalent. On the one hand, Negritos were feared and respected for their speed and accuracy in the use of bow and arrow. Also, they were suppliers of valuable forest products. On the other hand, their small numbers and lack of political organization made them easy prey for better organized groups. This often resulted in their capture as slaves, both for domestic service and for sale to China and Borneo (W. Scott 1994:250-3).

By an anonymous author (1618) in Zaide (1990, IV:94, 97-8): ‘Next after Pampanga comes the district comprising all of Sambales and Pangasinan. [...] Its natives are chiefly those called Negrillos. They are mountain Indians and are either very tawny in color, or black. They are so restless, so warlike, and so averse to trade and communication with other people, that up to this time it has not been possible to subdue them effectively. Although on different occasions they have been severely chastised, there is still no security from them. They are in the habit of making sudden assaults upon their neighbours, continually, and cutting off many heads. In this consists the whole happiness of these barbarians. These Negrillos belong to the same race of people as those who live farthest in the interior and in the most rugged parts of these islands. It is a very well established and common belief that they are the real aborigines; and that the rest of the Indians are immigrants who conquered them, and compelled them to leave the shores and plains, and to retire to the most isolated and rugged parts of the islands, where they are now. They are still so brutal and so averse to civilization that they scarcely deserve more than the name of men; for they have cut off heads of their own fathers and brothers as a past time, for no other reason than their cruelty and brutality. Very few of them have fixed settlements, nor do they plant crops; but they live upon camotes (a kind of potato), other herbs and roots, and the game which they hunt. They hardly ever come to the plains or coast except to make assaults and to cut off heads. The one who has cut off the greatest number of these is the most feared and respected among them. The skulls they keep in their huts as trophies, or to serve as jugs and cups in their drinking bouts.’

By Father Francisco Colin (1663) in Zaide (1990, V:3-5): ‘All those whom the first Spaniards found in these islands with the command and lordship over the land are reduced to the first class, the civilized peoples. Another kind, totally opposed to the above, are the Negrillos, who live in the mountains and thick forests which abound in these islands. The latter are a barbarous race who live on fruits and roots of the forests. They go naked, covering only the privies with some articles called *bahague*, made from the bark of trees. They wear no other ornaments than armlets and anklets and bracelets, curiously wrought after their manner from small rattans of various colors and garlands of branches and flowers on their heads and the fleshy parts of the arm; and at the most some cock or sparrow-hawk feather for a plume. They have no laws or letters, or other government or community than that of kinsfolk, all of those of one line of family obeying their leader. In regard to religion and divine worship they have but little of none. The Spaniards call them Negrillos because many of them are as much negroes, as are the Ethiopians themselves, both in their black color and in their

kinky hair. There are still a number of those people in the interior of the mountains. In one of the large islands there are so many of them, that it is for that reason called the island of Negros.¹¹ Those blacks were apparently the first inhabitants of these islands, and they have been deprived of them by the civilized nations who came later by way of Sumatra, the Javas, Borneo, Macasar, and other islands lying toward the west [...].’

The available information from the Cagayan Valley suggests that contacts between Ibanag and Negrito groups ranged from symbiotic to hostile. When the Spanish moved up the Cagayan River in the late sixteenth century, resident Ibanag farmers and traders became their main entry point for governmental and missionary affairs. In the latter half of the eighteenth century, these populations rapidly expanded in north-south direction and the Ibanag language replaced most other original languages (Keesing 1962:181), but not the Negrito languages. Some Ibanag traders were called patrons or partners (*pagujjinan*) of Negritos, from whom they obtained forest products. At the same time, an old Ibanag belief regarding the black-naped oriole (*dalaw*) reveals hostility between the two groups. It was said that only braves could take omens from this bird, because just as the oriole defeats the crows, so did the braves defeat the Negritos and drove them off the land (W. Scott 1994:264).

Contact of a different kind existed with several Ibanag, Yogad and Gaddang groups who initially escaped Spanish colonization and Christianization. They took refuge in the Sierra Madre foothills in which the Agta were settling at the time. The most notable of these run-away groups are now known as Kalinga (‘enemy’) or Irraya (‘upriver’). They retreated to the upper river valleys east of Cabagan, Tumauni and Ilagan where they lived from horticulture. They maintained close economic and social relations with resident Agta groups and inter-marriage probably took place frequently (Keesing 239, 259-61; Semper 1861; W. Scott 1979; van der Ploeg and van Weerd 2005; Knibbe and Angnged 2006; de Jong 2003).

On the eastern side of the Sierra Madre, in the Palanan Valley, the Agta had similar relations with another relatively isolated farming group. These were the Paranan, the northernmost Tagalog population (Keesing 1962:239). The institutionalized exchange relations between Agta and Paranan, called the *ibay* system by J. Peterson (1978b), still persist today (see Angnged 2008). Relations between Agta and non-Agta along the coast were not always good however. Spanish sources describing the situation further south in Casiguran suggest that hostility regularly arose, allegedly keeping farmers living in fear of Negrito aggressors (Headland 1986:194).

Hostility was not only directed to other ethnic populations, but to other Negrito groups as well. Indeed, the frequent occurrence of inter-group raids (*ngayaw*)¹² resulted in a deep mistrust between Negrito groups (Rai 1990:66-7; M.

¹¹ The island of Negros (called Buglas before Spanish arrival) was so called not because it was predominantly populated by Negritos, but because the Spanish encountered more of them there than on the other islands (W. Scott 1994:253).

¹² The term *ngayaw* (sometimes spelled *ngayao*), is the active verb of the proto-Austronesian base *kayaw*, which means ‘to go headhunting’, ‘to raid’, ‘to capture’, ‘to engage in piracy’. It is used throughout the Philippines, in Taiwan, on Borneo and on Sulawesi (Robert Blust, email conversation November 26 2008; Blust 1995:490; see also W. Scott 1994:267-8, 2001:44; Staniukovich 2000:404).

Griffin 2000:95, 97). As I will show further on in this chapter, this history of raiding still leaves an imprint on the Agta population of the Northern Sierra Madre. With the aim of countering such ‘barbaric’ behaviour, and more generally to subdue Negrito populations, Christianization efforts took place on both sides of the Sierra Madre mountain range.

Along the coast, Palanan was founded as a Franciscan missionary station around 1609 (Headland 1986:199), while the San Mariano-Ilagan area in the western foothills was dominated by Dominican missionaries (Keesing 1962:262). Although most farming populations, including the various run-away groups, were successfully converted this was not the case for the Agta. Interestingly, Christian farmers sometimes opposed the conversion of their Negrito trade partners. Foreseeing that once converted, their suppliers of forest products would be forced to settle in the lowlands where they would need to pay tribute to and work for the Spanish, they feared to lose their merchandise (Keesing 1962:254; Brosius 1990:22). Thus, for these and other reasons Christianization of the Agta failed and the Spanish administration consequently continued to refer to them as ‘infidels’ (Keesing 1962:181, 262, 334; Headland 1986:194).

Recent developments

Towards the end of Spanish rule a major social development started which still continues today. This concerns the increasing dominance of Ilocano populations in the central Cagayan Valley. From 1850 to 1897, Ilocano migrants received financial and other privileges if they migrated to Cagayan and Isabela provinces to grow tobacco. These people mainly settled at some distance from the Ibanag trading centres, in the Sierra Madre’s sparsely populated western foothills. Since then, the Ilocano population has continuously increased, both as a result of further immigration and natural growth. By 1948, it already slightly outnumbered the Ibanag population in northern Isabela (Keesing 1962:181, 238, 265).

The early Ilocano migrants were in close contact with the Kalinga, and to a lesser extent with the remoter Agta. The former largely assimilated into Ilocano communities, and consequently they are by now hardly distinguishable as a separate ethnic group (Knibbe and Angnged 2006). Contact between the Agta and Ilocano immigrants mainly took the form of exchange relations. Agta informants from San Mariano say that their contacts with Ilocano migrants were mostly limited to those farmers who lived closest to the forest fringe. Moreover, as increasingly large Ilocano communities settled in the foothills the Agta slowly moved in uphill direction.

This process accelerated from the 1950s onwards, when the immigration trend that had started a century earlier took a different form on both sides of the Sierra Madre. This was mainly the result of corporate logging concessions that were given out throughout the mountain range. With the exception of the most impenetrable and commercially uninteresting habitats, the entire forest was exploited by timber companies for four consecutive decades. In the Northern Sierra Madre, the height of the logging boom was in 1982, when a total of 44 corporate

timber licensees were active. They covered concession areas ranging in size from 30,000 to 220,000 ha each, with a cumulative annual allowable cut of 2.4 million m³ of timber. Around 25,000 ha of old-growth forest were annually converted into residual stands of varying quality (van den Top 2003:65, 197-8).

The logging boom attracted large numbers of new immigrants of mainly Ilocano, Tagalog and Visayan origin. The roads that were constructed by the logging corporations opened the way for agricultural expansion in areas that were hitherto unattractive. Moreover, conversion of forest into agricultural land became much easier after all large trees had been mechanically cut. In Isabela, this process was most overwhelming on the western side of the mountain range. There, the forest was in many places clear-cut and immigration was greatest and most permanent. Moreover, logging continued illegally in the western watersheds after the pull-out of the timber companies following local logging moratoria in 1992. In contrast, along the coast logging was generally selective and given the remoteness of the area only part of the logging work force permanently settled there after corporate logging ended (van den Top 2003; Kummer 1991; Jongman 1997).

The consequences of logging for forest cover and forest composition in the Northern Sierra Madre have been severe. Between 1950 and 1990, 5.3% of the 750,000 ha of Sierra Madre forest located in the provinces of Isabela and Cagayan were converted to other forms of land use. Moreover, crown cover analysis based on aerial photographs shows that the total area that had 80%-100% forest cover in 1950 was reduced from 340,000 ha to just over 100,000 ha in 1990. Most of the remaining old-growth forests are located in inaccessible areas at high elevations with shallow soils and steep slopes. Also, biologically rich evergreen lowland rain forests now comprise a smaller portion of the old-growth area than they did in the pre-war period. Finally, the remaining old-growth forests are more disturbed than they were during the pre-war period as a consequence of increased human activity (van den Top 2003:49, 54-6).

The social, economic and environmental impacts of logging and logging-related migration are felt by Agta populations throughout the Sierra Madre. With local variations, pressure on hunting and fishing grounds has increased. This is not only because the forest has become smaller as a consequence of logging, but also because immigrant populations exploit wildlife too. In the most heavily logged areas, notably on the western side of the mountain range, the Agta have moved further uphill and upriver to stay ahead of farming populations and to keep up with the shifting forest fringe. In addition to logging and immigration, mining has locally had a great impact. Such has been the case in Dinapigue where it forced the Agta to move from the river valley to higher lying areas (Headland 1986:252) and in coastal Divilacan, where Agta say mining company employees have completely extinguished the deer population on which they used to hunt.

Lastly, armed conflict plays an important role in the Northern Sierra Madre's most recent history. The impact of WWII was mostly felt from mid-1945 to mid-1946. This period followed on the American defeat of the Japanese at Dalton Pass, which divides the Cagayan Valley from South-Central Luzon, in June 1945. After a five-day fight thousands of surviving Japanese fled north into the Cagayan Valley and the Northern Sierra Madre. They attempted to reach the Pacific coast around Palanan, where they hoped to be rescued by Japanese ships. Starving and

disorganized Japanese thus roamed Agta territory during this period, until they were eventually killed or captured by American and Filipino troops in mid-1946. Incidental encounters between Agta and Japanese around Palanan and Casiguran are known to have taken place, probably resulting in a limited number of deaths (Early and Headland 1998:19-20; Headland 1986:242-250).

Domestic conflict has had a much greater and lengthier impact. Over the past 35 years, the Northern Sierra Madre has been among the main battle grounds of the Philippine military and the armed wing of the communist party, the New People's Army (NPA). While the conflict still continues today, it was at its height between the 1970s and 1990s. The number of Agta that got killed during this period is unknown, but it may be considerable. Also, many either became refugees in village centres or were forcibly resettled on government reserves. Moreover, both the communist insurgents and the military recruited Agta as guides, combatants and food-suppliers (Griffin and Estioko-Griffin 1985; Headland 1986:285-8).

The Agta from Cagayan often sided with the military, while in Isabela they were more often enlisted by the insurgents. This was rarely for ideological reasons: most former Agta recruits cannot reproduce what the NPA's philosophy entails. Agta conscripts were both men and women, mostly without children. Some joined the insurgents because they were forced to; others hoped that joining would at least provide food and education. The stress of being constantly on the run, combined with the risk of getting killed or injured, led most Agta recruits to eventually flee or request for dismissal. Those expecting a child were usually allowed to leave, while others carefully planned their escape. At the same time, Chapter VI will show that Agta conscripts occasionally benefited from literacy programs and medical services that the NPA provided to its combatants.

As the conflict still goes on Agta continue to be in the crossfire between the NPA and the military. Moreover, suspecting particular Agta groups or individuals to be NPA loyalists, the military regularly raids Agta camps, especially in the interior of Ilagan and Dinapigue. Agta from these areas say that during such invasions, army groups abuse individual Agta, destroy their dwellings, kill their chickens, and steal food and clothes. These confrontations lead to considerable (temporary) displacement as Agta groups opt to leave their settlements after or prior to army operations.

DEMOGRAPHY

It is impossible to know how Philippine Negrito populations in general, and (proto) Agta populations in particular have fluctuated in the course of the historical period described above. Yet, the general assumption is that their numbers have significantly decreased over the past four centuries. This seems plausible considering that, unlike today, most Philippine islands had significant Negrito populations by the time of Spanish arrival (W. Scott 1994:252). T. Headland and J. Headland (1997:79) attribute this population decline to high mortality rates resulting from encroachment by outsiders, deforestation, depletion of game and plant resources, alcoholism, new diseases and homicide. Early and Headland (1998:4) estimate that as a consequence of these influences, Negrito populations decreased

from about 10% of the Philippine population in 1600 to 0.05% of the national population in 1994. This implies that they went from a maximum of about 100,000 persons in 1600 to around 31,000 persons in the late twentieth century, which would be a 69% decline in 400 years.

Such estimates are however hampered by the inaccuracy of both colonial and modern Negrito population counts. Spanish censuses only covered the Christian population while the so-called 'infidel' populations were not specified in number. Because Negritos were rarely converted they were thus largely excluded from the Spanish figures. American censuses did mention Negrito populations, either as a separate group or under categories such as 'pagans', 'wild people', 'persons not belonging to any religious group' and 'others' (Keesing 1962:181, 262, 334; NSO 2005a:191-3). However, given the remoteness and uncontrolled status of Negrito living areas it is unlikely that the number of people listed under these categories reflected reality.

This situation still largely holds today. Members of Negrito populations are often not registered in village centres and census enumerators rarely visit remote Negrito settlements (see also Rai 1990:127; Early and Headland 1998:47; van den Top 2003:41). As a result, official government figures on Negrito populations are rough estimates at best. They are therefore highly incongruent with scientific records compiled by ethnographers and linguists. Government figures on the national Negrito and Agta populations exceed scientific figures by 18 and 12 times respectively. At the moment, the National Commission on Indigenous Peoples (NCIP) is the only government agency providing countrywide Negrito population figures. Of the nearly 12,000,000 indigenous individuals reported, almost 0.6 million are listed as belonging to various Negrito groups. Of these, over 117,000 are claimed to be Agta (NCIP 2008). In sharp contrast, a compilation of ethno-linguistic surveys sets the total Negrito population at just under 31,000 individuals, while the Agta population numbers about 10,000 (Headland 2003:1, 9).

This mismatch of records can be partly explained by the different ethnic terms and definitions that enumerating institutions apply.¹³ The discrepancy is however mainly due to the inaccuracy of government statistics. To begin with, the NCIP figures contain many computation errors and double counts. More importantly, not only are they based on estimates rather than actual population counts, these estimates are highly biased by funding interests of the field offices that provide the population data. As these offices receive their budget depending on the size of the indigenous population they serve, over reporting is common.¹⁴

The scientific record is much more reliable, mainly because it is based on actual population counts instead of estimates. It shows that linguistically, the overall Negrito population consists of 32 groups, which all speak their own Austronesian language (Headland 2003:1, 9). The overwhelming majority of Negritos (91%) reside on Luzon (table 2.1 and map 2.1). Most of these refer to themselves in opposition to non-Negrito groups by terms such as *Agta*, *Atta*, *Arta*, *Alta* and *Aeta*

¹³ For instance, government institutions tend to favour 'Dumagat' over 'Agta', while it is the other way around for anthropologists and linguists. Also, definitions of who does and who does not belong to a certain ethnic group are likely more encompassing among government than among academe.

¹⁴ NCIP Central Office, personal communication, March 8 2007.

(Reid 2007:7).¹⁵ The largest population, the Aeta, live in the Zambales Mountains on the island's western side. The Agta form the second largest population, stretching out along the eastern rim of Luzon over a distance of around 700 km (table 2.2).¹⁶ The Agta together speak 16 different languages, each of which is mutually intelligible with one or two of its closest neighbouring Agta languages. Smaller Negrito populations are found on the islands of Mindanao, Panay, Negros and Palawan (table 2.1) (Headland 2003:1, 9; Early and Headland 1998:4).

Table 2.1 Distribution of Negrito populations (based on Headland 2003:9)

Location	Negrito population	Population	Population as % of total Negrito population
Luzon	Agta	10,092	32.8
	Aeta	15,691	51.1
	Arta	11	0.04
	Alta	650	2.1
	Atta	1,500	4.9
Palawan	Batak	386	1.3
Mindanao	Mamanua ¹	1,000	3.3
Panay	Ati	930	3.0
Negros	Ata	475	1.5
Total		30,735²	100

¹ Seitz, Talaroc and Oregines (2006:9) show, however, that the Mamanua may well number 10,000 individuals.

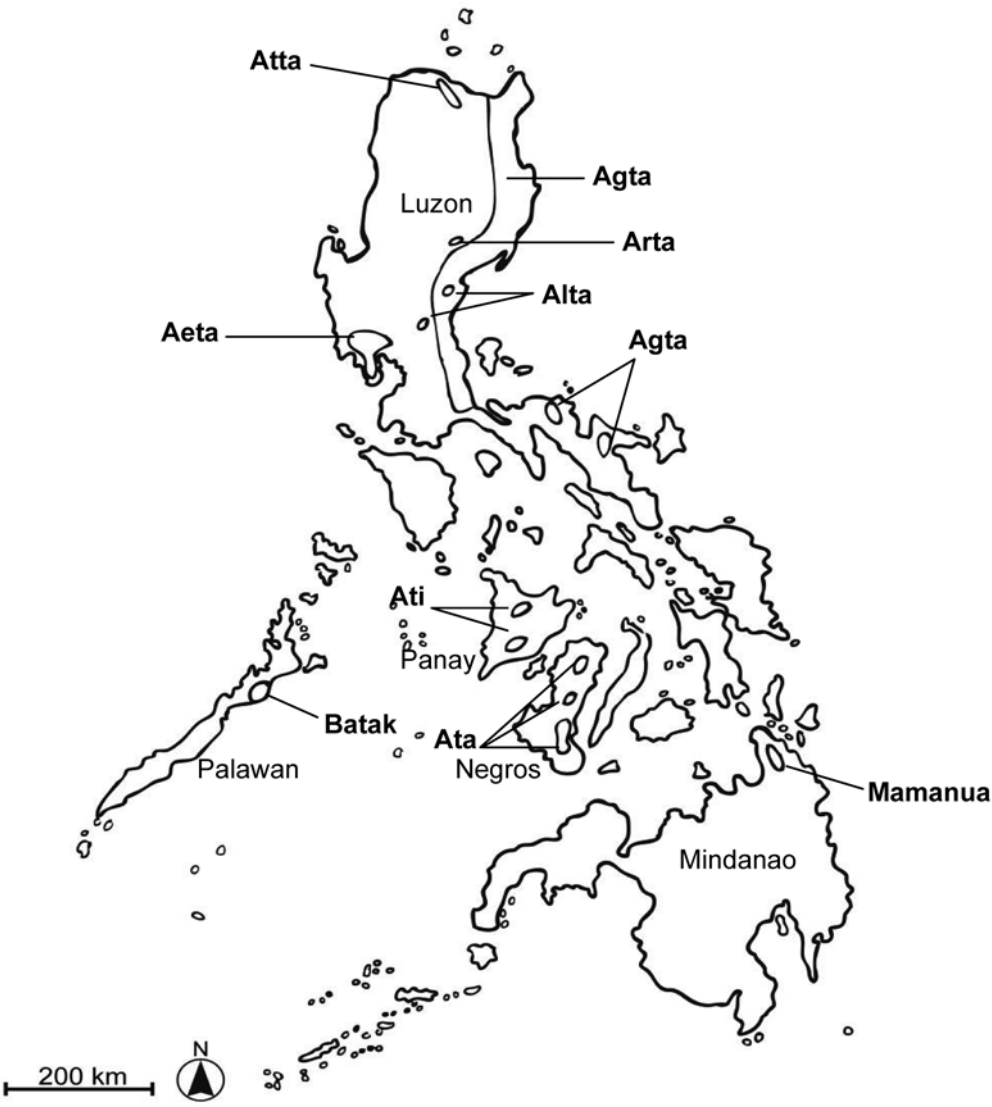
² Although a figure of 32,725 appears in Headland (2003), the figure of 30,735 is correct (Thomas Headland, email communication April 4 2007).

Table 2.2 Distribution and size of Agta populations

Location	Year	Population	Source
Isabela	1980	1,644	Rai (1982:36, 227, 1990:176)
Casiguran, Aurora	2003	609	Headland (2003:9)
Camarines Sur	2000	2,700	Grimes (2000) in Headland (2003:9)
Camarines Norte	2000	200	Grimes (2000) in Headland (2003:9)
Quezon	2000	3,050	Grimes (2000); MacLeod SIL files in Headland (2003:9)
Quirino	2003	300	Headland (2003:9)
Eastern Cagayan	1985	1,200	Nickell (1985) in Headland (2003:9)
Central Cagayan	2000	800	Grimes (2000) in Headland (2003:9)
Total		10,503	

¹⁵ All of these terms reflect variants of what linguists call Proto-Extra-Formosan *qaRta(q), but there is linguistic disagreement as to their origin and meaning (Reid 2007:7, 1994:448; Blust 1987:80, 1995:491). Depending on the chosen reconstruction, meanings such as 'man, human being', 'Negrito, black person', 'supernatural black creature', 'outsider, alien', and even 'slave' have been suggested.

¹⁶ Table 2.2 presents a higher total Agta population than Headland's 2003 figure (table 2.1) because the data used for Isabela are different. Headland only includes Rai's data for Palanan, Divilacan and San Mariano, while I have included the total census for eight municipalities as reported by Rai (1982:36, 227).



Map 2.1 Negrito populations in the Philippines (based on Headland 2003; Gordon 2005; Seitz 2004).

Distribution of the study population

This study focuses on the Agta population living in and immediately around the Northern Sierra Madre Natural Park, which covers an area of 3600 km² within Isabela province. As table 2.2 shows, the latest published census among this population dates from 1980.¹⁷ To determine its current size I therefore undertook a census in this area from 2002-2005. In defining who is Agta and who is not, I followed M. Griffin's approach (1996:39) in which non-Agta spouses of Agta, either male or female, are not recognized as 'Agta' but their children are.

My census enumerates a total of 1,777 Agta. Together, they form 387 households with an average size of 4.6 persons. The household is defined as the group of people sharing a hearth, which mostly implies that they also share a roof. It usually consists of the nuclear family and possibly a widowed parent, siblings, orphaned cousins, nieces or nephews. Depending mainly on forest and marine products, Agta mostly settle in remote river- and beach-site settlements. Each of these carries an Agta name, which usually refers to a certain resource that is or was locally abundant. Almost all such names start with the locative preposition *di*, which is unique to the Negrito languages of North-east Luzon and the language spoken around Palanan, Paranan (Reid 2007:24).

During the study period over 80 Agta settlements, located in 30 *barangays* and eight municipalities,¹⁸ were identified (map 2.2¹⁹ and table 2.3). As households regularly move between several sites, the number of people inhabiting a settlement varies much.²⁰ In general, between 15 and 100 people reside in one location at a given moment.

Settlements are mostly situated outside non-Agta hamlets and village centres.²¹ In the western mountain interior Agta live farthest away from village centres, sometimes up to a day's hike. Rai (1982:37) has found that in these western watersheds Agta settle at an average distance of 13 km from non-Agta. In the eastern interior and along the coast, the distance between Agta and non-Agta settlements can be bridged within several hours at the most. Here, Agta and non-Agta settlements are averagely removed 3.8 km from each other (Rai 1982:37). As Agta settlements are usually inaccessible by road,²² travel to other Agta settlements and non-Agta village centres mostly takes place on foot or in some coastal areas by motorized outrigger boat.

¹⁷ A later unpublished census in five municipalities in Isabela was conducted in 1998 (Magaña 2000).

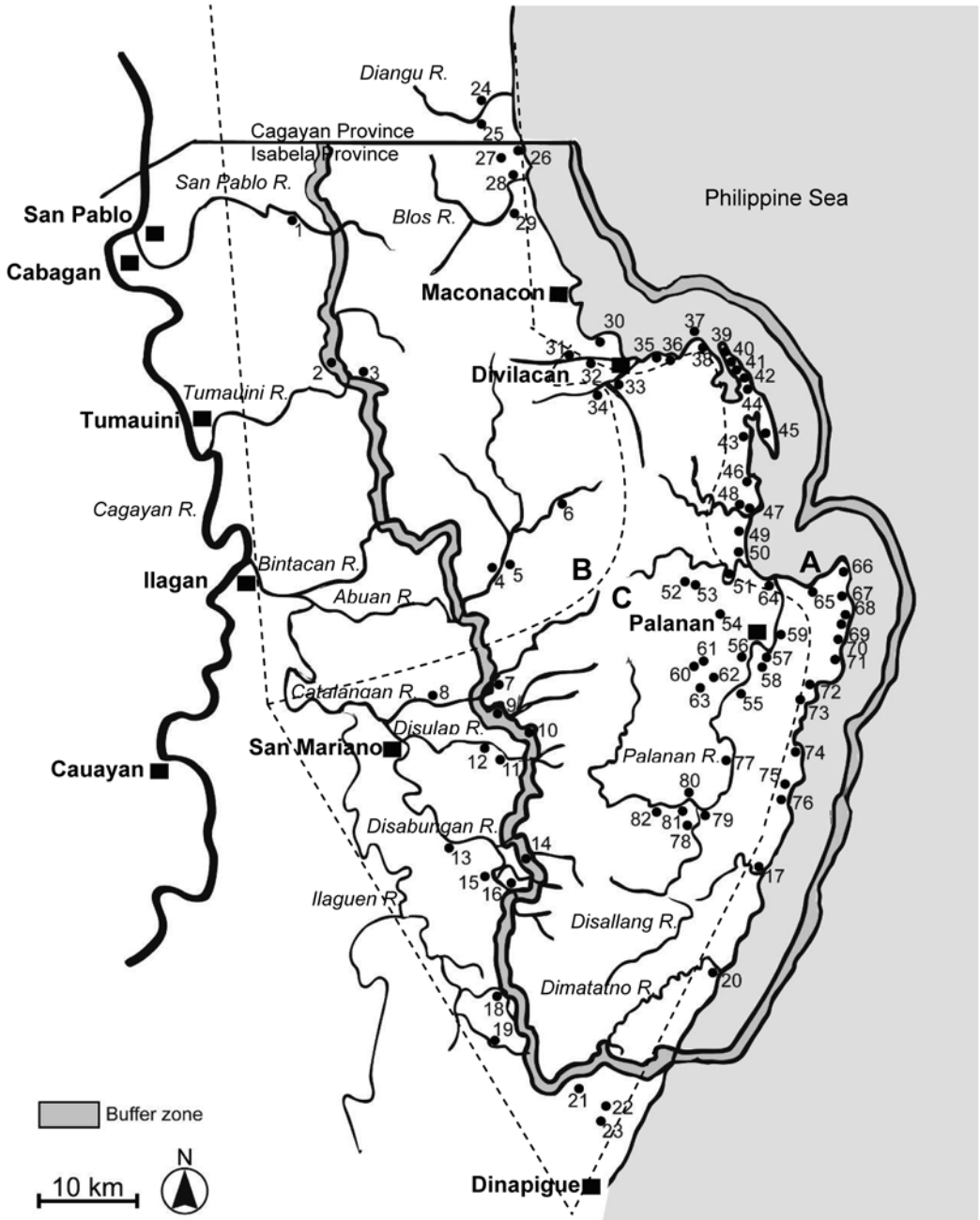
¹⁸ Although situated within the study area, no Agta reside within the municipal boundaries of Cagayan.

¹⁹ The significance of the three kinship networks (A, B and C) will be explained further on in this chapter.

²⁰ Therefore table 2.3 does not show a population figure for some of the settlements: these were inhabited at some point during the study, but were (temporarily) abandoned during the most recent visit.

²¹ An exception is the village of Sapinit (no. 34). Here, Agta originating from Abuan River (Ilagan), across the mountain range, were resettled for security reasons in the 1970s. They move between Sapinit and the Abuan watershed.

²² Exceptions are Batag (no. 13), Ango (no. 22), Sapinit (no. 34) and Sabangan (no. 64), which are accessible through dirt road. Also, several road-connected village centres are inhabited by a small number of Agta households working as tenants on nearby farms: Dibuluan (no. 8), Reina Mercedes (no. 28), Dicaroyan (no. 31), Dialomanay (no. 54) and Dikabayo (no. 56).



Map 2.2 Distribution of Agta settlements in and around the NSMNP 2002-2005 (corresponding settlement names in table 2.3) and situation of the coastal (A), northern river-dwelling (B) and southern river-dwelling (C) kinship networks (see explanation below).

Table 2.3 Agta population (and number of households) of the NSMNP per municipality.

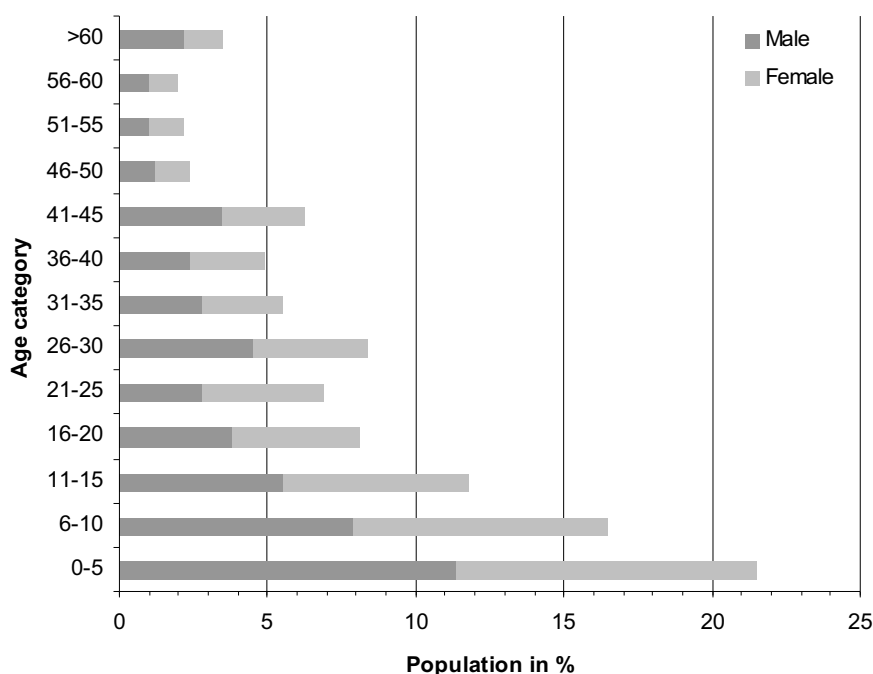
San Pablo	24 (5)	39.Honeymoon Island, Dibigo	-
1.Apogan, San Vicente	24 (5)	40.Dimasalansan, Dibigo	43 (11)
Tumaui	19 (4)	41.Dikabiritbitan, Dibigo	23 (6)
2.Makihawe, Antagan II	19 (4)	42.Makahoyag, Dibigo	-
3.Kapanagen, Antagan II	-	43.Dialinawan Dakkel, Dibigo	33 (8)
Ilagan	38 (8)	44.Makengaden, Dibigo	-
4.Malabinao, Kabisiera 10	10 (2)	45.Pier Tagulan, Bicobian	-
5.Disiuppi, Kabisiera 10	19 (3)	46.Dicaudang-udangan, Bicobian	47 (9)
6.Kanagman, Kabisiera 10	9 (3)	47.Dicambonoy, Bicobian	-
San Mariano	222 (56)	48.Dicamaran, Bicobian	-
7.Divisoria, Dibuluan	16 (4)	49.Diaguan, Dimapnat	51 (9)
8.Dibuluan Proper, Dibuluan	12 (4)	50.Disokad, Dimapnat	28 (7)
9.Dunoy, Dibuluan	19 (4)	51.Dimapnat, Dimapnat	65 (13)
10.Camalaculan, Dibuluan	13 (2)	Palanan	708 (139)
11.Kamerasitan, San Jose	34 (8)	52.Pitak, Dialomanay	-
12.Diwigden, San Jose	32 (7)	53.Nicalingan/Balete, Dialomanay	53 (10)
13.Batag, Del Pilar	-	54.Dialomanay Proper, Dialomanay	2 (1)
14.Dimabigao, Casala	-	55.Ditambale, Sta. Jacinta	-
15.Digud, Del Pilar	39 (13)	56.Dikabayo, Centro West	10 (2)
16.Dipili, Del Pilar	19 (4)	57.Pagsalangatan, Marikit	33 (6)
17.Divinisa, Casala	17 (5)	58.Dikente, Marikit	41 (7)
18.Diwigao, Buyasan	12 (2)	59.Dibungco, Marikit	47 (10)
19.Dialwas, Buyasan	9 (3)	60.Sapinit, Bisag	3 (1)
Dinapigue	71 (20)	61.Babbibinan, Bisag	-
20.Dimatno, Dimaluadi	12 (5)	62.Dinipan, Bisag	25 (5)
21.Dicadican, Ayod	-	63.Dikalao, Bisag	3 (1)
22.Ango, Ayod	40 (10)	64.Sabangan, Culasi	27 (6)
23.Ditabigui, Ayod	19 (5)	65.Dimatog, San Isidro	53 (10)
Maconacon	149 (38)	66.Diagu, San Isidro	72 (16)
24.Dibolu, Sta. Marina	37 (9)	67.Dipaguiden, San Isidro	6 (1)
25.Diangu, Sta. Marina	41 (10)	68.Kabantiguian, San Isidro	13 (3)
26.Sabangan, Reina Mercedes	11 (4)	69.Diaromitan, San Isidro	-
27.Diaduan, R. Mercedes	12 (3)	70.Kalanatian, San Isidro	25 (4)
28.R. Mercedes, R. Mercedes	11 (2)	71.Disumangit, Didadungan	22 (4)
29.Samiento, Canadam	37 (10)	72. Cacawayanan, Didadungan	15 (3)
Divilacan	546 (117)	73.Banagu, Didadungan	10 (2)
30.Dibol, Dicitian	34 (5)	74.Kanaipang, Didadungan	107 (20)
31.Dicaroyan Proper	15 (3)	75.Diguyo, Didadungan	-
32.Dicaroyan, Dicaroyan	37 (12)	76.Dikapisan, Didadungan	-
33.San Juan/Anao, Ditarum	31 ¹ (8)	77.Diambarong, Didian	35 (5)
34.Sapinit Proper, Sapinit	80 (11)	78.Magtaracay/Disibulig, Didian	34 (7)
35.Dibubun, Dilakit	38 (9)	79.Dipagsanghan, Didian	24 (6)
36.Dimabungtot, Dilakit	8 (2)	80.Diamulong, Didian	38 (6)
37.Dipudo Island, Dipudo	13 (4)	81.Lupigi, Didian	-
38.Dipudo Proper, Dipudo	-	82.Lucban, Didian	10 (3)

¹ This figure is based on data from the municipality of Divilacan (LGU Divilacan 2007:45).

Age-sex structure

The Northern Sierra Madre Natural Park is inhabited by an almost equal number of Agta men and women (figure 2.1). Most of the population is made up of young people.²³ If we lump all age groups up to 15 years together, we see that half of the population consists of children. Of these, children under five years old form the largest share: they form over one fifth of the total population. As will shortly become clear from the high mortality rates in this age-group, they are also the most vulnerable part of the population. This explains for the fact that six to ten year olds are significantly fewer in number than children under five.

Figure 2.1 Age-sex structure of the study population in 2005 (n = 1,725)



From around age 16 adolescents start to prepare for married life. Demographic studies show that Agta girls' first menstruation averagely occurs at the age of seventeen. This late menarche is most likely the result of poor health and nutritional conditions. From menarche, it usually takes a few more years before Agta girls marry. The average age of marriage is 19 for women and nearly 22 for men. Fertility is high. A woman delivers her first child at an average age of 20, and with menopause starting in her early forties she can expect to give birth to seven or eight children (Early and Headland 1998:92-5; Headland 1987b:270; Goodman, Estioko-Griffin and Grove 1985:171, 175). Men and women in their reproductive years

²³ This is based on a sub-sample of 1,725 individuals for which the age could be assessed. This covers 97% of the total recorded study population. Although the names and sex of the remaining 3% are known, they were not met in person and therefore their ages could not be assessed.

make up 40% of the study population, with the larger share of these being 16 to 30 years old. Only one-tenth of the population consists of people of 45 years and older.²⁴

Relative population decline

A comparison of the Agta and non-Agta population shows just how small the former is relative to the latter (table 2.4). The National Statistics Office reports a total population of 21,409 within the study area for the year 2000 (NSO 2006). This figure includes only part of the Agta population (NSO 2000:258-285), and under represents especially Agta numbers in the western municipalities and Palanan. Following my own census, around 8% of the population are Agta.

This imbalance between Agta and non-Agta populations is caused by uneven growth among both populations, especially over the past half century. For reasons to be explained below, the Agta population throughout the Sierra Madre has hardly grown. At the same time, non-Agta populations have increased at accelerated pace as a result of both natural growth and immigration (table 2.5). It was already mentioned that Ilocano immigration into the Sierra Madre foothills started as early as the mid-nineteenth century. This development took new and more intensive forms from the 1950s onwards. The labour opportunities offered by logging companies as well as the need for agricultural land attracted many people to formerly sparsely inhabited areas.

As the new immigrants were again mainly of Ilocano origin, the already ongoing process of 'Ilocanization' (Keesing 1962:181) was reinforced. Ilocano migrants came in such substantial numbers that they now make up the majority of the resident population in four out of the nine municipalities of the Northern Sierra Madre Natural Park.²⁵ There were new ethnic influences as well. Tagalog immigrants came to form significant shares of the populations of Ilagan, Dinapigue, Palanan and Maconacon and more recently, Ifugao and Tingguian migrants have arrived from the Cordillera Mountains. Their numbers are often unspecified in municipal statistics, but they are of great relevance as they settle in the uplands, close to or in Agta living areas.

Along the coast, this large-scale immigration has meant that within several years small towns arose out of almost nothing. Until the 1960s Dinapigue, Divilacan and Maconacon were only hamlets or, at the most, *barangays* of western municipalities. With the arrival of logging labourers their populations suddenly grew large enough for them to gain municipal status.²⁶ Although Palanan had already been founded as a missionary station in the early seventeenth century, its

²⁴ The number of people in the highest age group (>60) is relatively large. Several explanations for this unexpected result are possible. Either the post WWII generation is smaller due to health or other unfavourable circumstances during their childhood. Or the >60 category is overrepresented due to a methodological error. As ages were estimated, some people recorded as older than 60 may belong to a lower age class.

²⁵ In Maconacon Ilocano immigrants make up 76% of the total population, in Dinapigue 73%, in Ilagan 65% and in San Mariano 57% (LGU Maconacon undated:4-5; LGU Dinapigue 2001:21, 46-7; LGU Ilagan 2003:26, 35; LGU San Mariano 2000: no page).

²⁶ This occurred in 1969 through Republic Act 5776.

Table 2.4 Non-Agta and Agta population per municipality and *barangay*¹ (2000-2005)

Municipality and <i>barangay</i>	Reported population (NSO 2000)	Agta population (2002-2005)
San Pablo	19,090	24
San Vicente	1,382	24
Tumauini	50,256	19
Antagan II	1,367	19
Ilagan	119,990	38
Kabisera #10	1,681	38
San Mariano	41,309	222
Buyasan	568	21
Casala	1,001	17
Del Pilar	1,019	58
Dibuluan	1,158	60
San Jose	1,551	66
Dinapigue	3,171	71²
Ayod	198	59
Dimaluadi	171	12
Palanan	15,317	728
Bisag	643	31
Centro West	2,282	10
Culasi	962	27
Dialomanay	548	75
Diddadungan	724	154
Didian	1,112	141
Marikit	892	121
San Isidro	569	169
Divilacan	3,413	526
Bicobian	461	47
Dicaroyan	170	52
Dikatian	247	34
Dilakit	115	46
Dibigo	212	99
Dimapnat	741	124
Dipudo	185	13
Ditarum	286	31
Sapinit	237	80
Maconacon	3,721	149
Flores/Canadam	206	37
Reina Mercedes	457	34
Sta. Marina	264	78
Total <i>barangays</i>	21,409	1,777
Total municipalities	297,803	1,777

¹ Table 2.3 only includes *barangays* inhabited by Agta during the study period.² The census data for the Agta population in Dinapigue excludes *barangay* Dibulo, as it is situated at such a distance from the park boundaries that its inhabitants do not use resources within the Northern Sierra Madre Natural Park. During a visit to Dibulo in May 2005 however, their community numbered 19 households, with an estimated 90 individuals. The NSO (2000) reports a total population of 776 (151 households) for this *barangay*.

Table 2.5 Historical populations of the nine municipalities in the study area 1918-2000¹

Municipality	1918	1948	1960	1975	1990	1995	2000
San Pablo	4,994	5,700	8,349	12,402	16,680	17,122	19,090
Cabagan	13,112	21,651	17,924	24,987	34,983	35,054	41,536
Tumauni	7,147	19,190	16,606	27,669	40,664	45,551	50,256
Ilagan	23,447	-	35,384	-	-	-	119,990
San Mariano	1,486	8,365	15,064	25,157	36,295	37,861	41,309
Dinapigue	-	-	-	932	-	-	3,171
Palanan	2,410	4,045	5,599	8,930	11,431	13,220	15,317
Divilacan	-	-	-	1,207	2,479	2,593	3,413
Maconacon	-	-	-	-	7,259	5,895	3,721

¹ Sources: NSO 2000; LGU San Pablo (2003:II-6); LGU Cabagan (2000:23); LGU Tumauni (2000:53); LGU Ilagan (2003:23); LGU San Mariano (2000: no page); LGU Dinapigue (2001:21, 46-7); LGU Palanan 2000:9); LGU Divilacan (2007:41); LGU Maconacon (undated:IV-2).

Table 2.6 Population projections for the study area 2010-2030 (NSO 2006; NEDA 2006:9)

Municipality	Population 2000	Projected population			Projected increase 2000-2030 (%)
		2010	2020	2030	
San Pablo	19,090	20,826	86,827	26,221	37.4
Cabagan	41,536	42,509	51,589	55,036	32.5
Tumauni	50,256	62,987	23,335	73,607	46.5
Ilagan	119,990	143,006	144,924	155,054	29.2
San Mariano	41,309	45,652	46,642	78,482	90.0
Dinapigue	3,171	10,116	552	527	-83.4
Palanan	15,317	19,259	31,266	31,908	108.3
Divilacan	3,413	3,206	3,929	4,281	25.4
Maconacon	3,721	4,889	-	-	-

population almost tripled between 1948 and 1990. Non-Agta population increases were and still are greatest in the western foothills however. The most striking example of this is San Mariano, where the population more than quadrupled between 1948 and 1990 (LGU San Mariano 2000).

With the exception of Dinapigue, corporate logging ceased everywhere in the research area in the early 1990s. Since then immigration has slowed down, but resident populations in both the coastal and western municipalities still grow rapidly. In most of the research area, non-Agta populations will therefore further multiply in the years to come (table 2.6). Dinapigue is the only municipality with a projected negative growth.²⁷ In 2030 the remaining municipalities are projected to have grown by between 30% and over 100% relative to the year 2000. All this means that Agta populations within the research area will only further decrease relative to non-Agta populations.

It is important, however, not to mistake relative for absolute population decrease. According to P. Griffin and Headland (1994:73) Agta populations are in severe decline. However, this alarming statement contradicts analysis of the only long-term demographic database²⁸ available for any Agta population, namely the San Ildefonso Agta in Aurora province. Between 1950 and 1994, this population grew at an annual rate of 0.62% (Early and Headland 1998:81). This is indeed a low growth rate compared to that of the national population, which over the same period grew at rates varying from 2% to 3% (Early and Headland 1998:32). Nonetheless, the overall pattern does not indicate a decline of the San Ildefonso Agta population.

No exact population growth rates can be given for the Agta of the Northern Sierra Madre Natural Park as long-term demographic data are lacking. However, a comparison of a census by Rai (1982:36, 1990:176) and my own census suggests that the study population as a whole has retained relative stability over the past 25 years (table 2.7). Local population increases and decreases did take place, but it is hard to tell what has caused these. Migration resulting from labour opportunities in the logging industry, non-Agta population pressure and earlier mentioned security issues (see also Early and Headland 1998:131) may provide part of the explanation. In addition, specific health²⁹ and nutritional circumstances, as well as typhoons and landslides may have caused local population fluctuations.

²⁷ This is probably based on the assumption that logging permits which expired in 2005 would not be extended and that this would lead to out-migration. These permits were however renewed in 2006 and in addition a mining company started operations in 2007. Moreover, as the history of neighbouring municipalities shows even the eventual pull-out of such companies does not necessarily imply a population decrease.

²⁸ This database results from Thomas and Janet Headland's work among this group since 1962 (Early and Headland 1998:61).

²⁹ For instance, looking at reported causes of child mortality it seems a measles epidemic has struck in the early 1990s.

Table 2.7 Agta population in Isabela province in 1980 and 2005

Municipality	Rai (1990:176) (census taken 1979/80)	Minter and Ranay (2005a) (census taken 2002-2005)
San Pablo	no data	24
Cabagan	no data	0
Tumauini	11	19
Ilagan	68	38
San Mariano	332	222
Dinapigue	45	71
Palanan	669	728
Divilacan	230	526
Maconacon	259	149
Jones	30	No data
Total	1,644	1,777

The observation that the Agta population of the Northern Sierra Madre Natural Park as a whole has not shrunk in recent decades should not distract attention from the important fact that it has barely grown either. Early and Headland (1998:101, 122) have demonstrated that in the case of the San Ildefonso Agta, these slow growth rates can be attributed to two main factors. The most important of these is high mortality, especially among children. A second reason is the increased out-marriage of Agta women to non-Agta men (T. Headland and J. Headland 1999). How important are these two factors in explaining the slow growth of the Agta population of the Northern Sierra Madre Natural Park?

Mortality

Agta life is short. Life expectancy at birth is only 25 years (Early and Headland 1998:101). Most people die from diseases like tuberculosis, pneumonia, gastro-intestinal infections and malaria. Women regularly die from child birth complications. The level of maternal deaths among the San Ildefonso Agta (352 per 10,000 live births) is the highest found in the literature. Homicide and alcohol related deaths are further important contributors to high mortality among that population (Early and Headland 1998:104-6, 115; M. Griffin 2000:102-3). This is less manifest among the Agta of the Northern Sierra Madre Natural Park. While several cases of alcohol poisoning and murder were indeed recorded, no firm conclusions can be drawn regarding their exact impact on mortality levels.

Mortality is evidently highest among children. To gain insight in child mortality levels, the birth histories of 159 households throughout the study area were collected. These reveal that almost one third of all children born alive die before they reach puberty (table 2.8). The risk of dying is greatest for children under five: of every 1,000 Agta children born alive, 283 die before their fifth birthday. Child mortality within the first year amounts to 137‰. Once they have made it through the first five years, Agta children's chances at survival highly increase. They have a risk of dying of 19‰ between their sixth and tenth birthday, while this risk decreases to 14‰ for 11-15 year olds and 8‰ for adolescents aged 16-20.

Table 2.8 Agta child mortality in the Northern Sierra Madre Natural Park

Frequency ‰	Total live births	Deceased children per age group					Total deceased
		<1	1-5	6-10	11-15	16-20	
	833	114	122	16	12	7	271
	1000	137	147	19	14	8	325

Table 2.9 Causes of death mentioned by Agta parents

Cause of death / age category	<1	1-5	6-10	11-15	16-20	Total (%)
Measles	6	21	3	2	0	32 (11.8)
Diarrhoea / vomiting	12	12	3	1	0	28 (10.3)
<i>Subisubi</i>	16	6	0	0	0	22 (8.1)
Fever / cold / flu	8	12	0	1	1	22 (8.1)
Cough / pneumonia / tuberculosis	6	5	1	1	1	14 (5.1)
Malaria	1	4	2	0	1	8 (3.0)
Spirit (black magic)	4	2	1	0	0	7 (2.6)
Accident	1	3	0	1	2	7 (2.6)
<i>Synamad</i> (diphtheria ¹)	2	0	0	0	0	2 (0.7)
Other	1	1	0	3	1	6 (2.2)
Sub-total known causes	57	66	10	9	6	148 (54.6)
Unknown	57	56	6	3	1	123 (45.4)
Total	114	122	16	12	7	271 (100.0)

¹ Agta parents' descriptions of this disease's symptoms suggest it is diphtheria, against which vaccines exist. The child's tongue and lips are said to turn white and swell until breathing and swallowing are no longer possible.

Further analysis of these data is restricted by the fact that death causes are often unknown (see also Early and Headland 1998:102). For only 148 of the 271 deceased Agta children (55%) were parents able to mention the reason their child died. Moreover, parents' perceptions on such causes may not always reflect medical reality. Despite these limitations, I do think the available information provides important clues as to the possible leading causes of Agta child mortality.

Infectious disease

Early and Headland (1998:104) report that, among the San Ildefonso Agta, infectious diseases comprise 50% of the known and an estimated 86% of all causes of death. These include measles, diarrhoea, pneumonia, malaria and tuberculosis. As table 2.9 shows, these are the same death-causes most often mentioned by Agta parents in the current study. They account for at least 38% of all, and over 70% of the known death-causes.

One explanation for the high occurrence of infectious disease is the poor quality of drinking water. Throughout the Northern Sierra Madre Natural Park, Agta households obtain their water directly from rivers, creeks and springs. These are often unsafe sources because in most areas large number of loggers reside upstream of Agta settlements. Since the water is neither filtered nor boiled, many children suffer from acute or chronic gastro-intestinal diseases and parasitic infections. In severe cases of dehydration this leads to many unnecessary deaths.

The risk of contamination through polluted water heightens as mothers increasingly feed their infants on powder, rather than breast milk. The powder is dissolved in water obtained from above mentioned unsafe sources. Moreover, as the bottle and rubber teat are usually not sterilized, they easily become a source of infection. Aside from the direct health risks this poses, powder milk provides inferior nutrition to infants compared to breast milk, especially since often insufficient doses are given. This even further decreases infants' survival chances (see also Early and Headland 1998:117).

Lastly, hygienic conditions within Agta settlements are highly unfavourable. As Polunin (1977:9) notes for tribal peoples in general, in the absence of sanitary facilities, human and other waste is scattered in and around the camp. Although adults relieve themselves away from dwellings, rivers and springs in the shrub land and swiddens surrounding the settlement, children defecate on river banks, beaches and within the camp. Added to this is the waste of dogs and sometimes pigs. While Agta women regularly clean the surroundings of their dwellings and camps are shifted when a location gets grubby, under these conditions contamination of especially children through human and animal excrement cannot be avoided.

The rates and consequences of infection are exacerbated because of the absence of modern health care facilities from Agta settlement areas. As the number of measles victims shows, immunization programs rarely reach the Agta. Out of the 1002 children and adolescents enumerated in my census, 81% had not undergone any form of immunization at the time of the interview. Only 18% were (partly) vaccinated. In most cases this concerned a one-time vaccination against measles, while a child ought to undergo two vaccines in order to be maximally protected against this disease (WHO 2007). Immunization against polio, tuberculosis, typhus

and hepatitis was occasionally reported by parents. For 1% of the children no data on vaccination are available. When a child (or adult) falls ill, medical doctors are rarely consulted. While medical care is usually free in rural areas it is also of poor quality. Once village clinics are reached (usually following long and tough travel) the doctor often turns out to be absent or the necessary medicines are unavailable. This crushes people's motivation to go through the same effort next time.

Thus, people mostly rely on traditional medicine, examples of which will be given later on in this and the next chapter. For now it suffices to say that although Agta healing practices may effectively treat minor ailments, they usually do not succeed in curing more serious illnesses. This problem pertains to other hunter-gatherers as well. Voeks and Sercombe (2000:686-7) suggest that hunter-gatherers generally have relatively modest ethno-medical systems compared to cultivating peoples because, due to their low population densities, they did not suffer from crowd diseases. Now that they are confronted with such diseases, their traditional healing systems are ill-equipped to cure these.

Nutritional disease

Nutritional disease is a second important cause of death. In infants and toddlers this shows from the high occurrence of *subisubi* (known as *beriberi* elsewhere in and outside the Philippines), which is caused by a vitamin B1 (thiamine) deficiency (Early and Headland 1998:104). Among young Agta children in the Northern Sierra Madre Natural Park, it accounts for 8% of all, and 15% of the known deaths. Malnutrition is a serious problem both among Agta children and adults and is especially dangerous in combination with infectious disease (Early and Headland 1998:108). De Souza (2006:607-10, 615) shows that among the Casiguran Agta, 17% of all children suffer from acute under-nutrition, which is indicated by low weight-for-height (thinness). Another 13% of children also suffer from chronic under-nutrition, which is indicated by low height-for-age (shortness). While Agta children tend to maintain a minimum basal weight by growing slow, grown-ups can no longer compensate weight loss through growth retardation. As a result, 34% of Casiguran Agta adults are undernourished, while 10% are considered extremely malnourished by international standards.

Nutrition studies carried out among 16 households in three Agta residential groups in the Northern Sierra Madre Natural Park show that their diet is poor indeed. On 31 out of 92 observation days (34%), these households consumed only two meals per day. Meals were most often skipped at lunch time and sometimes at breakfast. Of the 235 meals that were consumed, more than half (53%) consisted of rice combined with either fresh fish or meat.³⁰ Fish was consumed over seven times more often than meat. However, as many as 23% of the meals consisted only of rice, sometimes combined with a little salt or fermented fish sauce. Another 22% of the meals comprised rice with a vegetable dish. Can-goods, usually sardines, were consumed at less than 2% of all meals.

³⁰ Note that Headland (1986:457, 555) found that the Casiguran Agta ate such dishes at 59% of their meals in 1983, while he suggests that traditionally animal protein would have been present at most of their meals.

Other death causes

A different category of deaths is made up of those perceived to have a spiritual cause. These are most often reported for infants and to a lesser extent for children up to ten years old. Children are thought to be especially vulnerable to the negative influences of various classes of spirits.³¹ In these cases, seeking medical help is considered useless as only a spirit medium is thought capable of providing proper treatment.

Accidents form the only category of death-causes that occur equally often among older and very young children. Four out of the seven reported fatal accidents occurred during typhoons.³² The only reported case of a child's unnatural death concerns a teenage girl from the Catalangan watershed in San Mariano (included in the 'other' category in table 2.9). After the girl's body was found hanging in a tree in March 2003 it was first assumed she had committed suicide. Later, serious allegations were held against a non-Agta villager for raping and murdering the girl. The case was never solved.

Agta child mortality rates compared

Clearly, survival prospects for new-born Agta children in the Northern Sierra Madre Natural Park are not good. One third of these children die before they are mature, with the chance of dying in the first year of life being 14%. Still, child mortality is even higher among the San Ildefonso and southern Cagayan Agta, as well as among another Negrito people, the Batak of Palawan. In these populations, half of prepubescent children die, while about 29% do not even make it through the first year of life (Early and Headland 1998:101; P. Griffin and M. Griffin 1992:300; Eder 1993:116). How to explain for this difference?

One possible explanation would be that somehow the overall health condition of the Agta population of the Northern Sierra Madre Natural Park is less bad than that of the above mentioned groups. Nutritional and medical studies would need to prove that however. A difference in sampling technique and methodology provide an alternative explanation. While Headland and Eder both kept complete records of their study populations through time by listing births and deaths as they occurred, my own record is mostly based on interviews with parents remembering their family histories. At the same time, all other authors took their samples of live births from more restricted geographical areas than I did. Early and Headland (1998:87) base their analysis on a sample of 455 live births collected on the San Ildefonso Peninsula; Eder (1993:116) uses a sample of 130 live births taken from several adjacent watersheds; while P. Griffin and M. Griffin's sampling procedure remains unclear. It is possible that the relatively diverse and wide geographical range from

³¹ Probably, many of the deaths for which parents say they don't know the cause are attributed to such malign spirits as well. As people are often hesitant to acknowledge their belief in a spirit world, they may be cautious to mention it as such.

³² These include two adolescent brothers who were hit by a falling tree; and two toddlers who were washed away by a flood. The remaining accidents concerned a young child falling from a tree, an infant who was suffocated by the mother's breast, and a teenage boy who got killed in a hunting accident.

which my sample (833 live births) was taken explains for the lower child mortality figure. As we will see in chapters to come, circumstances with respect to access to drinking water and food intake differ between Agta residential groups in the Northern Sierra Madre Natural Park. These local variations may result in overall lower child mortality levels.

However, these differences between Agta child mortality rates are insignificant in comparison to differences with national and regional figures. In the year 2000, national under-five mortality was 40‰, while infant mortality stood at 30‰ (Unicef 2007b). In the Cagayan Valley infant mortality was even much lower, standing at 13‰ (NSO 2005a:227). These figures show just how strikingly high Agta child mortality is compared to national child mortality. The chance for an Agta child from the Northern Sierra Madre Natural Park to die before its fifth birthday is seven times higher than it is for an average Filipino child. Chances for an Agta infant to die are five times as high.

Out-marriage

In the foregoing it was established that high mortality levels, especially among children, are at least partly responsible for the Agta population's slow growth. Here, the importance of another possible growth impeding factor will be discussed. This is the marriage of Agta to non-Agta spouses. The high occurrence of inter-ethnic marriages has been described as the biggest threat to the San Ildefonso Agta in Casiguran. There, 40% of Agta women marry non-Agta men, while it is much rarer for Agta men to marry non-Agta women. These couples and their children tend to live on a non-Agta farm or in a non-Agta hamlet away from the Agta community and are considered to form a separate population, labelled the 'acculturating population' (Early and Headland 1998:151, 163; T. Headland and J. Headland 1999:4).

Among the Agta of the Northern Sierra Madre Natural Park, marriage with non-Agta occurs on a much smaller scale. Of 729 Agta adults whose marital status and place of residence are known, only 29 (4%) are married to non-Agta. Of these, 24 (83%) are women and five (17%) are men. The non-Agta spouses are mostly from Ilocano (59%) and Paranan (14%) origin, while some are Tagalog, Bicolano or Ifugao. Of these inter-ethnic couples, 11 (38%) live in town- and village centres within the research area but outside the Agta community, ten (34%) permanently reside within Agta communities, six (21%) move between houses within and outside Agta communities, and two (7%) live far outside the study area.

With 4% of adults having non-Agta spouses, inter-ethnic marriage is certainly not the most serious threat for the Agta population of the Northern Sierra Madre Natural Park. Moreover, it can be questioned whether the alarm raised over this sort of marriages is justified. According to Early and Headland (1998:150) 'An Agta woman in such a union becomes immersed in her husband's way of life and loosens her ties to Agta ways. [...] Children of these marriages are more culturally Filipino than Agta.' As a result, inter-ethnic marriages are considered 'a double-edged demographic sword because they accelerate the relative growth of one population

[the acculturating population] and the decline of the other [the Agta population]' (Early and Headland 1998:163). In this view, all Agta (women) married to non-Agta, as well as their children, are lost to the Agta population. Indeed, they are no longer counted as members of that population, but are instead considered members of the acculturating population. The growth of this acculturating population is predicted to eventually result in '[...] assimilation of the Agta into the Filipino multiracial population, as has happened among Negritos in other parts of the country' (Early and Headland 1998:165).

This interpretation of inter-ethnic marriages needs qualification. Chapter V will provide several examples of such unions which show that inter-ethnic marriage does not necessarily imply a loss of ties with the Agta community and culture. It will be demonstrated how these marriages can actually benefit and even strengthen the Agta population as a whole.

FAMILY

Kinship

There are two main interpretations of the Agta's kinship system. The first considers the Agta to follow a bilateral kinship system with overlapping personal kindreds, in which the nuclear family acts as the basic social unit (Headland 1987b:262-4; Early and Headland 1998:87; Rai 1990:31). These kindreds only have coherence as a group around the *ego* at its centre. As a unit, they do not own land or any other property (Rosman and Rubel 1995:95).

In the second interpretation, in addition to bilateral kindreds the Agta have cognatic descent phrased groups (M. Griffin 1996:187, 192-3). Cognatic descent is traced through kin relations with a common ancestor from either mother's or father's side, or both (Rosman and Rubel 1995:90). For the Agta, this common ancestor is not a mythological figure which represents the first Agta, or first human. Instead, it usually is an elderly couple which is considered to have primary rights to a certain area because they were the first to hunt, fish or farm there. It is important to note that these forebears are usually thought to have lived only two or three generations ago, but who they exactly were does not seem to matter.³³ Members of the same descent group can claim collective rights to land through a hereditary link to this ancestral pair. While individuals usually only exercise active membership in one descent group at a time, in theory they belong to several cognatic descent groups. Such flexibility in membership allows a person to return to his or her natal group in case a marriage fails or another crisis occurs (M. Griffin 1996:198-201).

Based on my own observations, I find M. Griffin's focus on cognatic descent groups insightful and convincing. While nuclear families, or households as I call them, indeed are the most basic social unit (Headland 1987b:262-4), they never operate on their own. Instead, their economic and social behaviour depends on the behaviour of closely related households who are part of the same extended family.

³³ Agta's genealogical knowledge tends to be limited and superficial (Headland 1987b:269; M. Griffin 1996:7).

Usually this group consists of various siblings and their nuclear families as well as their parents in as far as these are still alive. There is no such thing as an extended family head in that one person extends control over the others. However, certain elderly people do have 'stronger voices' than others (M. Griffin 1996:50), meaning that their opinion is much valued and their advice usually followed.

Each extended family considers a certain river valley or coastal area as its home. Indeed, as M. Griffin (1996:50) mentions, this tie with a certain area primarily stems from the fact that several generations of forebears originated from it. Within their ancestral area, individuals may freely move between various settlement sites and make use of natural resources. As mentioned, in addition individuals may claim membership to various other descent groups through their own parents, and the parents of their spouse. One's range of movement generally extends to where kin-connections exist. In practice, this includes a number of adjacent coastal areas or watersheds. I will shortly provide more detail on the range of these kin-connections and its implications for mobility and resource use. Here, I will first address the implications for the choice of marriage partners.

Marriage and family life

The marriage norm is monogamy.³⁴ Agta women marry at a mean age of 19.3 years, and men at 21.7 years (Early and Headland 1998:92; Headland 1987b:270). Ideally, marriage with anyone already called by a kinship term³⁵ is avoided, even if he or she is no consanguine. This means that the siblings, cousins, aunts and uncles of a married couple should all refrain from marrying each other. In practice, however this incest rule is pragmatically dealt with (Headland 1987b:267-9).³⁶ As explained above, Agta are most familiar with one or two specific coastal areas or watersheds. Within these areas their kin-connections are closest and marriage is avoided. Neighbouring areas can however also be visited and even lived in, provided that at least distant kin-connections with its inhabitants exist. Most marriage partners are found within these neighbouring areas.

Marriage can come about in different ways. Most marriages that took place between young people during the study period were initiated by the spouses themselves and followed from a period of courtship.³⁷ A boy who wants to marry a girl must seek permission from the parents from both sides (box 2.1). This request sometimes follows a short period of elopement (Headland 1987b:269-70). If

³⁴ M. Griffin (1996:182) reports several cases of polygyny and one anecdotal case of polyandry for the Agta of Cagayan Province. There, polygyny sometimes occurs when a first wife cannot bear children. Co-wives may either be sisters or completely unrelated.

³⁵ The Agta language has 15 primary kin terms of reference (Headland 1987b:267).

³⁶ Several of my elderly informants expressed worry and even dismay about this fact. According to them, the number of marriages between both distant and close kin is increasing.

³⁷ Young Agta of marriageable age regularly visit neighbouring residential groups to explore marriage options. At least in southern Isabela, such youngsters are abundantly adorned with necklaces and arm-decorations to show off their single status. Agta say that in communicating their interest for someone, betel nut exchange is of importance. When a boy asks a girl for betel nut, her response reveals her feelings. Refusal means rejection. If she meets his request she welcomes him in her life.

permission is granted, it is not unusual for couples to have sexual intercourse prior to the official marriage.³⁸ However, if either partner finds the romance a disappointing experience, courtship may be over just as soon as it started.

Gaining permission to marry is especially difficult if (grand) parents have another marriage partner in mind.³⁹ Parental marriages are still common. Often, these unions have been pre-arranged when the spouses-to-be were not yet at marriageable age. This does not mean, however, that these marriages will push through regardless of the spouses' opinions. An informal trial period is usually installed of which separation may well be the outcome. Both in the case of parental and non-parental marriages, this trial period is often (but not always) combined with bride service, in which the boy must accomplish all kinds of tasks for his prospective family in-law to show he will be a good provider for their daughter and future grand-children. In some cases, the girl is also required to prove her skills to the boy's family (box 2.1). This period may last from three months to a year and anywhere in the course of it the marriage may be called off by the families of either side (Early and Headland 1998:89).

A third possibility is remarriage after separation or after a spouse's death. As Headland (1987b) explains in detail, separation occurs if efforts of reconciliation have repeatedly failed. If both parties agree, new spouses may be found. In case of a spouse's death, remarriage may occur after a mourning period of at least a year has been followed. During this period, the widow(er) is not allowed to wear colourful clothing or to have a hair-cut. Dark coloured strings of cloth are tied around, neck, wrists, arms and upper body. The cutting of these cords by a relative of the deceased eventually ends the mourning period. Especially widow marriages between older people often arise more for practical than for romantic reasons. They are therefore also relatively fragile and end up in divorce more often than other marriages. Variations on this type of marriage are sororate and levirate marriages. The former occurs when a widow remarries her deceased husband's brother. In the latter case, a widower remarries his deceased wife's sister (Headland 1987b:267-272).

Both in the case of remarriage after separation and after a spouse's death, the new couple usually start living together without a formal wedding. All other marriages do involve a wedding celebration. The marriage ceremony (*kasal*) is carried out either in the wife's or husband's settlement. Relatives from neighbouring watersheds or coastal areas are informed and invited to come and join the wedding. The presence of certain key relatives is of such importance that the ceremony will not push through until their arrival. This may take several weeks. Meanwhile,

³⁸ According to an Agta informant from Diangu (settlement no. 25 on map 2.2) an innocent love affair can be taken one step further as follows. A man can show his affectionate feelings for a woman by making a scissoring movement with the index and middle finger of one hand. If she feels the same way, she shows him four fingers of one hand, meaning that she allows him to visit her four nights in four weeks. After that, she will decide on their future together. Although this was not explicitly said, it seems this last practice must be related to a woman's menstrual cycle. With a bit of luck, she might be pregnant after these four visits, in which case she will almost certainly stay with him.

³⁹ For instance, in February 2003, a young man from Digud (settlement no. 15 on map 2.2) and his mother crossed the mountain range to Diwagao (settlement no. 18) for him to court a certain girl. He was all dressed up for the occasion, but came home empty-handed in less than a week. Even though the girl allegedly fancied him, her grandfather preferred her to marry someone else.

relatives from both sides prepare for the celebrations by acquiring meat, fish and liquor.

The ceremony itself is short and consists of the formal announcement, usually by an elderly man, that the couple will from now on live as husband and wife. A public speech follows in which the young couple is advised to stick together, to solve their problems among themselves and to seek help from their respective families should serious conflicts arise. Afterwards, gifts are distributed to the family of the bride. These mostly include clothes, cooking utensils and other household necessities.⁴⁰ Finally, the union is celebrated by eating, drinking and dancing together.

Box 2.1 Love among Agta teenagers in San Mariano

In early 2004, two teenage girls, Selia and Jenalyn, fell in love with two teenage boys, Richel and Dino, all from southern San Mariano. By the start of the dry season the two couples started courting and at the onset of the rainy season, they got married. In the year that followed, the first children were born. This is how Selia and Jenalyn recall how it all came about.

At some point in early 2004 Selia left for Diwagden (settlement no. 12 in map 2.2) to plant her parents' swidden field. When she returned to Digud (settlement no. 15) she realized she was in love with Richel. She could not eat, she could not sleep, she was thinking of him all the time and she missed him when he was not around. Meanwhile, Jenalyn was feeling the same about Dino. The two girls were the only ones who knew about each other's feelings and they kept it a dear secret.

Apparently, the girls' feelings were reciprocated, for on the night of Selia's return to Digud, Richel followed her when she walked to the neighbouring settlement of Dipili (settlement no. 16). They decided they wished to get married. Their parents however, refused as they considered the couple too young for marriage. Dino, who wished to ask permission to marry Jenalyn, ran into similar problems. The two boys were so disappointed and frustrated with their parents' decision that they left the Disabungan watershed for a whole month. They went to the next watershed to the south (to Diwagao, settlement no. 18), where they engaged in logging activities.

When they returned to Digud, the boys brought back brightly coloured bead-necklaces (*manek*) for the two girls. Moreover, they finally convinced their parents that they were prepared for marriage. All parties agreed that the two couples would go through a short trial period of several weeks. Jenalyn and Selia helped their future in-laws with planting, weeding and cooking, while Richel and Dino contributed to their prospective family's income by engaging in logging activities and fishing. With that, the time had come to call for a double-wedding, which eventually took place in September of that year.

⁴⁰ Rai (1982:92) and M. Griffin (1996:177) both report the traditional, but now accordingly diminishing, importance of the *Caryota* palm (*Caryota cumingi*) as a wedding gift.

If the newly married couple were not yet living together, they now start their own household. Post-marital residence can be both matri- and patri-local. In the course of their married life, couples often stay with the family of either side for shorter or longer periods. They always have their own house, regardless of whether there already are children. Dwellings are very small and basic. Headland (1986:460) has found that they averagely provide only 1.2 m² of living space per capita. The few things that people own are stored in this small area. The most important of these are hunting and fishing gear, sleeping mats, hand-woven baskets holding clothes and blankets, a few cooking pots, cups, plates, and in most cases a weighing scale and radio.⁴¹

Depending on the amount of time a household intends to spend somewhere and on the weather conditions, dwellings vary in structure. The simplest are the *pinanahang*, which are usually only constructed during the hot summer months. These are windshields woven from the leaves of various types of palm, supported by one or several wooden poles. Sometimes a floor is constructed from bamboo or, if available, from wooden planks. *Pinanahang* may be conveniently turned to shield the family from sun, wind or rain. When a stretch of river bed or beach has become grubby with children's and dogs' excrement, *pinanahang* are picked up and moved to a cleaner area. For the rainy months slightly more solid dwellings are constructed. A bamboo or wooden floor lifted off the ground serves as living and sleeping area. The hearth is located immediately next to the floor on the ground. Floor and hearth are covered by a palm-leaf roof constructed over a frame of wooden poles. Walling is either absent or consists of palm-leaf shields. Tarpaulins, empty rice sacks and other nylon and plastic items are eagerly combined with natural construction materials. Only in exceptional cases where Agta live in or near a village centre, do their dwellings have galvanized iron roofs (photos 2.1 to 2.4).

Privacy is absent from Agta settlements. Dwellings are open in structure and situated closely together. The forest and deserted stretches of coast provide alternative havens of solitude and it is common for couples to go on fishing trips for a few days. This allows for enjoyment of undisturbed (sexual) intimacy (see also P. Griffin and M. Griffin 1992:310) and for a break from family pressure. Living among the relatives of one's spouse can be challenging. Especially in the first years of marriage constant deference has to be shown and there is a strict taboo on mentioning the names of one's in-laws, even when they are not around (see also Headland 1987b:273-4; Vanoverbergh 1938:159). Breaking this taboo is thought to cause painful boils, but according to some this problem can be avoided by mentioning an in-law's nickname rather than the real name.

⁴¹ Occasionally, a self-made guitar is present in an Agta dwelling, which is used while singing both Agta and non-Agta songs. The former are beautiful chants, usually lullabies. Most other Agta songs deal with love, foraging trips, foot-travel or intra-tribal raiding. While certain elderly people are renowned singers, children and adolescents still learn some of these songs as well, although they are decreasingly sung.



Photo 2.1 Settlement at Blos River, Maconacon, April 2004



Photo 2.2 Wooden house at Dipili, San Mariano, February 2007



Photo 2.3 Coastal settlement at Dimatog, Palanan, May 2005



Photo 2.4 River-dwelling settlement at Diangu River, Maconacon, March 2004

Aside from these mild tensions, the mood in Agta camps is generally relaxed and pleasant. Certainly within the household, the atmosphere tends to be warm. It is also marked with a lot of time for interpersonal contact and exchange, much of which is physical in nature. Small children are often held and cuddled, while there is much physical contact between older children and adults of the same sex as well. When it rains, and at night, household members usually cuddle up as closely as possible. A familiar sight is for one person to groom another. While this of course has a practical side to it, the intimacy and relaxation it brings are clearly enjoyed.

Gender relations are fairly balanced, but there certainly is a rather clear division of labour. Women are mainly responsible for household chores and child care. Time allocation studies conducted among three Agta groups in the study area show that, on average, women spend 30% of their time in domestic activities and childcare, while men do so only 8% of their time. Other typical female tasks are the digging of wild yams, the collection of weaving materials for roofing, mats and baskets, as well the weaving activities itself. Despite earlier observations to the contrary (Estioko-Griffin and Griffin 1981b), women are no longer involved in hunting. Men usually also carry the full responsibility for honey gathering, lobster fishing and logging. All other important livelihood activities, such as fishing, the gathering of rattan or other forest products, agriculture and paid farm labour are participated in by both men and women, although not necessarily equally intensively.

While most marriages are harmonious, of course disturbed relations and abuse do occur. Several cases of men beating up their wives were encountered. This always happened under the influence of alcohol, often by both spouses. These are exceptional situations, which are not accepted by the other group members. Especially elderly people attempt at mediation and sometimes outside help is sought. The aim of such mediation is to make the marriage last, but repeated alcohol abuse, chronic conflict, aggressive behaviour and adultery are seen as legitimate reasons for separation. No formal procedure is needed to end a marriage (see also Headland 1987b:271). The couple simply stops living together. Children usually live with the mother but may also be adopted by other relatives, depending on the mother's new situation. If they stay with the mother and new children are born out of a following marriage, relations between half-siblings vary. While Headland (1987b:273) notes that such relations are often troubled, I came across many close relations between (adult) half-siblings.

Child birth and childhood

Although several traditional contraceptives and methods for inducing abortion are known and practiced, children are usually highly desired and most couples have a child within one or two years of marriage. Agta women give birth to their first child at an average age of 20.4 years. With a mean interval of 2.8 years between each child, parents may have eight children or more, but as we have seen, most experience losing at least several of these (Early and Headland 1998:92-3; Estioko-Griffin and Griffin 1985:71-2).

In preparation of delivery, the pregnant woman herself, her husband, or another relative collects and dries the bark of the *balete* tree (*Ficus* sp.). Following the delivery, the bark is burnt as the produced smoke is thought to strengthen mother and child. Women deliver at home or in the house of a close relative. In principle her husband is the primary assistant, but there is nothing private about giving birth. As soon as the labour pains start, a crowd of adults and children gather around the mother and encourage her by shouting instructions (see also Early and Headland 1998:90). The most experienced of these people usually eventually bring out the child (photos 2.5 and 2.6). Sadly, however, fatal birth complications regularly arise.

The umbilical cord is cut using a piece of split bamboo or a machete. Together with the placenta, it is then buried near the parents' house (Tumanut 1996:81; Simon 1982:81). In the days after birth, a string produced from the bark of the *manglat* tree (*Ficus rivularis*) is tied around the infant's belly. It usually stays on until the child can walk and it is thought to stimulate its growth. Around and after birth, further care is taken to ward off evil spirits. Early and Headland (1998:90-1) report that to this end *almaciga* resin (*Agathis philippinensis*) is burnt, garlic charms are placed around the neck of infant and mother and when the baby cries at night parents and grandparents hoot loudly to drown out the sound as it may attract nearby spirits. In addition to this, I observed that parents sometimes hang a monkey's skull in front of their dwelling, its hollow eyes supposedly scaring off the spirits.

Some parents postpone the naming of a newborn to keep such spirits at a distance. Mentioning an infant's name is thought to attract malignant spirits, and to confuse them sickly children's names may be changed several times (see also Reed 1904:55; Tumanut 1996:81-2). Other parents say that naming a child right after birth is simply not useful, as it will not yet respond to its name. Usually, a child is named in the course of the first year. As many children do not survive this period, it is likely that parents also wait with naming their newborn until they have confidence in its survival. Births are rarely registered at village or town administrations. Among other things, this complicates including infants in immunization programs, which in turn negatively affects a child's survival chances.

Perhaps because young life is so fragile small children are treated strikingly affectionate. They are rarely shouted at or slapped. Infants and toddlers are almost permanently held, cuddled or played with (see also M. Griffin 2000:107; Early and Headland 1998:129-131). P. Griffin and M. Griffin (1992) have shown that although a child is handled by many different persons, Agta mothers extend over half of all care given to their children. Elder sisters and grandmothers each provide about one tenth of all care, while fathers give only 4%. Fathers' role in child care varies however. If they have several young children, they provide relatively much care in order to maximize these children's survival chances. But if teenage girls are around to relieve them from this task, fathers tend to be less active care givers (P. Griffin and M. Griffin 1992:304, 313, 316).



Photo 2.5 The birth of Kristopher Mariano at Digud, December 2004



Photo 2.6 Kristopher Mariano with his uncle and mother, December 2004

The close watch on children decreases as soon as they can walk, provided they are healthy. From then on, Agta children are as free as birds until they are around six years old. These years are mostly spent playing with siblings and cousins. The Agta playground is extensive and challenging, consisting of calm pools in the river or sea, coral reefs, forest, and swidden fields. Self-made toys such as wooden tops, plastic kites and mini-boats provide additional entertainment.

While young children occasionally contribute to the household's meal by spearing a small fish or catapulting a bird, they have no structural responsibilities. Real life, however, starts young as well. This is especially true for girls. Once they are about six years old, their assistance in the household is regularly requested. Fetching water, cooking, washing clothes, doing the dishes and, most of all, carrying around younger brothers and sisters are tasks often delegated to young girls. Boys certainly also help out in the household, for instance by collecting firewood. Yet, they have less fixed duties than their sisters (see also M. Griffin 1996:7).

Once they are around ten years old both girls and boys also become economic providers and are expected to contribute to the daily meals by fishing, collecting and trading forest and marine products, helping out on the land, and joining their parents in paid farm labour. This is also the age on which boys start to seriously participate in hunting trips, although it may still take years before they kill their first game. In areas where Agta engage in logging, boys start assisting in cutting and hauling around this time as well. All these activities are further intensified and trained over the years, until the moment that young Agta are capable of having their own independent household. By this time, only few of them have gone to school. Less than 10% of all Agta children in the Northern Sierra Madre Natural Park were enrolled in formal education at the time of research.

If children cannot live with their biological parents they are adopted by relatives. This can be because the child has lost either or both parents, or because the mother has remarried. In the latter case adoption is chosen if children receive second-class treatment in the new household (see also Headland 1987b:272-3).⁴² Sometimes, adoption makes painful situations more bearable. I know of several cases in which an Agta woman gave birth to a child of which her husband was not the father. This happens relatively often in the western watersheds where non-Agta loggers are present in large numbers. In these areas, both sexual relationships between loggers and (married) Agta women as well as sexual abuse of the latter occur. While children resulting from such intercourse are often raised alongside their half-siblings, adoption is sometimes chosen as less painful alternative. Headland (1987b:272-3) and P. Griffin and M. Griffin (1992:302) suggest that even by their foster parents these adopted children are often not treated as well as 'real children'. In contrast, I have often been surprised at how seriously foster parents take their role.

⁴² One case is known in which such maltreatment took the form of sexual abuse. This concerned a man's attempt at molesting the teenage daughter of his second wife. As a solution to the problem, the girl was arranged to marry a young man from a neighbouring watershed.

BELIEF SYSTEM

Although Philippine Negrito belief systems cannot be seen in isolation from non-Christian beliefs of surrounding peoples (see W. Scott 1994:77-93), various early explorers, missionaries and anthropologists nonetheless considered them sufficiently distinctive to describe them separately (see Reed 1904; Vanoverbergh 1937-38; Fox 1953; Schebesta 1957; Garvan 1963).⁴³ Their combined work provides insight in the variability of Negrito belief systems and in their common characteristics. Among the most important of these shared features are the lack of a creation mythology, a strong belief in the survival of human spirits, and a deep fear for these spirits.

Both within and outside the Philippines, one main aspect of Negrito belief systems remains the subject of scholarly disagreement. This concerns the question of whether they are primarily monotheistic or animistic in orientation (Noval-Morales and Monan 1979:77-80). While Vanoverbergh (1938:160-1) and Schebesta (1957:247, 253) are convinced of the former, Fox (1953:305-6) and Endicott (1979a:23, 197) suggest the latter. Other authors are ambivalent on the issue. Garvan (1963:227) writes that most Negrito populations do not believe in a single deity, but '[...] here and there may be a group who for some reason or another had gotten the idea that there existed a supreme spirit.' Reed (1904:65-7) mentions that the Zambales Aeta believe in a large number of spirits, but also refers to one 'supreme spirit' in which all spirits of those who die enter.⁴⁴

Similar disagreement and ambivalence exist in relation to the Agta's belief system. According to Headland (1987c:348) the Agta believe in a single high God, but who or what this deity is remains unspecified. At the same time the Agta are reported to believe in a large number of supernatural spirit beings (Headland 1987c:348; P. Griffin and Headland 1994:73). In contrast, Rai (1982:197, 1985:35), denies the Agta's monotheism and fully focuses on their animistic orientation. I follow Rai in this respect as I have not found any indication that Agta recognize the existence of a single deity, except among a minority that adopted Christian faith, an issue to which I will return in Chapter VI.

No scholars mention an Agta creation mythology. In as far as I did come across it the related myth was recognized by only a small number of informants from within a limited area. Outside this area no one agreed on its validity (box 2.2). This is striking especially in comparison to the richness of creation mythologies held by other Negrito populations, most notably the Batek of Peninsular Malaysia, which has been documented in detail by Endicott (1979a:33-52) with later additions by Lye (2004:79-84).

⁴³ Garvan's work was published in 1963, but it is based on studies conducted between 1903 and 1924.

⁴⁴ A related question concerns the interpretation of the so-called nocturnal praying ceremonies, which have been documented for various Philippine Negrito groups. Rahmann (1984) provides a literature review and discussion of these thus far poorly understood rituals. A major obstacle in the analysis and interpretation of the ceremonies is that the languages in which they are held were not understood by the documenters (Rahmann 1984:225). Nonetheless, they are assumed to be addressed to a Supreme Being (Rahmann 1984:233-6), which has in turn been taken as evidence for the monotheistic orientation of Negrito religions. Except for Vanoverbergh (1938:161) I have found no references to the occurrence of nocturnal prayers among the Agta of North-east Luzon. In my own fieldwork I have never encountered any evidence of their continued performance.

Box 2.2 Creation mythology: the story of Uag and Udok

Most often, my questions about the origins of the world and its inhabitants were met with long silences or a straightforward ‘That, my child, I don’t know’. One morning in Dimasalansan was different as the old man During Ordinario told me: ‘Well, maybe it has been God who created the world. That is what some people say. [Silence] But if you like I can tell you what *really* happened.’ Below follows the creation story as told by Mr. Ordinario, complemented with elements added by three other elderly informants from Dimasalansan. No other informants within or outside Dimasalansan recognized this story, or the existence of its main characters.

‘A long time ago there were two birds. There was one male bird, his colour was black and his name was Uag, because he said ‘uag-uag-uag’. The other bird was a female, white in colour, and her name was Udok. Uag and Udok lived together in the skies. It was only them and they were very lonely. Therefore they made a plan to create people to keep them company. In order to do so they came down from the skies, but they saw only a big blue ocean below and they needed something to land on. [According to some informants Uag and Udok also created the sea, but is not clear when in the story this was done.] They flew around to search for soil, from which they made flat land. While waiting for the soil to dry Uag and Udok realized that they should also make mountains. They put thick forest on the mountains and on the flat land. Then they created wild pigs, deer, birds, monkeys, fish and other animals for the people to eat. Now it was time to put people on Earth. Uag and Udok made love and Udok gave birth to a male and a female Agta. [All informants claim that the first people on Earth were Agta, but their names are unknown.] These first Agta gave birth to five children, of which two again were an Agta couple and three were white. The three were a couple plus a male or female, who was adopted by the Agta. From then on, more and more people of all colours were born up to the present moment.’

All informants agree that Uag and Udok are still alive today because if they weren’t the world would cease to exist. According to some the two birds live in the skies where no one can see them. They, however, see everything we do. Others claim that the birds are living on Earth and can be seen everyday. Uag is small and lives in the forest (the bird is most probably a crow), while Udok lives on reef flats or in rice fields (probably a little egret or cattle egret). There is no food taboo on hunting or eating these birds.

There is disagreement on the story’s origin. The oldest informants maintain they heard it from their grand parents, who were Agta. Others heard it from *Kristyanos*, even from ‘*Kristyanos* carrying bibles’. According to these informants, in the *Kristyano* version of the story Uag and Udok were created by God and were not themselves the ultimate creators. Also, while Uag represented Agta (being a small and black forest bird), Udok represented *Kristyanos* (being tall, white and living in the lowlands). There is some resemblance here with a Visayan creation myth, which also speaks of the world consisting of skies and water in its earliest beginning, and a bird which created land out of its need to rest and nest. In the Panay version of the story two categories of fleeing children are recognized: those who hid in the kitchen ash box and became the ancestors of the Negritos, and those who fled to the open sea, the progenitors of the Spaniards (W. Scott 1994:87).

Having found no evidence of an overarching religious framework, anthropologists tend to conclude that the Agta's belief system lacks systematization compared to that of other non-Christian groups in and outside the Philippines (see Headland 1987c:348). It has even been claimed that the Agta 'do not take their religion very seriously' (P. Griffin and Headland 1994:73). This, in my view, is an incorrect impression. While there is no denying that Agta spiritual life is hardly visible at first sight as it appears to have no extravagant rituals and ceremonies, this does not mean people attach no worth to it. On the contrary, as we will shortly see, the Agta express a strong, and reasonably consistent, belief in a supra-natural world. Moreover, they see an impact of this supra-natural world in various spheres of life, notably health and foraging success.

Agta describe the supra-natural world as consisting of two classes of spirits. These are the spirits of deceased ancestors and nature spirits. All of these are referred to by the general term of *anito*,⁴⁵ while more specific names are recognized for particular spirits. As we will see, like many other hunter-gatherer peoples the Agta consider this non-material realm of ancestor and nature spirits to be of direct influence on human health, both physically and mentally (see Voeks and Sercombe 2000:679; Lewis 1977:232; Kroes 2002a, 2002b:243).

Although the Agta's belief in these spiritual beings has not gone unnoticed by other authors, it has not received the attention it deserves (see Rai 1985:36; Headland 1987c:348; Early and Headland 1998:99). The following paragraphs therefore describe each of these two spirit classes and their relation with daily life.

Ancestor spirits

The first of the two main spirit classes the Agta recognize are the spirits of deceased humans. These may either help or harm the living, depending on the situation. Like all other spirits, they are generally referred to as *anito*, but when conversation with a particular ancestor spirit is sought he or she is addressed by his worldly name. Mentioning of the names of the deceased is otherwise avoided,⁴⁶ although not strictly, as this may 'wake up the spirit' (Headland 1987b:269).

Death and burial

Agta say that when a dead person's body starts to decay, his or her soul (*kalidua*)⁴⁷ leaves the corps and becomes a spirit (*anito*). The *anito* roam around in the domain of the living, but as they have no kinship network of their own (Rai 1985:36), they feel lonely and abandoned by them. As Headland (1987b:271) points out, this fits

⁴⁵ The word *anito* is used throughout Southeast Asia to refer to spirits of multiple classes (see Endicott 1979b:30; Garvan 1963:205, 218, 222; Schebesta 1957:278; Reed 1904:65; W. Scott 1994:83, 252, 270; Schefold 2007:481).

⁴⁶ Avoidance of mentioning the names of the deceased has also been observed among the Batek Negritos from Peninsular Malaysia (Endicott 1979a:117) and the Andaman Islanders (Radcliffe-Brown 1922:111).

⁴⁷ See also Garvan (1963:215) and note the resemblance with the Tagalog word for soul, *kaluluwa* (W. Scott 1994:238).

with the Agta's general feeling of guilt when a person dies. Death is perceived to be caused by the living relatives' failure to keep this person alive (see also Garvan 1963:170; Schebesta 1957:282). Therefore, emotions of grieve and fear are both dominantly present in the period following death. The lonely spirit attempts to stay close to the living and may thereby cause sickness and even death among them.

Within a day the dead is buried. This is done at some distance from the camp, either in a collective burial site or in any other convenient spot away from water or agricultural fields. River-dwelling Agta usually bury their dead in a patch of hillside forest, while most coast-dwelling Agta have burial sites right behind the beach front. Carrying the dead body across rivers is taboo and will cause sickness among the living. The area immediately surrounding the burial site is to be respected and no resource use or cultivation is allowed there (see also Garvan 1963:164; Rai 1985:38).

The custom of burying is said to have been introduced by non-Agta only several generations ago. Before that, bodies were left to decay on bamboo beds in the forest. This still sporadically happens, as was the case with an infant from the Catalangan watershed in San Mariano, who died in March 2003. Usually however, a bamboo coffin is constructed which is sunk into a relatively shallow grave. Often, tarpaulin or rattan shelters are built on top of it (see also Garvan 1963:165). Sometimes a wooden cross with or without a piece of red cloth tied to it is left at the grave's head and decorative flowers may be planted around it (photo 2.7).

Prior to and during the burial several measures are taken to protect close relatives from the harmful impact of the deceased's spirit. First, the dwelling where death occurred is burnt to the ground. Direct family usually temporarily moves in with other camp members. The burial itself is performed by more distant family, while the closest relatives remain in the camp to mourn. The dead is buried with the head facing away from the camp in order not for him to 'see' and yearn for his family. Personal belongings as well as a bit of food and drink are left by the grave so that the spirit does not need to return to the camp for his basic needs. Magaña (2000:32) notes that all footprints leading from the grave are wiped out to prevent the spirit from following the living home.

The spirit's ability to roam around progresses as the dead body decays. The risk of the spirit returning to the camp is therefore highest between four and six days after the burial. To prevent this from happening, a pointed rattan fence (*kalankan* or *bakabak*)⁴⁸ of several meters in width is put up across the trail leading from the burial site to the camp. This is again done by more distant relatives. Pieces of black cloth are hung on this fence to scare the spirit. In addition, some informants mention that pieces of white cloth and hair belonging to the living relatives are stuck to it. These serve to represent the relatives and to show the dead that he or she is missed and loved, thereby making him feel less lonely and rendering his visit to the camp

⁴⁸ These words may be spelled incorrectly as I have not found references to them by other scholars and in email communication dated October 9 2009, linguist Thomas Headland indicated that he did not know these words.

unnecessary. One or several fires are made at the foot of the fence to put up an additional barrier between the *anito* and the camp.⁴⁹

The direct family performs an offering (*atang*) to the *anito* at the fence the following day. Small amounts of rice, meat, fish, betel, coffee or liquor are offered, accompanied by words as: 'This is now your food; you can eat this so do not come to our place to eat our food.' According to some informants, the fence should be removed after this offering as it will otherwise further upset the *anito*. Others say that it ought to be maintained for a longer but unspecified period as continuous protection from the *anito* is needed. In that case offerings may be repeated.

Close relatives usually move camp after one or several offerings have been performed. Depending on the situation, the new camp is built close by or days hiking away. Absence from the place of death may last from only a few weeks to several years. In some cases only the closest family members move away, while in others entire campsites are abandoned (photo 2.8). Moving camp is not only expressed in terms of fear of the *anito*, but as an emotional need as well. 'We need to refresh our minds', 'I kept on thinking of my son', and 'I could not stop crying there' are often heard reflections on why people decide to leave a place for shorter or longer periods of time.

Fear for the dead, sometimes leading to abandonment of the death site, forms a central element of Southeast Asian pre-colonial belief systems. It has been extensively documented for Negrito peoples in and outside the Philippines (see Radcliffe-Brown 1922:108; Vanoverbergh 1938:159; Garvan 1963:164; Schebesta 1957:281-2; Endicott 1979a:118). Interestingly, Endicott (1979a:115) notes that among the Batek Negritos of Peninsular Malaysia, the practice of tree-burial at least partly takes away the great fear caused by the spirits' continued presence. The Batek say that in contrast to burying the dead in the ground, which causes the spirit to get trapped in the earth, tree-burial allows the spirit to escape upward and thus arrive in the after world. The Agta's increasingly rare practice of leaving the dead on a bamboo structure above the ground, as well as the general shallowness of Agta graves may well serve the same purpose.

Among non-Negrito peoples fear for the dead was, and still is to some extent, similarly present. W. Scott (1994:91-2) has documented it for sixteenth century non-Negrito Visayans, noting that the dismantling or burning of a deceased relative's house was the most dramatic expression of grief. It has likewise been described for several Orang Asli groups in Peninsular Malaysia, including the Semai (Kroes 2002a:20, 74-6) and the Chewong (Howell 1984:146-50). Persoon (1989:513, 1994:145-7) describes fear for the dead for the Kubu. Like the Agta, these Sumatran hunter-gatherers flee from an area immediately following a group member's death, often for extended periods of time. This death-related mobility is called *melangun*. Schefold (1988:273-4) notes that among the Sakuddei of Mentawai (Indonesia) fear for the spirits of the deceased is especially great in case of violent death.

⁴⁹ The only reference I have found to bear resemblance to the *kalankan/bakabak* comes from Garvan (1963:164, 177). He mentions that the 'circling of the grave with a rude enclosure' is a general feature of burials in almost every region he visited. He more specifically notes that the Negritos from Tayabas (southern Luzon) erect a fence around the grave several hours after the burial, on which they hang pieces of cloth, among other things. The fence is abandoned in great haste and fear.



Photo 2.7 Agta boy's grave at Batag, San Mariano, September 2004



Photo 2.8 Disabungan Agta, preparing for shift of camp after the death of a family member, San Mariano, September 2004

Taboo areas: the gaygay

Among river-dwelling Agta, a burial is sometimes followed by the proclamation of a taboo area in which entrance and the extraction of resources are not allowed. While Semper (1861:254-5) and Rai (1985:38-9) make brief mention of this custom, it has been most explicitly documented by Antolin (2000:85) and Magaña (2003:248). Here, I will present my own findings on these taboo areas, which are called *gaygay* or *banteng*, depending on the Agta group.⁵⁰ They are marked by a rattan string tied across a river or creek downstream of a new grave. To signal outsiders that entrance is prohibited beyond it the string is adorned with pieces of red cloth, and in former days with bow and arrow too (photos 2.9 and 2.10). Entering the tabooed streambed sideways, even unknowingly, is likewise prohibited. In principle, the taboo area extends in upstream direction all the way to the river's or creek's source.

Permission to enter the area may be granted by those who installed the *gaygay* provided that a fine is paid. This fine comes in the form of cloth, pots, food or anything else requested by the bereaved family. In case the closest relatives have moved far away following the burial, a more distant relative guards the *gaygay* on their behalf. Anyone entering the area without formal permission is said to be shot on the spot. The *gaygay* is lifted if the rattan string naturally breaks (although damaged strings may be replaced several times), or as soon as a trespasser has been caught and shot.

There is an interesting ambivalence about this last aspect. On the one hand, informants are usually unable to give examples of anyone being actually killed this way. In practice, anyone who unduly or unknowingly enters the *gaygay* is allowed to rectify the mistake by paying a fine. On the other hand, the ultimate goal of installing the *gaygay* seems for someone from an unrelated Agta group to trespass, which then justifies this person's killing. Various informants have pointed out that killing the trespasser serves as revenge for the own group member's death, regardless of its cause. This is a common feature of headhunting peoples both in and outside the Philippines (see W. Scott 1994:92; Schefold 2007:480). In the Agta's case, if the instalment of a *gaygay* does not serve to achieve that result, a raid (*ngayaw*) is organized to compensate for the lost soul.

It thus is not so much the full abstinence from resource use within the taboo area that is the *gaygay*'s main function. This contradicts the dominant interpretation in which the *gaygay* is primarily seen as a resource management mechanism which might even be revived for nature conservation purposes (Magaña 2000:53-4; Antolin 2000:85). Although an effect of the *gaygay* may indeed be that resource extraction is temporarily limited, there are formally accepted ways to circumvent this restriction. Being able to revenge the group member's death, at least theoretically, seems to be at least as important. I therefore suggest that the *gaygay* should be primarily seen in relation to death and inter-group relations, and only to a lesser extent in relation to resource management.

⁵⁰ Agta from Palanan, Dinapigue and San Mariano use the word *gaygay*, while Agta from Maconacon speak of *banteng*.

Moreover, with the increased presence of non-Agta in Agta territory, informants complain that their *gaygay* are decreasingly respected. In the course of this study three *gaygay* were nonetheless encountered, all of which were related to a recent death. The first was put up in the Diguse watershed in southern Dinapigue, after two adolescent brothers had been killed during typhoon Harurot in August 2003 (photo 2.9). Their father had installed it, and for the non-Agta in the area who might not have been aware of the practice, a sign board was placed underneath it saying ‘Strictly no entrance’.

The second *gaygay* was put up across Dimabigao River in San Mariano by an old man following the death of his grandchild in July 2004 (photo 2.10). Although he had personally informed all Agta and non-Agta in the area, the man complained that incoming loggers continued to extract timber from the taboo area without asking his permission. The third *gaygay* was installed across Disabungan River in October 2004 after a teenager died in a hunting accident. The boy’s uncle put up the rattan string and replaced it several times after the swollen river washed it out. All loggers who wished to enter the restricted area were requested to pay one litre of gasoline to the bereaved family. This worked out quite well and most incoming people respected the system.



Photo 2.9 *Gaygay* in Diwagao, Dinapigue 2003



Photo 2.10 *Gaygay* in Dimabigao, San Mariano, 2004

Offering rituals

While both Headland (1987b:269, 1987c:348) and Rai (1982:197) explicitly state that the Agta do not practice ancestor worship, I would like to suggest otherwise. The spirits of deceased relatives keep on playing an important role in the lives of the living even long after death. Depending on how they are treated they can either harm or benefit the living. Although *anito* are most dangerous in the first months following death, they need to be continuously appeased. This is done by regularly offering them small amounts of food, especially after eating in the forest during hunting and fishing trips (see also Rai 1985:37; Headland 1987c:348; P. Griffin and Headland 1994:73). Such offerings are very unobtrusive in nature. After or during a meal is consumed a small amount of rice, meat, fish or other edible item is left on the ground. Sometimes, words such as ‘Here is your food’ are spoken. Failure in this respect fills the *anito* with a feeling of neglect. To show their resentment they will cause bad hunting and fishing results, or sickness.

A more organized and collective form of offering ritual called *manglagib* (meaning ‘to remember’) is performed by some Agta groups in San Mariano. It is ideally repeated yearly, preferably at the height of the dry season, usually May. During this eating and dancing ceremony considerable amounts of food, especially wild meat, are offered to the *anito*. Each person addresses specific *anito* to tell them they are missed and to beg forgiveness for any neglect. As Agta are generally unaware of the names of ancestors of more than two generations ago (Headland 1987b:269) the genealogical depth of this ritual is limited. Refraining from performing *manglagib* has serious consequences. First children and later adults will fall ill. Death may follow. During a stay with the Disabungan Agta in August 2004, many children suffered from headaches and fever. This was attributed to a failure to perform *manglagib* that year. Interestingly, this failure was the result of sheer curiosity. The group had wanted to test their parents’ and grandparents’ claim that the ritual was important, but now they regretted their hard-headedness. Thus, they set out to generate enough food to undo their mistake.

Anito do not only cause trouble however. They may assist in securing good hunting and fishing catch. Also, the nearby presence of a good tempered *anito*, which is felt in the form of a cold wind (Garvan 1963:216), is considered a pleasant experience. *Anito* may fool you by causing sudden noises or doing unlikely things. For instance, one night not long after his death, above mentioned Disabungan teenager is claimed to have woken up his uncle by starting the engine of a chainsaw. Such incidents are not intended to harm the relatives, but to remind them of the deceased’s continuous love. *Anito* may also communicate to living relatives through dreams. This is usually an expression of a rather specified desire for food or coffee. Relatives set out the next day to obtain that item. Some informants say that the smell of the particular dish alone suffices to satisfy the *anito*’s desire, in which case the real food or drink can be safely consumed by the living.

Nature spirits and spirit mediums

In addition to ancestor spirits, the Agta recognize various other types of supernatural beings. I will refer to these as nature spirits, following W. Scott (1994:77), who describes their importance for pre-colonial central-Philippines. Although it was earlier concluded that Agta lump these nature spirits together under the term of *hayup* (Rai 1985:36; Headland 1987c:348), I see a subdivision within the *hayup* category. The first and most explicitly perceived group consists of spirits which are harmful to people and whose negative powers can only be neutralized through a spirit medium. These spirits carry different names depending on their habitat. The second group consists of spirits who are the guardians of certain animals, notably wild pig, deer, monkey, civet and bees. It is important to appease these guardian spirits as their mood influences hunting and fishing success.

Malignant spirits

Throughout the research area, informants distinguish around five malignant spirits whose names vary per location and even per individual informant (see also Garvan 1963:222). These are spirits living in big stones and rocks along rivers and beaches (*pinading*, *sihit*, *dangle*, *giddiyo*), spirits living in the soil (*pudso*, *labbing*), spirits living in big trees (*tigbalang*, *pinading*), spirits living in springs (*habwoyan*), and spirits living on coral reefs and in deformed crabs (*serena*).

While all of these spirits are invisible, they can also appear in human or animal form. In those cases, they emerge in odd sizes and shapes, either very small or very large, with very long hair or huge teeth. The presence of a spirit in a spring or pond is indicated by rising water levels upon approaching the place. Spirits living in rocks may be noted by the loud sound of a door opening and closing, while at night they take the form of light balls flying through the sky. This particular type of spirit is known to target pregnant women, thereby causing miscarriage.

There is not much one can do to keep these malignant spirits at a distance, except for scaring them off by making loud noises and regularly offering them food. Because they are invisible most of the time, the risk of unknowingly encountering or touching them is great. This seriously upsets them and they will respond by causing physical or mental illness in the victim soon afterwards. Symptoms vary, but usually involve fatigue, headaches, fever, (extreme) muscle pain, and the display of unintended unfriendly behaviour. Most of these sicknesses are potentially lethal and can exclusively be cured through a spirit medium. These are called *bunogen* (Headland 1987c:348; Rai 1985:38). Within each Agta residential group usually at least one person is a spirit medium. These can be both men and women (box 2.3).

Box 2.3 Becoming a spirit medium

Mrs. Oldeng Donato is a quiet, soft spoken woman in her fifties, mother of five. She lives along the beach of Dimasalansan (settlement no. 40 on map 2.2) and became a spirit medium when her second child had just married. One day, Oldeng went for collecting octopus and shells on the coral reef. She came upon a shell which contained a very small, round stone, which she took home. A few days passed before she found a second and similar stone in the same place. Back home, she put the two stones on a plate and added coconut vinegar. The stones immediately began to circle around the plate, one following the other. This process continued for five days, while in the mean time the coconut vinegar mysteriously disappeared from the plate. From that moment onwards, Oldeng was gifted in two ways.

The first was most apparent. Whenever she set out for collecting octopus she caught huge amounts of them. In every hole she put her spear she would get two or three big octopi and she earned lots. Yet, her luck scared her as she feared that eventually she would pay with her life for all this wealth. Therefore, she decided to return the two stones to where they came from, and her fishing success got back to normal levels.

The second gift is still with Oldeng. This is the power to cure victims of a spirit attack. She can do this because her spirit partner, who lives on the coral reef, chose Oldeng's body to work with. The spirit partner talks to Oldeng through a voice like her own, which only Oldeng can hear. The voice directs Oldeng in detail in treating a malignant spirit's victim. This happens even before the victim comes to call for help. During the curing process itself, Oldeng will follow the spirit's direction as to what to do and what to say, until she goes in a state of trance (*megablon*) during which the real battle between her spirit partner and the malignant spirit occurs.

Mr. Bawe Donato is an old and much respected man living in Dikente (settlement no. 58). He became a spirit medium when he had a series of strange dreams just after his first child was born. In the first dream Bawe encountered a big man who attempted to fight with him. Afraid, Bawe begged him to go away, saying 'you are too big for me to fight you.' The man left, but announced he would return. Indeed, during the following night the man reappeared in Bawe's dream. When Bawe asked him why he had come back, the man told him: 'Do not be afraid, I will not hurt you. I am going to teach you which medicines from the forest you can use to cure sick people.'

Ever since, Bawe is regularly accompanied by this spirit partner. He is guided by him through a voice that appears in his dreams. Whenever he receives a request to cure someone, he will first sleep for a while before visiting the victim. During this nap, the spirit partner talks to him and provides him with the right information. Without such instructions, and without the spirit partner's company, he will not attempt to cure anybody. After a healing session, his spirit partner tells Bawe to ask the victim for a small payment. Accepting large amounts will cause him bad luck. Upon returning home, Bawe gives the payment to his wife Liling, who uses it for household purposes.

No one is born as *bunogen*. Instead, in the course of their adult life they are selected by a benevolent spirit partner. The spirit partner (*bunog*, Headland 1987c:348) uses the *bunogen's* body as a medium for fighting with the malignant spirit. In fact, it is thus not the *bunogen* but the befriended spirit (*bunog*) who does the actual curing. The spirit partner gives the medium directions regarding the ingredients needed for the healing session. These are mostly certain plants or plant components, and betel nut. Directions may either come in dreams, or as day-time visions (see also Garvan 1963:219; Kroes 2002a:20, 62-4). During the healing process itself, the spirit partner guides the medium in what to do and say. This usually involves chewing a mix of leaves and betel and spitting this on parts of the victim's body while chanting to the spirit(s) (*magdubhak*) (see also T. Headland and J. Headland 1974). While working, the medium gets into a trembling trance (*megablon*), during which the benevolent and malignant spirits are fighting within the medium's body. When it gets this far, the spirit partner always wins the fight and the victim is thus cured. In other cases the spirit partner informs the medium beforehand that the fight cannot be won. In that case the victim is advised to seek help elsewhere. *Bunogen* themselves receive special protection from their spirit partner, and are therefore immune to spirit attacks.

Although *bunogen* are respected and valued for their skills, they enjoy no special status. Whether they are wealthier than others is not completely clear from people's accounts. Certainly, payment for the healing is needed. This consists either of a very small amount of money or an item such as a bracelet or an arrow. According to some informants, the payment is not kept by the *bunogen* but is instead offered to the malignant spirit. If not, the *bunogen* risks becoming the malignant spirit's next victim. According to others, the *bunogen* is allowed to keep and use the payment, in which case some accumulation of wealth may take place.

Spirit mediums are certainly not unique to Agta or Negrito culture. W. Scott (1994:84, 252, 271) mentions their occurrence in all parts of sixteenth century Philippines. Their importance for the Batek Negritos and Semai of Peninsular Malaysia has been described by Endicott (1979a:128-141) and Kroes (2002a:20, 79-81). Like the Agta *bunogen*, these spirit medium are usually befriended by a particular helper spirit, which during a trance aides in acting out conflicts in the spirit world. Séances are held for a wide range of purposes, including the curing of illness and epidemics.

Guardian spirits

According to some of my informants the most important of the Agta's prey animals are guarded by supra-natural beings. These informants all agree that wild pig, deer, monkey, and bees have guardian spirits, while there is some disagreement on whether civet and eel also have such guards. Monitor lizard and python allegedly have no guardians. Some of these spirits are individually named. Several informants from Diangu (settlement no. 25 on map 2.2), for instance, recognize a spirit called *aduho*, who is the guardian of the bees. He is believed to live in the honeycomb and therefore, when collecting honey, his permission is asked by using words such as: 'Please allow us to take your house and then you can move to another place.' After the honey is harvested, part of the honeycomb is offered to *aduho*.

Offending these various guardian spirits negatively influences hunting and fishing success, or causes accidents and sickness. The strongest taboo in this regard is to damage or burn the mandibles of wild pig and deer and, according to some informants, the bones of large eels. As the souls (*kalidua*) of these important prey animals are believed to live in their bones, these are to be treated with great care. As we will see in the next chapter, in good hunters' houses pig and sometimes deer mandibles can be seen hanging on a string from the roof. While this partly serves to show off one's hunting skills, it is also a respectful way to treat the souls of previously killed game.

Excessive hunting or fishing, and especially wasting catch are another possible offense to the guardian spirits. For instance, during a three-day snare trapping trip with a Diangu hunter, all traps were found empty or filled with partly rotten meat. The hunter was upset and blamed himself for his misfortune. He knew he should have checked his traps earlier and probably should have set-up fewer of them. Not only was he convinced that the guardian spirits had punished him for his wasteful behaviour by giving him hardly any catch this time, he also feared that he would feel the consequences during future hunting trips. This contradicts Rai's statement (1985:37) that Agta do not perceive the intensive hunting of wild animals to anger what he calls 'animal spirits'.

Agta are ambivalent about 'taking too much'. They both wish for and fear situations in which they can generate exceptional hunting or fishing catch. The case of Mrs. Oldeng Donato (box 2.3) provides an example of this. Goverse (1998:15) and van Alphen (1999:63, 69) give a similar account for the Agta from the Disabungan and Diguse watersheds in southern San Mariano. Here, hunters sometimes encounter stones (*bito* or *padangsal*) in the stomachs of wild pig or deer which they carry with them as good luck charms during next hunting trips. These stones are a gift from the guardian spirits, but their powers easily turn against you. When the lucky hunter catches too much, accidents, illness or death will overcome him. The only remedy is to timely dispose of the stones, which is not easy as they have a tendency to keep coming back to the hunter.

A last way of upsetting the guardian spirits is to joke about wild animals. For instance, two young couples from the Disabungan watershed once returned from an overnight fishing trip without any catch. They ascribed this to their own behaviour: during the preparations of their trip they had been joking and laughing continuously. Clearly, however, this does not translate into a strict code of conduct. In another case I have seen hunters perform obscene acts with a dead hornbill. A stick was moved in and out of its anus and everybody went hysterical over the sound this produced from the bird's beak. I have never been able to discern among the Agta a belief that links disrespectful behaviour towards animals to the occurrence of natural phenomena such as thunder, typhoons and floods. This belief and related taboos are well described for other Negrito and non-Negrito peoples in and outside the Philippines (see Garvan 1963:203, 221, 227; Schebesta 1957:276-7; Endicott 1979a:70, 155-60, 1979b:30; Kroes 2002a:33-5; Howell 1984:62, 79).

As to the deeper origins of the Agta's belief in the various nature spirits described here and the need to appease them, I am groping in the dark. Schefold's analysis of similar beliefs held by the Sakuddei, who live on the Island of Siberut west of Sumatra, may be helpful in future investigations towards this end. Like the

Agta, the Sakuddei believe in nature spirits in addition to ancestor spirits. The nature spirits are the most feared of the two spirit classes, as they are said to be most remote from people. Yet, the peculiarity here is that in primeval times, the present nature spirits and humans are believed to have been one. As the world became overcrowded, however, they split up in two mutually invisible parties. One party became today's mortals; the other party withdrew into the forest and created its own 'culture of the beyond'. There, the Sakuddei's game animals became the nature spirits' domestic animals. By implication, hunting not only necessitates asking permission to the real owners of the game, it also requires that part of the game is shared with these owners. As in the Agta's case, if such sharing is omitted, the forest spirits will harm the mortals (Schefold 1988:74, 2001:364, 2002:426-8, 2007:487). Since the Agta have not traditionally kept domestic animals (except dogs) I consider it unlikely that they would assume nature spirits to do so. However, the idea that the Agta, while they are in the forest, may see themselves as immigrants into the territory of the autochthonous nature spirits certainly deserves further attention.

SOCIAL ORGANIZATION, MOBILITY AND LIVELIHOOD

I mentioned earlier that households rarely operate independently. The wider social entities of the extended family and residential group, as well as marital relations between residential groups, are of great importance in understanding the Agta's settlement patterns, social organization and resource use (Rai 1982; Headland 1987b; M. Griffin 1996).

The residential group and mobility

The ability to settle in a certain area, and to make a living there, is mainly limited by kinship relations. As mentioned, nuclear households are most familiar with one or two river valleys or stretches of coast. Within these areas they regularly move between several settlement sites. Together with other closely related households of the same extended family they form the heart of the residential group in that area. One is not bound to one's own home area however. Based on their kin relations with neighbouring groups, nuclear households may obtain access to adjacent river valleys or coastal areas. Because of this frequent in- and out-migration of nuclear households residential groups are highly changeable in composition.

Rai (1990:58) found that the Disabungan Agta shifted camp every 18 days in 1979/80, with a mean travel distance of 5 km between settlement sites. The frequency of camp movements differs through the seasons. Mobility is highest during the dry summer months (February through June) when residential shifts may take place as often as every few days. Small clusters of households then frequently move between several settlement sites in river valleys or along the coast. The distances over which people move range from less than one to about 30 km, depending on the purpose. During the rainy season travel is hampered by swollen

rivers, typhoons and cold weather. Larger clusters of households then tend to aggregate in semi-permanent settlements, where they may stay for months on end.

There are various, often intertwining reasons for such residential shifts. First, there are economic drivers. Various sites are alternated depending on the hunting, fishing, gathering and farming opportunities they offer on a particular moment. Also, wage labour possibilities in farming or logging may be reason to move elsewhere. Numerous examples of such livelihood driven mobility will be given throughout the following chapters.

A second major reason to shift residence is the death of a closely related camp member. We have already seen that the spirits of the deceased are believed to pose danger to the living relatives. And as death frequently occurs, so do the associated residential shifts. While many long-distant moves are driven by the loss of a close family member, at times, camps just shift several hundred meters following someone's burial.

Conflict is a third reason to move elsewhere (see also Headland 1986:415; M. Griffin 2000:97). When conflict arises, elderly camp members mediate in order to find a solution. If such attempts fail, the group breaks up until everyone's feelings have calmed down. Usually, the party with least strong kin-ties to the rest of the group moves away (M. Griffin 2000:101).

A last reason to move is visitation. Although close relatives tend to stick together as much as they can, someone is always badly missed. Reunions can be very emotional. Several occasions were witnessed in which a group of people collectively broke into intense wailing and embracing after relatives had arrived from elsewhere. Elderly, widowed people, at least as long as they are physically strong, are among the most mobile individuals. They frequently move between settlement sites, sometimes over long distances, to visit the various members of their family who reside in different locations. M. Griffin (1996:50) notes that the advice of these elderly men and women is often especially valued, which is part of their purpose in visitation.

Kinship networks

One cannot just move anywhere, however. The further Agta travel from their own core-area, the less kin connections they have, and the less comfortable they feel. Moreover, beyond certain boundaries they have difficulty understanding the other groups' language. At least two different Agta languages are spoken within the Northern Sierra Madre Natural Park, namely Palanan-Divilacan Agta and Disabungan-Dipagsanghan Agta (Rai 1990:65; Headland 2003:9). As a result of these kinship and language limitations, Agta mainly operate within relatively bounded domains. Within the Agta population of the Northern Sierra Madre Natural Park, I therefore distinguish between three kinship networks. In map 2.2 their domains are indicated by a dashed line.

The first of these kinship networks are the coast-dwelling Agta, whose movements follow the sea-shore in north-south direction (group A in map 2.2). Their population numbers some 708 individuals, or 40% of the entire protected

area's Agta population. The second and third kinship networks both consist of river-dwelling Agta. They move between watersheds on the eastern and western sides of the mountain range (see also M. Griffin 1996:37). The northern of these river-dwelling populations numbers about 219 people (group B in map 2.2), but this population extends north into Cagayan province. The southern river-dwelling population within the protected area is much larger and numbers around 850, or nearly half of the total study population (group C in map 2.2). As I will show, each of these groups shows relative internal cohesion in terms of mobility and kinship. Moreover, relations between them are characterized by mistrust more than anything else.

This mistrust stems from earlier mentioned history of inter-group raiding (*ngayaw*). This is particularly clear for the two river-dwelling groups, both of which claim that until the 1970s, *ngayaw* parties from the 'other side' would invade the own domain. The coast-dwelling Agta do not have a reputation of being raiders, although they do claim to have been victims of raids initiated by river-dwelling Agta. Agta say that raiding parties consisted of up to ten men, armed with bow and poison arrows (see also Rai 1990:66). They were dressed in g-strings and wore body- and head decorations, all of which were red in colour. Several token animals, notably kingfishers, black snakes and schools of fish, were considered to announce a *ngayaw*. These animals moved in the direction from which the raid came. Such omens were thought to be sent by the spirits of the deceased to warn their living relatives of the imminent danger.⁵¹

Information on what triggered raids is inconsistent. According to some informants, any death within the own group, whether natural or not, needed revenge by causing death in another group.⁵² Others claim that raids were only initiated when a member of the other group had trespassed the own group's domain. At least in recent times, *ngayaw* probably resulted in a limited number of casualties (Rai 1990:66; Headland 1986:385).⁵³ Informants are usually unable to name the individual victims of well-remembered raids. Given the Agta's low population numbers it would have been highly disadvantageous if large numbers of people would get eliminated in such raids.

Possibly, therefore, *ngayaw* were mostly of symbolic importance. As such they could have served to defend territories and perhaps even explore new ones. A spiritual, rather than social explanation has been forwarded by Schefold (2007) in his comparative analysis of Southeast Asian headhunting practices. Based on a detailed description of Mentawai headhunting, he suggests that it may have served to appease 'autochthonous forest spirits'. These potentially malevolent spirits are regarded to have inhabited the forests even before human immigration into these forests, and ritual headhunting is one way of pacifying them (Schefold 2007:481, 491; see also Blust 1995:490).

⁵¹ Schefold (2007:484) notes similar importance of omens in headhunting raids on the Indonesian Mentawai Islands.

⁵² Garvan (1963:172) reports a similar, but long abandoned, practice among the Zambales Aeta.

⁵³ The widespread acquisition of shotguns by Agta groups during WWII temporarily intensified raiding however, and increased the number of casualties arising from it (Rai 1990:67).

Most raiding ended with the declaration of Martial Law in 1972 and the subsequent control of the Sierra Madre by the Armed Forces of the Philippines. This not only included a ban on the use of fire arms, but also the temporary confiscation of the Agta's bows and arrows (Estioko-Griffin and Griffin 1975:239; Early and Headland 1998:40). Despite its discontinuation, the collective memory of *ngayaw* is still vivid among both older and younger generations. The various rivalling Agta groups tend to refer to each other as *Ebukid*, which literally means 'from the mountains'. This derogatory label is used, among other things, to refer to unrelated river-dwelling Agta who are feared for their potential raiding intentions.⁵⁴ Although the immediate threat of inter-group raiding has thus diminished, the mistrust it once imbued between Agta groups is still present.

I am not the first to call attention to the existence of sub-divisions within the Agta population of Isabela province. Rai (1990:64-5) has proposed a classification into linguistic groups, which form social units in terms of the Agta dialect spoken, kinship connections and residential area. Indeed, the boundary separating the northern and southern river-dwelling groupings (see map 2.2) corresponds with one of the main linguistic boundaries found by Rai. An important difference between Rai's classification and my own is that the former does not consider the coast-dwelling Agta as a separate group. I maintain that they should be seen as such mainly because of their distinct settlement patterns, livelihood system and relative endogamy. Another difference is that Rai sees several smaller divisions within the southern kinship network. Judging from my own informants' views, these may very well exist. However, as they are more ambiguous than the division between the three above mentioned kinship networks, I will not focus on them here.

M. Griffin (1996:40-1) has criticized classifications of the Agta population into sub-groups as proposed by Rai and myself for being overly typological and taxonomic. Indeed, there certainly are exceptions to the rule. Some Agta speak more than one dialect and have established marital relations with other language groups. Also, in rare cases co-residence with non-kin is taken up, for instance during work for a logging or mining company or because of forced resettlement. Yet, as such situations are considered highly unattractive and even potentially threatening, they rarely last long (Headland 1987b:266, 1986:232-5; M. Griffin 1996:3, 50-1). Thus, the more general pattern shows much stronger social cohesion within the above proposed groups than between them.

I will now turn to a more detailed description of the three kinship networks that I distinguish and the residential groups that were chosen from each of their domains for in-depth study. For the coast-dwelling kinship network, this is the Dimasalansan residential group; for the northern river-dwelling kinship network this is the Diangu residential group; and for the southern river-dwellers this is the Disabungan residential group. Table 2.10 provides an overview of their main characteristics.

⁵⁴ M. Griffin (2000:98) found that members of different Agta groups regard each other as *ebukid*, or aggressive and backward. This confirms my observation that the term *ebukid* is used as a negative reference to any other river-dwelling Agta group with which little contact exists. In contrast, Estioko-Griffin and Griffin (1981a:56, 1975:237) have suggested that the *Ebukid* represent specific Agta groups from the forest interior of Palanan and the boundary of Isabela and Aurora provinces.

Table 2.10 The main characteristics of the three residential groups featuring in this study

	Dimasalanan	Diangu	Disabungan
Kinship network	Coast-dwelling	Northern river-dwelling	Southern river-dwelling
Geography	Coast, Divilacan	Lowland riverine, Maconacon	Upland riverine, San Mariano
Livelihood (in order of relative time investment)	Marine fishing Hunting Rattan and iron collection Farming (swidden) Paid farm labour Subsistence gathering	Paid farm labour Farming (permanent) Hunting Freshwater fishing Subsistence gathering	Small-scale logging Rattan gathering Fresh water fishing Hunting Farming (swidden) Subsistence gathering
Population and settlement	100 people; 25 households; rattan/bamboo and lean-to dwellings	60 people; 14 households; rattan/bamboo dwellings	60 people; 13 households; rattan/bamboo and lean-to dwellings
Distance to non-Agta village centre	One hour on foot or 15 minutes by out-rigger boat	20 minutes on foot	Three hours on foot
Situation in/ outside of park	Inside	Just outside/ in buffer zone	In buffer zone

The coast-dwelling Agta

The coast-dwelling kinship network numbers around 700 individuals or 40% of the study population. Their domain stretches along the Isabela coastline and includes adjacent marine areas and narrow patches of forest. Most residential shifts take place within a range of about 20 km in north-south direction along the sea-shore. For their subsistence, coast-dwelling Agta largely depend on marine resources. Several coastal Agta settlements are located at the mouth of major rivers.⁵⁵ While these residential groups tend to make use of both riverine and marine resources (see also P. Griffin 1989:61), they rarely travel far upriver.

Life at the coast is governed by seasonal conditions. During the dry months, when the sea is calm and clear, fishing is by far the most important livelihood activity. Most fishing is capital extensive and very small in scale (Minter and Goslinga 2007). Men mainly engage in spear-fishing on submerged reef flats. Women search the intertidal reef flats for octopi, shells, crabs and small fish. Occasionally, Agta fish using hook and line, nets or traps, which are mostly borrowed from non-Agta. The catch obtained through these various fishing strategies is partly consumed and partly bartered with nearby farmers and fisher folk. Rice, sugar, salt, coffee, tobacco and gin are the most important products obtained in return. The single more intensive fishing activity is lobster-fishing, which is exclusively done for commercial purposes. Lobster is caught manually or by means of lobster traps. This is predominantly a male task. Several buyers from within and outside Isabela province purchase the live lobster from Agta fishermen. Fishing usually takes place from the intertidal reef or shore. Small outrigger boats, some of which are motorized, are occasionally used for lobster fishing and hook and line fishing. Most of these were distributed to the Agta through governmental and non-governmental programs aimed at intensification of Agta fisheries.

During the dry season mobility is high and dwellings are located right at the beach. Small groups of interrelated households regularly shift between beaches in accordance with fish abundance. Such moves mostly take place within a range of several kilometres. The choice of settlement location much depends on the availability of drinking water. This often gets problematic during the hot dry months as deep wells are usually absent and natural springs dry up. An alternative is to settle in the vicinity of non-Agta houses, where pump wells are often available. Settling near non-Agta also brings the advantage of increased trade possibilities. Long-distance moves occur if specific livelihood opportunities arise, such as intensive lobster fishing or the collection of the nests of edible nest swiftlets. In these cases residential shifts may last several months or even years.

Mobility decreases during the rainy months. To take shelter from the tough weather conditions, the coast-dwelling Agta retreat in coconut groves and brush land just behind the beach front. Here, larger groups of up to 30 households at a time aggregate in semi-permanent settlements. The rough seas inhibit most spear- and lobster fishing activity, while reef gleaning still continues. Other livelihood

⁵⁵ The most important of these are Dimatatno (no. 20), Sabangan (no. 26), Dibol (no. 30) and Diaguan (no. 49).

activities gain in importance. These include hunting, agriculture, the commercial collection of rattan and other non-timber forest products, and paid farm labour.

Coast-dwelling Agta are among the most colourful of the three kinship networks. They abundantly decorate themselves with necklaces, bracelets and ear-adornments. Bead-necklaces (*manek*) are most extravagantly worn by adolescents in search of a spouse. Large numbers of bracelets woven from colourful cloth are worn by men and women of all ages. Along the Divilacan coast, some women also wear the *pinanés* around their upper arms. Men wear a different kind of decoration around the upper arm, called *biskal*. Women's earlobes are often adorned with flower-shaped cloth decorations (*subéng*). Men may wear wooden or plastic decorations pierced through their ear-lobes. Some adults and elderly people scarify their arms, chest or breasts. These scarifications (*padit*) are said to be made with glass by close family members. Their meaning remains unclear (see also Worcester 1912:838).

Dimasalansan

The case of the Dimasalansan Agta runs throughout this dissertation as an example of one such coast-dwelling residential group. They settle along the Divilacan coast at a peninsula that stretches around 10 km southward from Dimasalansan. Their most favoured settlement sites are Honeymoon Island, Dimasalansan, Kabiritbitan, Makahoyag, Dialinawan nga Dakkel and Makengaden (settlements no. 39-44 in map 2.2). Interestingly, Honeymoon Island and Dimasalansan became suitable for long-term settlement only after the arrival of non-Agta settlers in the 1960s. They dug deep wells from which the Agta also extract water. Before that, the Agta did visit these places for fishing during the day, but staying overnight was impossible.

At its maximum size, the Dimasalansan residential group numbers around 100 people, living in some 25 households. These households are part of three main extended families. Only seven households were consistently present at or near Dimasalansan during the study period. All others resided elsewhere along the Isabela coast part of the time.

Nearly all Dimasalansan Agta originate from and are married to Agta from other coastal settlements. In a sample of 50 adults, who together form 25 married couples, 76% originate from coastal settlements, while 20% originate from a river-mouth settlement at or near the coast. Only two young individuals (4%) come from riverine areas in San Mariano. This means that 96% of all Dimasalansan Agta have married within the coast-dwelling Agta kinship network. Further noteworthy is that while two of them found their spouses as far as Casiguran, all other marriage partners came from nearby Divilacan and Palanan.

Like other coast-dwelling residential groups the Dimasalansan Agta mainly depend on marine fisheries for their subsistence. Time allocation and nutrition records collected during three observation periods in 2005 underscore its importance (table 2.11). Dimasalansan men were out fishing 36% of their time and women nearly 17%. Moreover, two-thirds of all meals consumed contained self-caught fish, which is much more than is the case among the two river-dwelling residential groups. Also, the amount of fish consumed only comprised about 45% of all fish caught. The remaining 55% was traded with nearby fisher folk and farmers.

Table 2.11 Absolute and relative time investment by the coast-dwelling Dimasalansan Agta in 2005

	Male (28 individuals)		Female (37 individuals)	
	PWD ¹ (n=225)	%	PWD (n=315)	%
Domestic activities and child care	7.0	3.1	68.0	21.6
Hunting	1.0	0.4	0.0	0.0
Fishing	81.0	36.0	53.0	16.8
Subsistence gathering	1.0	0.4	4.0	1.3
Commercial gathering	32.0	14.2	40.0	12.7
Agriculture	19.0	8.3	9.0	2.9
Paid farm labour	5.5.0	2.4	3.5	1.1
Trade and credit	10.0	4.4	6.5	2.1
Manufacture	6.0	2.7	18.5	5.9
Non-work	52.5	23.3	112.0	35.6
Other	10.0	4.4	0.5	0.2
Total	225.0	100.0	315.0	100.0

¹ Person Work Days, see the Appendix for methodological details.

In addition to fishing, the commercial collection of rattan and scrap-metal forms an important source of livelihood for both men and women. Time spent in agriculture is limited and no formal land ownership rights are held. Nonetheless, the root crops planted on small swiddens behind the beach front provide an important source of food, especially during the lean rainy months. In as far as the Dimasalansan Agta engage in paid farm labour, this is mostly limited to the wet season. Women often generate additional household income by selling hand-woven mats and baskets to nearby farmers.

In contrast to fishing, hunting is of almost negligible importance to the Dimasalansan Agta. Most hunting activity is limited to the rainy season and involves trapping, rather than stalking. Coast-dwelling Agta in general say that the importance of hunting has much decreased over the past three decades. They attribute this to dwindling wildlife stocks as a consequence of logging and mining operations and increased hunting intensity by immigrant communities.

The stretch of coast that the Dimasalansan Agta regard as their home is sparsely populated. The nearest non-Agta village centre, Dibigo, has a population of just over 200 people. In addition to the village population, a handful of non-Agta households live along the peninsula the Dimasalansan Agta inhabit. All of these people are immigrants who arrived in the area from the provinces of Cagayan and Ilocos around the 1960s. They came to work in the several logging and mining concessions that operated in Divilacan at the time.

The Dimasalansan Agta frequently visit the village of Dibigo. Since several years they have access to outrigger boats, some of which are motorized. These boats have been dispersed through government- and non-government programs and allow travel from Dimasalansan to Dibigo in about 15 minutes. Visits to the village centre take place mainly for trading purposes. During the time of research three children

(irregularly) went to elementary school in Dibigo. Relations with the village people are generally friendly, although the Dimasalansan Agta at times feel neglected or even discriminated by the village administration. There have been cases in which they were excluded from the distribution of emergency goods after a typhoon. Others claim they have had to work for receiving such goods while non-Agta villagers got them for free.

Relations with the handful of non-Agta living along the Dimasalansan peninsula are more intimate and often have a long history. Agta women and children drop by almost daily to exchange their fishing catch for rice. When natural water sources dry up during the summer months, they come to get water from a well. Men may visit to ask if they can borrow fishing nets and return later to share part of the catch. At night, adults and children regularly assemble at the village councillor's house at Dimasalansan to watch television.

The northern river-dwelling Agta

In contrast to coast-dwelling Agta, who are mainly oriented towards the sea for both settlement and subsistence, river-dwelling Agta settle in the interior along rivers and creeks. Their livelihood package consists of fresh water fishing, hunting and a number of other land-based activities. Not all river-dwelling Agta freely move between watersheds throughout the mountain range. Instead, within the Northern Sierra Madre Natural Park, the river-dwelling population divides into a northern and a southern kinship network. These two groups inhabit adjacent domains that stretch in east-west direction across the mountain range.

The northern kinship network numbers some 220 people inhabiting six main river valleys in the municipalities of Ilagan, San Pablo, Tumauni and Maconacon. North of Maconacon their domain extends into Cagayan province, which falls outside the study area. Each river valley is occupied by one core residential group, but with kinship connections extending between the various watersheds, movement between them is frequent and unproblematic. However, the northern river-dwelling Agta's kin connections do not reach south beyond Abuan river (Ilagan). Moreover, the Agta dialect changes beyond this invisible boundary. Here, one enters the domain of what I call the southern river-dwelling Agta (see below).

As along the coast, mobility is greatest during the dry season. Many households stay in lean-to dwellings right at the river. Visits to relatives are regularly made, sometimes as far as across the mountain range. Shorter trips to upriver locations are frequently undertaken in order to fish, hunt or gather forest products. Sometimes the entire household participates in such trips, while in other cases women and children stay behind in the main camp. Fishing is done by all family members and is even more capital extensive than it is along the coast. The main aide is a spear, while nets are rarely used. Fishing is complemented with a number of other livelihood activities depending on the location. Among Agta residing in the western mountain interior, the main income generating activity is non-corporate logging. In addition, hunting and swidden cultivation are important. Wild fish, meat and timber are regularly exchanged for rice and consumer goods

with incoming loggers and downstream buyers. In the eastern watersheds Agta mainly engage in commercial rattan gathering, hunting, permanent agriculture and paid farm labour.

During the rainy season, conditions for travel are unfavourable and mobility decreases. Households retreat in more solid dwellings further away from the river to get some protection from rain, wind and flood. Fishing gets much more difficult or even impossible. Rivers swell to dangerous heights and strengths and become so turbid that underwater visibility diminishes. Thus, fishing activity is much reduced during the rainy months. In contrast, hunting conditions are better than they are during the dry season as tracks are more easily followed and game less quickly smells and hears hunters in the damp forest. Hunting activity therefore increases. Women more intensively engage in the digging of wild yams. Swidden land planted with upland rice and root crops is usually harvested during these lean months. Agta groups involved in permanent rice cultivation harvest their rainy season cropping. Paid farm labour is regularly engaged in by those residing in the eastern watersheds while this is rarely the case in the western mountain interior. Rattan gathering gains in intensity during the rainy season, especially in most eastern watersheds. Logging activity is reduced as the rivers, which serve as timber transportation routes, are often unsafe.

The northern river-dwelling Agta decorate their bodies much less abundantly than both other kinship networks. Necklaces, bracelets or ear-decorations are rarely worn and scar tattoos seem absent. The only form of adornment are the earlier mentioned armbands (*biskal*), but these too are less extravagant than those observed elsewhere, consisting only of black *nito* (*Lygodium circinnatum*) and an unidentified yellow fibre called *kalensawan*. More than elsewhere, however, the bow and arrow serve as an identity marker. Men carry these with them wherever they go, whether undertaking a hunting trip or visiting the village. Aside from practical and security reasons, many informants say they do this to show that they are Agta.

Diangu

As an example of a northern river-dwelling residential group the case of the Diangu Agta was chosen. They live in the municipality of Maconacon, some 2 km inland from the Pacific coast, along Diangu River. They settle at altitudes of around 100 m above sea level on flat, open brush land, where they tend permanent rice fields. Unlike most other river-dwelling groups, they rarely build lean-to dwellings, but mainly live in bamboo and wooden huts. Their settlements are bounded by secondary forest to the north, west and south. To the east, a 15 minute walk through brush- and farmland leads to the village centre of Sta. Marina.

Despite their proximity to the sea, the Diangu Agta never reside there and rarely exploit marine resources. Instead, they move between various settlements along either side of Diangu river. The most important of these are Dibulo and Diangu (settlements no. 24-25 on map 2.2) which are situated at 15 minutes walking distance from each other. In addition, several households regularly move across the mountain range to western watersheds in the municipalities of San Pablo, Tumauni and Ilagan. From Diangu, it takes about four days of travel on foot to reach these. Closer by, related households from Blos, the next watershed to the south

(settlements no. 26-29), and Likiden, the next watershed to the north (which falls outside the study area) regularly move in and out of the Diangu residential group.

As map 2.2 shows, the Diangu Agta's settlement sites fall just outside the boundaries of the Northern Sierra Madre Natural Park. So why present their case here? First, there is some disagreement locally as to whether or not *barangay* Sta. Marina, of which the Diangu Agta are part, falls within the park's buffer zone. Second, even if this were not the case, most of the resources they use are obtained from within the park boundaries. Third, the Diangu Agta regularly move to watersheds to the south and the west, which are situated within the park. Last, as Chapter V shows, the Diangu group provides an interesting case of the Agta's adoption of permanent rice cultivation.

At its full size, the Diangu residential group numbers around 60 individuals, living in 14 closely related households. Together they form two extended families. Most of these households were consistently present in one of the main settlements sites during the research period. Three households regularly moved back and forth between the Diangu and Blos watersheds, while another four periodically stayed in watersheds across the mountain range. Shorter visits were made to relatives in watersheds further to the north in Cagayan Province.

The Diangu Agta consistently chose their marriage partners from within the northern river-dwelling domain. In a sample of 30 living adults belonging to 15 married couples, 100% originate from one of the watersheds within this domain. Nearly half of them originate from the Diangu watershed itself. None of these married other Agta originating from Diangu. Instead, half chose marriage partners from the farthest possible watershed to the south, Abuan. Most remaining marriage partners originate either from the adjacent watersheds across the mountain range, or from one of the next watersheds to the north. No marriages took place with Agta south of Abuan river (Ilagan) and therefore hardly any kinship ties exist beyond that point.

The Diangu residential group follows a livelihood system that mainly consists of paid farm labour, permanent agriculture, hunting and fishing (table 2.12). Diangu men and women spend over 20% of their time in paid farm labour, while considerably less time is spent on their own fields. Nonetheless, they succeed in generating two irrigated rice harvests from their land each year. At the same time, fishing and hunting remain important. As mentioned, fishing activity is most intensive during the dry season, and is done by both men and women. Hunting, which is exclusively a male activity, gets more emphasis when the rains come. Women are mainly responsible for acquiring credit and trading meat, fish and other products in the village centre.

When visiting adjacent watersheds households tend to conduct other livelihood activities. For instance, those moving to the watersheds to the south regularly engage in the commercial gathering of rattan and the collection of scrap metal. For households that periodically reside in watersheds across the mountain range, non-corporate, illegal logging is important.

Table 2.12 Absolute and relative time investment by the river-dwelling Diangu Agta in 2004-2005

	Male (25 individuals)		Female (22 individuals)	
	PWD (n= 355)	%	PWD (n=318)	%
Domestic activities and child care	44.5	12.5	131.0	41.2
Hunting	31.5	8.9	0.0	0.0
Fishing	15.5	4.4	14.0	4.4
Subsistence gathering	11.0	3.1	8.0	2.5
Agriculture	40.5	11.4	15.5	4.9
Paid farm labour	80.5	22.7	69.5	21.9
Trade and credit	6.0	1.7	14.0	4.4
Manufacture	5.0	1.4	2.0	0.6
Non-work	120.5	33.9	63.0	19.8
Other	0.0	0.0	1.0	0.3
Total	355.0	100.0	318.0	100.0

Until the 1960s, other than the Agta hardly anyone inhabited the Diangu valley. This situation changed with the arrival of logging companies and their employees. The immigrant population founded *barangay* Sta. Marina, which today numbers around 300 people. The Diangu Agta live at a short walking distance from this village centre and visit it on an almost daily basis to get groceries, inquire about farm labour opportunities, join in a drinking session or simply have a chat. Provided a teacher is present, several Agta children go to kindergarten in Sta. Marina, while one teenage boy goes to high school in Maconacon town. When there is pig or deer meat to sell, the Diangu Agta make their way to town as well. In the dry months, when the sea is calm, this is usually done by hitchhiking on a motorized outrigger boat. In the rainy months, it takes a day to reach Maconacon over land.

There are marital relations between the immigrant and Agta populations. Two Agta women who both originate from the Diangu watershed married non-Agta spouses. The first is a woman in her forties who married an Ilocano immigrant from Cagayan province after her Agta husband, with whom she has a grown son, passed away. They move back and forth between a dwelling in the Agta community and a house in the village centre. No children have been born out of this marriage. The second is a young woman in her twenties, herself a child of an Agta mother and Ilocano father, who married the son of Ilocano immigrants. They have three small children. This family permanently resides just outside the Agta community but is in frequent contact with them.

Relations between Agta and non-Agta in the Diangu watershed are relatively amiable. This is not to say that problems never arise. While conflicts over land ownership do occur, the Diangu Agta have been able to hold on to most of their original land. In general individuals from both groups feel at ease in each other's company. Agta comfortably walk in and out of village houses and Agta and non-Agta children regularly play together.

The southern river-dwelling Agta

When travelling south of Abuan River (settlements no. 4-6 in map 2.2) one abandons the domain of the northern river-dwelling Agta. From here it still takes a day's walk to reach Catalangan River (settlements no. 7-9), where one enters the southern river-dwelling Agta's domain. This large domain covers watersheds in San Mariano, Dinapigue, Divilacan and Palanan. Its total Agta population numbers about 850 individuals, who all identify with one or two main watersheds, depending on their own origin and their spouse's. In addition, they may move to adjacent watersheds within the domain.

Southern river-dwelling Agta say they speak a different language than the Agta from Abuan River and beyond. Rai (1990:64-5) has also found this linguistics divide and suggests that it is maintained because of limited interaction between groups on either side. Another noticeable cultural difference between northern and southern river-dwellers lies in people's body decorations. I mentioned earlier how little of such decorations are used by the northern river-dwellers. As soon as one enters the southern domain, however, armbands, necklaces and ear-adornments abound. Special emphasis is given to the decorations men wear around their upper-arms (*biskal*), which reflect a hunter's skills and may include the skin of a wild pig's forehead and its whiskers.⁵⁶

Like their northern neighbours, the southern river-dwelling Agta move between watersheds in both north-south and east-west direction. Again, mobility is highest during the dry season and tends to decrease during the wet months. Livelihood options differ depending on the time of the year and location. On both sides of the mountain range people engage in hunting, fishing, commercial rattan gathering and swidden agriculture. However, in the western watersheds many households also generate income from non-corporate, clandestine logging, while this rarely occurs in the eastern watersheds. There, people are more often engaged in permanent agriculture as well as paid farm labour. Thus, the livelihood packages among the southern and northern river-dwellers are largely similar. There are, however, a few noteworthy differences.

First, some of the southern river-dwellers generate income from working for logging companies. Dinapigue is the only location in the Northern Sierra Madre where corporate logging still continues. Until 2003, part of the concession area was situated within the protected area. In the renewed logging permits these areas have been excluded. For the Agta living in these logging concessions, timber companies are both a threat to hunting- and fishing livelihood as well as a source of alternative income. A second livelihood option that is available to the Agta from Dinapigue and the interior of Palanan is the collection of nests of edible nest swiftlets from caves in the mountain interior. Occasionally, Agta from other watersheds also travel to these areas to join in nest collection.

⁵⁶ Southern river-dwelling informants say that body decorations used to be more extravagant until one generation ago. For instance, unmarried men wore hornbill feathers on their head, as well as metal earrings, to indicate their single status. Decorations called *badbad* were worn just below the knee. All of these are indeed visible from antique plates such as those drawn by Mallat (1846). Northern river-dwellers deny to have worn such decorations.

Disabungan

The case of the Disabungan Agta serves as an example of a southern river-dwelling residential group. Unlike Dimasalansan and Diangu, Disabungan is situated on the western side of the mountain range, in the municipality of San Mariano. The Disabungan residential group settles right at the forest fringe, at an altitude of around 500 m. They live far away from non-Agta settlements. The nearest village centres, Del Pilar and Casala, each are a three-hour hike away. The Disabungan Agta are surrounded by heavily disturbed secondary forest which has been intensively logged until the early 1990s. Since then, clandestine timber extraction has replaced corporate logging. Thus, even though no non-Agta settle in the Disabungan watershed, many non-Agta loggers are present in the area on a daily basis.

The Disabungan Agta frequently move between two main settlement sites along Disabungan River: Digud and Dipili (settlements no. 15-16 in map 2.2). Digud is situated just outside the boundary of the Northern Sierra Madre Natural Park, while Dipili lies right at the outer edge of the protected area's buffer zone. Digud was clear-cut and turned into a log pond in the 1970s. At present, it is a brush land area inhabited and extensively cultivated by up to ten Agta households. In addition, Digud still serves as a log pond for illegal logging activities. From Digud, it takes half an hour on foot in upstream direction to reach Dipili. Dipili is a narrow stretch of logged-over river banks bounded by secondary forest. Up to around six Agta dwellings are lined up along these banks, with small swidden fields surrounding them. In both Digud and Dipili most households stay in lean-to dwellings right at the river's edge for as long as the dry season lasts. When the rains come, more permanent dwellings are constructed on higher grounds.

In addition to Digud and Dipili, part of the Disabungan residential group sometimes settles at Dimabigao (settlement no. 14). Also, several previous settlement sites in downstream direction, closer to the village of Del Pilar, are occasionally visited for shorter stays. The most important of these is Batag (settlement no. 13). Moreover, the Disabungan Agta are in regular contact with related groups from the neighbouring watersheds of Diguse to the south (settlements no. 18-19), Disulap and Catalangan to the north (settlements no. 7-9 and no. 10-12 respectively), and Dipagsanghan across the mountain range to the east (settlements no. 77-82).

The Disabungan residential group numbers up to around 60 individuals in 13 households, belonging to two main extended families. All in all, a number of 18 different nuclear households were encountered in the Disabungan watershed during the study period. All of these are related to each other either by blood or marriage.

As mentioned above, the Disabungan Agta are in regular contact with several neighbouring Agta groups. It is from within those groups that most marriage partners are chosen. Out of 28 adults who together formed 14 married couples, 46% originate from the Disabungan watershed itself. One fourth of the marriage partners originated from the next watershed to the south, 11% came from across the mountain range to the east, while 14% were from two watersheds to the north. Only one male spouse (4%) originated from outside the study area, Casiguran, which is south of Dinapigue in the province of Aurora. No Disabungan spouses originate

from watersheds north of Catalangan River, which forms the boundary between the northern- and southern- river-dwelling domains. Thus, again, the pattern shows a consistent choice of marriage partners from within what I call the southern river-dwelling Agta's domain.

Within the Disabungan Valley the main income generating activity, at least for men, is non-corporate, illegal logging (table 2.13). For women the commercial collection of rattan is much more important. Especially men often engage in fishing. This is despite the fact that catches are dwindling due to environmental disturbances directly and indirectly caused by logging. Hunting, which is exclusively done by men, is also affected by environmental disruption, but is nonetheless continued. Swidden cultivation is of modest significance and is mainly conducted by women, who spend considerable amounts of time tending fields. When residing in the neighbouring Diguse watershed in Dinapigue, the Disabungan Agta often take up wage labour activities in the corporate logging industry.

Table 2.13 Absolute and relative time investment by the river-dwelling Disabungan Agta in 2004-2005

	Male		Female	
	PWD (n= 225)	%	PWD (n=315)	%
Domestic activities and child care	12.5	8.6	38.0	27.9
Hunting	10.0	6.9	0.0	0.0
Fishing	11.0	7.6	3.5	2.6
Subsistence gathering	2.0	1.4	8.0	5.9
Commercial gathering	20.5	14.1	12.5	9.2
Logging	43.0	29.7	4.0	2.9
Agriculture	5.5	3.8	17.5	12.9
Trade and credit	9.0	6.2	16.0	11.8
Manufacture	13.0	8.9	0.0	0.0
Non-work	14.0	9.7	36.5	26.8
Other	4.5	3.1	0.0	0.0
Total	225.0	100.0	315.0	100.0

Much more so than the Dimasalansan and Diangu Agta's situation, the Disabungan Agta's past and present is dominated by large scale immigration, displacement and deforestation. The reason that the Disabungan Agta currently live at great distance from non-Agta settlements is not that there are few non-Agta around. On the contrary, the villages of Del Pilar and Casala each have populations of around 1,000 individuals (NSO 2000). These people are all migrants who arrived in various periods since the 1950s. Before their arrival, the Disabungan Agta used to settle where these migrant communities are presently situated. They maintained trade relations with the horticultural Kalinga as well as a hand-full of Ilocano pioneers. While some migrant settlements still retain their original Agta name, no Agta have lived there since the mid 1970s. Instead, as immigration and deforestation transformed their former settlement areas, they have increasingly retreated uphill and upstream to keep up with the forest fringe. As a consequence, they now settle at locations which used to be frequented during hunting and fishing trips only.

San Mariano is among the most heavily logged municipalities in the study area. Its lowland forest completely disappeared and was replaced with denuded hillsides and farmland. Even though corporate logging stopped in the early 1990s, non-corporate clandestine timber extraction takes place on a large scale. As the Disabungan Agta's settlements provide a gateway to the forest, they are therefore surrounded by non-Agta loggers every day of the year. Indeed, logging is so rampant that it negatively affects the Disabungan Agta's hunting and fishing returns. This is both the result of unsustainable logging itself, as well as of the destructive hunting and fishing methods employed by incoming loggers. As wild game no longer generates enough food and trade products to provide for a household's daily needs, alternatives have to be found. Ironically, for the Disabungan Agta, logging itself is the most viable option.

The Disabungan Agta are in almost daily contact with non-Agta loggers. Relations with these people range from amiable to outright hostile. Two Disabungan Agta women married Ilocano and Tagalog loggers respectively. Both married couples reside with the Agta community. As most trading is done with incoming loggers, the village centres of Del Pilar and Casala are not often visited. In fact, most Disabungan Agta avoid going there as much as possible, saying they 'cannot breathe down there'. On the rare occasions that Disabungan Agta do make it downhill, they feel visibly uncomfortable. There is little contact between the Agta and the villagers, and the latter look at the former with disregard. No Disabungan children are going to school in Del Pilar or Casala. Nonetheless, inter-marriage has occurred on two occasions. One Disabungan man and one woman (both children of an Agta mother and Ilocano father) are married to an Ilocano woman from Del Pilar and an Ifugao man from Casala respectively. These married couples stay in the villages of their non-Agta spouses, but are still in regular contact with the Agta community at Disabungan.

CONCLUSION

This chapter has provided an ethnographic introduction to the Agta of the Northern Sierra Madre Natural Park. I discussed the Agta's distinct demographic, socio-cultural, religious and economic characteristics. This distinctiveness does however not imply that the Agta live in static isolation from their non-Agta neighbours. Overlooking their history, it is clear that the Agta and their predecessors have faced external changes for thousands of years. They have been confronted with and have responded to outsiders ever since Austronesian farmers made their way to the inlands of Northeast Luzon. In general, the (proto-) Agta have been able to make use of the new opportunities that arose from these changes. Also, they responded to different waves of immigration by shifting to unexploited areas and adapting to new environments which were not inhabitable by farming populations (W. Scott 1994:256).

Especially over the past century, however, it has become harder to maintain control of the commercial hunting-gathering niche and the Agta's escape routes have become fewer. Retreating still further uphill and upstream is hardly possible. Thus, the effects of logging, mining and armed conflict now reach right at the

Agta's doorstep. In the words of Walker et al. (2004:2-3), panarchy is high: the Agta are greatly influenced by external forces; and precariousness is increasing: the Agta are pushed closer to the limits of their options. This has led anthropologists and others to raise alarm over the Agta's future as a distinct people. It was predicted that by this moment, both the Sierra Madre rain forest and the Agta would be gone. Fortunately, neither is the case.

Several factors contribute to the Agta's resilience in the face of rising environmental and social pressure. These are the interrelated factors of kinship structures, mobility and livelihood diversification. As access to natural resources is regulated through cognatic descent phrased groups, kin ties allow individuals to move between several watersheds and coastal areas, thus reducing vulnerability to resource pressure and social tension in one locality, by offsetting it with an escape possibility to other localities. As has also been pointed out for other hunter-gatherer groups (Davidson-Hunt and Berkes 2003:61-2), this simultaneously allows for diversification of income generating activities, which acts as a vulnerability reducing mechanism in itself. We will see more examples of this in succeeding chapters. These factors combined result in considerable latitude and resistance (Walker et al. 2004:2-3). That is, the amount of change the Agta can digest without losing their core identity is high.

And yet there still is much ground for concern. Agta mortality levels, especially among children, are extremely high due to poor health and nutrition. As a result, almost all Agta parents are confronted with the death of one or more of their children, nearly every Agta experiences the loss of a sibling, and many children grow up without either or both of their parents. While the psychological impact of this high mortality has not yet been researched, Early and Headland (1998:129-131) suggest that it may explain for several of the characteristics of Agta society that were described in this chapter. One is the great affection that marks parents' treatment of children. Another is the unusual high importance of kinship. As the continuity of the nuclear family is uncertain, dependence on relatives to take over the responsibility once death occurs is great.

As a result of high mortality the Agta population hardly grows. Moreover, relative to the rapidly growing non-Agta population it actually decreases. This means that Agta and non-Agta are increasingly in competition over land and natural resources. As is to be expected, such competition is most clearly felt in areas where the imbalance between both populations is greatest. The different situations of the three Agta residential groups that were introduced in this chapter (the coast-dwelling Dimasalansan Agta, and the river-dwelling Diangu and Disabungan Agta) already gave an impression of this variability. The following chapters will provide more detail on how resource pressure varies per area and how this likewise results in different relations between Agta and non-Agta.

This chapter also addressed another form of variability, namely internal variability. Despite various common socio-cultural characteristics, I argued that the Agta's homogeneity should not be overestimated. Agta operate within relatively bounded domains, the outer limits of which are defined by kinship relations. It is mainly within these domains that Agta marry, move and make a living. Within the research area I distinguish three such social entities: one coastal- and two river-dwelling networks (a northern and a southern network). As we will see in the

remaining chapters, the existence of these internal divisions is of importance in understanding how natural resource use is organized and livelihood options are defined. Moreover, the current challenges the Agta face in terms of resource pressure and resource management cannot be dealt with without taking such internal divisions into account.

III. HUNTING, FISHING AND GATHERING

INTRODUCTION

Hunter-gatherers inhabiting equatorial forests are thought to have historically emphasized gathering and fishing over hunting (Lee 1968:41-2; Hayden 1981:357, 418; Kuhn and Stiner 2001:101-7; Jenike 2001:209). For the Agta the situation may have been the reverse. As explained before, prior to the arrival of Austronesian peoples some 4,000 years ago, the proto-Agta probably lived in a savannah like landscape in which gathering indeed was a main subsistence activity. With the expansion of agricultural populations on these savannas, however, the Agta shifted toward exploitation of tropical rain forests. These forests, it has been hypothesized, are too poor in carbohydrate foods to sustain hunter-gatherer populations year-through without reliance on cultivated plant foods. Moreover, many of the available wild plant resources are not immediately ready for use as they are toxic and require lengthy processing. In this scenario, by establishing trade relations with farming populations, the Agta would have decreasingly relied on wild plant products obtained through gathering in favour of cultivated plant foods obtained through exchange. Thus, gathering was deemphasized, while hunting and the trade of animal protein gained in importance (Headland 1987a; see also Rai 1982:90).

Trade being an integral part of their economic system (Headland and Reid 1989:45-6, Rai 1982:153-4), the Agta are referred to as 'commercial hunter-gatherers' (Headland 1986; Hayden 1981:346). This useful term should however not be taken to mean that the Agta follow a highly capitalized production system. On the contrary, even where Agta produce forest and marine products for a market, resource extraction strategies are generally capital extensive and small in scale. Most trade still takes the form of barter, in which forest and marine products are exchanged for food products (mainly rice, tobacco, coffee and sugar) and other commodities, rather than money. Nonetheless, a subtle distinction can be made between two types of trade. Following Giebels (2005:68-9) I would like to distinguish between supply-driven and demand-driven trade. In the case of supply-driven trade, Agta set out hunting, fishing or gathering to satisfy household needs. If the trip is successful, part of the foraged produce may be traded with local buyers. This differs from demand-driven trade, in which Agta hunters specifically set out on a foraging trip to generate a certain amount of fish or meat. Demand-driven trade is often associated with different and more intensive resource extraction methods than supply-driven trade. Hunters and fishermen may borrow hunting and fishing gear from the eventual buyers. These are tools which they generally do not possess themselves, such as shotguns or large fishing nets.

In this chapter I will describe and discuss the relative importance of the Agta's hunting, fishing and gathering activities. Other than Rai (1982:153) who calls trade a non-foraging strategy, I consider it to be an integral part of the Agta's foraging system and will treat it as such. While there has been much previous ethnographic interest in the Agta's hunting practices (see P. Griffin and M. Griffin 2000; Estioko-Griffin and P. Griffin 1981b; Estioko-Griffin 1985), fishing in general, and marine fishing in

particular, has received much less attention (Minter, Goslinga and Persoon 2007; Doornbos 2008). I will therefore separately discuss the Agta's fishing strategies. In as far as this is possible I will compare my own data with previously collected data in order to gain insight in historical changes in the Agta's foraging behaviour.

HUNTING

Rai (1982:80) has called hunting the Agta's most elaborate, formalized and ritualized domain. Here I will give an ethnographic account of Agta hunting practices. The most important questions that I will deal with are first, who among the Agta of the Northern Sierra Madre Natural Park are involved in hunting today? Second, how much time is invested in hunting relative to other activities and what are the rates of return? Third, what are the main hunting tools and strategies applied by Agta hunters? Fourth, what is the relative importance of hunting for the Agta diet and for trade? And last, how have these hunting patterns changed over the past twenty-five years? With respect to descriptions of who the Agta hunters of the Northern Sierra Madre Natural Park are and what hunting tools they use I draw on data gathered from among Agta in the entire protected area. In addressing the other questions I mainly use data from the Disabungan, Diangu and Dimasalansan residential groups.

Game animals and hunting grounds

Game animals and animals in general, take a central place in Agta life. They are the subject of much daily conversation and stories on encounters with (dangerous) game, as well as animal tales are told and retold over campfires at night (box 3.1). The Agta's most preferred game animals are Philippine warty pig (*Sus philippinensis*) and Philippine brown deer (*Cervus mariannus*). While Agta hunters consistently say that pigs are still found throughout the NSMNP, deer is said to have almost disappeared from the coastal areas of Palanan and Dinapigue.

Long tailed macaque (*Macaca fascicularis*),⁵⁷ water monitor lizard (*Varanus salvator*) and Gray's monitor lizard (*Varanus olivaceus*) are also highly valued but are less often obtained. The Rufous Hornbill (*Buceros hydrocorax*), Tarictic Hornbill (*Penelopides panini*), Red Jungle Fowl (*Gallus gallus*) and various pigeon and dove species are regularly caught but generate less meat. Jungle Fowl are occasionally crossbred with domestic chickens as this is said to make the poultry stronger. Children regularly shoot smaller birds with catapults in and around the camp as a source of entertainment, at times resulting in a welcome snack. Common palm civet (*Paradoxurus hermaphroditus*), Malay civet (*Viverra zibetha*), various fruit bat species and python (*Python reticulatus*) are popular but rarely obtained game animals (see also Rai 1982:81-2; P. Griffin and M. Griffin 2000:327). With the possible exception of the Philippine crocodile (*Crocodylus mindorensis*), which is a freshwater

⁵⁷ Macaques are incidentally caught alive when they get stuck in snare traps. These are then often kept as pets for children to play with.

species, and the Estuarine crocodile (*Crocodylus porosus*),⁵⁸ the Agta deny having any taboos on killing or eating certain wild animals.

Agta hunt in secondary and primary forest, usually below 500 m. above sea level. As the forest fringe has considerably shifted in the past decades due to logging operations, so have the Agta's hunting grounds. While they used to hunt mainly in lowland forests, with the disappearance of these forests, Agta are now forced to increasingly move upstream and uphill to obtain game. This is especially the case on the mountain range's western side, where deforestation has been most drastic.

The hunting radius of each residential group is largely limited to the streambed of one major river and its tributaries, extending upstream from the camp (see also Rai 1982:81). For coast-dwelling hunters the stretch of coastal woodlands, which often include swidden fields, is also included. Although a hunter may get permission to enter the hunting range of neighbouring residential groups, he is most familiar with his watershed of origin and the watershed of his spouse. Within this range, hunters' geographical knowledge is detailed and explicit. Each creek's stream bed carries a different name which captures the stream bed itself and the adjacent slopes. The top of a ridge thus forms the boundary between two different geographical areas. This is visible from maps and photos 3.1 to 3.3 and table 3.1 which show the Disabungan, Diangu and Dimasalansan Agta's hunting grounds. Agta allow hunting everywhere, except on and immediately around burial grounds. Among river-dwelling groups these are spread out on hillsides throughout the home watershed, while coast-dwelling groups usually bury their dead behind the beach. As explained in Chapter II, among river-dwelling groups temporary taboo areas arise when a *gaygay* or *banteng* is installed following the death of a camp member.

All hunting locations are situated within a day's reach from an Agta camp (not beyond an estimated 10 km radius), but hunters do not necessarily go that far. The choice of hunting grounds depends on the season, the relative game abundance of each area and the amount of time a hunter can afford to be away from home. River-dwelling hunters indicate that the deeper they go into the forest, the better their chances are to obtain large game.

Table 3.1 indeed confirms that for the river-dwelling Disabungan and Diangu Agta hunting is most successful in the least disturbed, and therefore relatively remote, areas. Nearby hunting trips generally only result in minor game. For the Disabungan Agta, Mahagit, which so far falls just outside the scope of loggers' reach, was both the most often visited and the most productive hunting ground. It generated 43% of all game. The still remoter and therefore less often visited site of Tambale, was almost equally productive: 40% of the catch came from this location. Diangu hunters were most successful in the remote areas of Magpinagong and Uli, where 49% and 47% of the catch was respectively obtained. Table 3.1 also shows, however, that the situation is different among the coast-dwelling Dimasalansan Agta. Even though their hunting range stretches upstream along Dikadisan, Dibolos and Dimallang rivers (map 3.3), all

⁵⁸ Information on this aspect is ambivalent. While P. Griffin and M. Griffin (2000:327) suggest that Agta occasionally kill and eat crocodiles, several of my own informants say their ancestors have prohibited the hunting and eating of crocodiles. Certainly the crocodile holds special value to the Agta, invoking a combination of respect and fear. Several Agta folktales centre on human-crocodile partnerships. Moreover, many Agta believe that killing a crocodile will always be revenged by the crocodile (van der Ploeg, van Weerd and Persoon forthcoming)

hunting trips in the Dimasalansan hunting record⁵⁹ took place relatively close behind the beach, often in the vicinity of agricultural areas.

This brings us to the ‘edge effect’ debate, which centres on the question of whether or not agricultural expansion benefits hunting. J. Peterson (1977a, b; 1981; 1982) has argued that the Agta’s most preferred hunting areas are located on the peripheries of agricultural areas and in ecotones: the edges between forest and fields, or forest and grassland. Other hunter-gatherer populations, such as the Kubu, are indeed known to engage in ‘garden hunting’ (Persoon 1989:511). This is in line with Linares’ argument that swidden cultivation positively affects game animals’ biomass, especially when they feed on cultivated root crops, and thereby benefits hunting returns so much that garden hunting may actually serve as a substitute for animal domestication (Linares 1976:332). In contrast, P. Griffin and M. Griffin (2000:330) as well as Rai (1990:101) maintain that the Agta in general hunt away from agricultural areas. My own data largely confirm this observation.

Table 3.1 Hunting grounds and hunting success rates in three Agta Residential groups 2004-2005

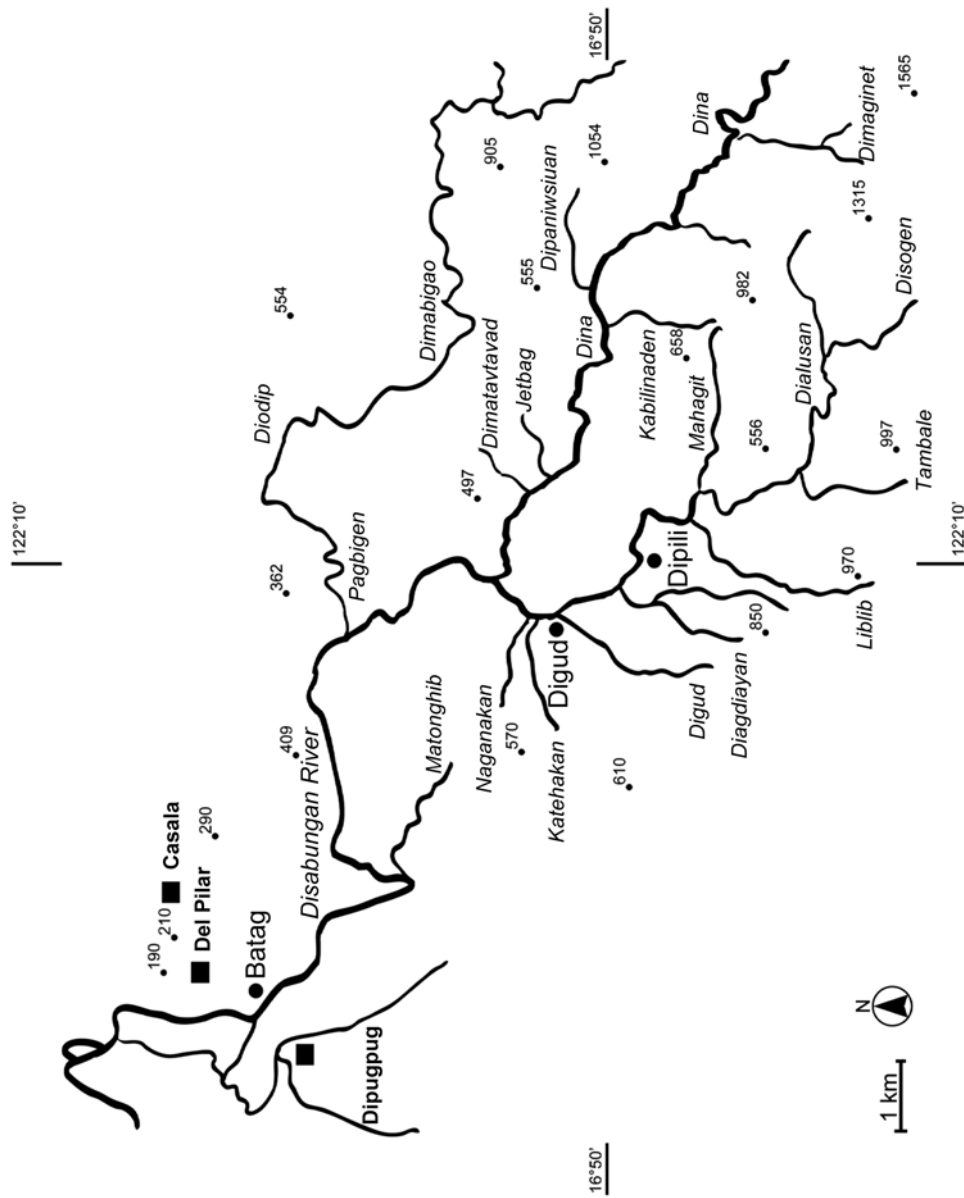
Hunting ground	Hunting trips		Success rate		Kg of meat	
	F	%	F	%	F	%
Disabungan	24	100.0	7	100.0	125	100.0
Mahagit	6	25.0	3	50.0	54	43.2
Tambale	2	8.3	2	100.0	50	40.0
Liblib	6	25.0	1	17.0	20.5	16.4
Dipili	6	25.0	1	17.0	0.5	0.4
Jetbag	2	8.3	-	-	-	-
Dimabigao	1	4.2	-	-	-	-
Nesalditan	1	4.2	-	-	-	-
Diangu	30	100.0	9	100.0	165	100.0
Magpinagong	4	13.3	3	33.3	81	49.1
Uli	5	16.7	2	22.2	78	47.3
Banuang	2	6.7	1	11.0	5	3.0
Diangu	5	16.7	3	33.3	1	0.6
Dibulo	4	13.3	-	-	-	-
Manopol	4	13.3	-	-	-	-
Kabihan	3	10.0	-	-	-	-
Tahitahikan	2	6.7	-	-	-	-
Pagsanghan	1	3.3	-	-	-	-
Dimasalansan	8	100.0	2	100	34	100
Makengadin	2	25.0	1	50.0	33	97.0
Kaberitbitan	5	62.5	1	50.0	1	3.0
Dimasalansan	1	12.5	-	-	-	-

⁵⁹ Note the small sample size and the fact that the record only contains hunts undertaken in the months of January, February, March and July 2005. At the height of the rainy season, when most hunting is done, hunting trips are said to be undertaken upriver in the forest interior.

Box 3.1 'Why Amtik (the red ant) is sexy.' A tale told by Mr. Bawe Donato.

Featuring: Amtik (red ant), Pegpekao (Button Quail), Bulayo (Philippine Eagle Owl) and Ogsa (Philippine deer)

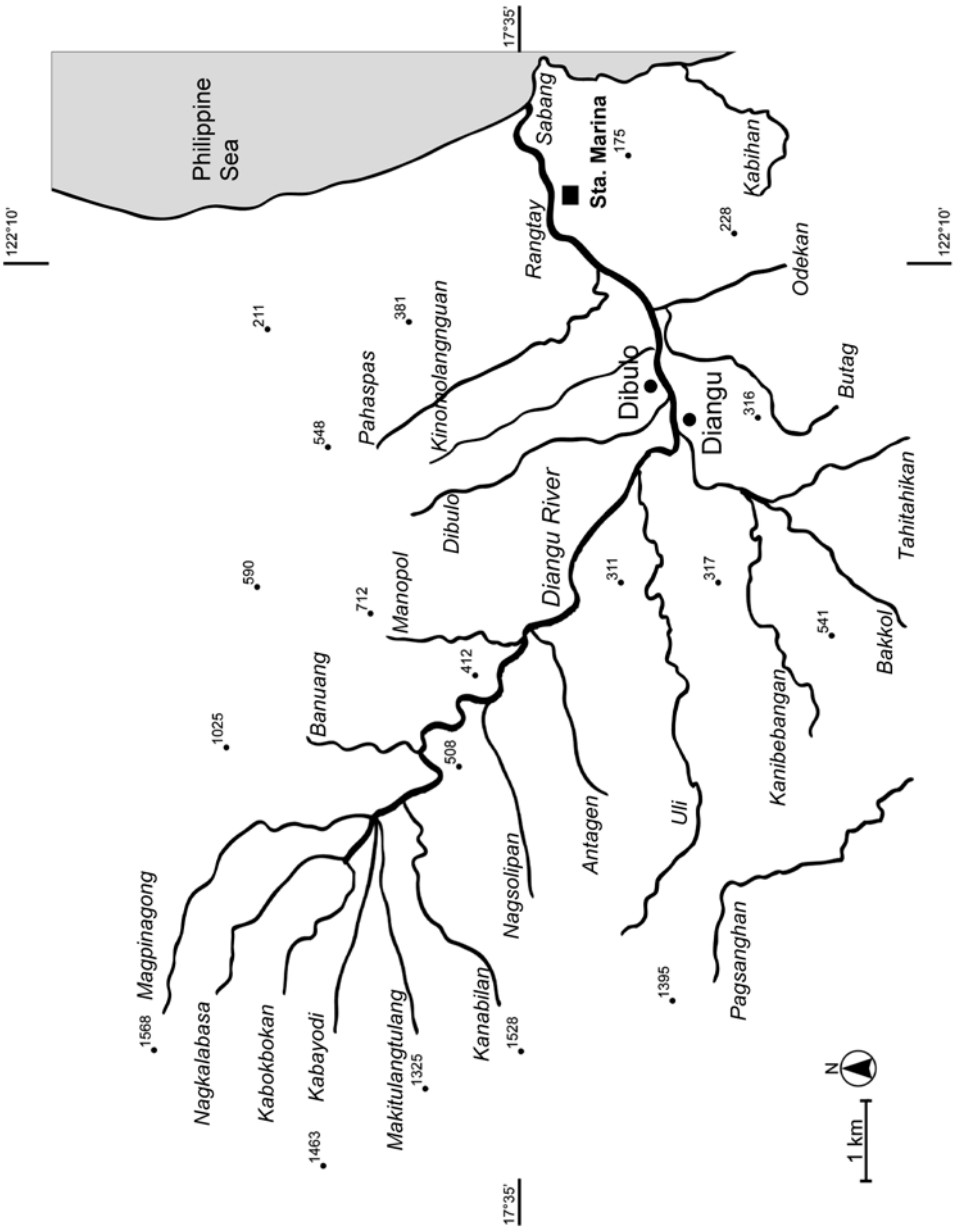
Pegpekao was laying eggs on the forest floor next to a big tree. Ogsa was standing at the foot of the tree. In the tree was a big hole with red ants inside. Bulayo was sitting in the tree top, looking down on the forest. Amtik was climbing up the tree from the hole. While going up he smelled something very bad. It was Bulayo releasing waste from his bottom. Amtik decided to climb up the tree anyway and bit Bulayo in the bottom. In pain, Bulayo let out a loud squeak. Ogsa, down at the tree, was so scared by Bulayo's yell that he ran into the forest. In his flight, he did not see Pegpekao's nest and accidentally trampled all the eggs inside. Pegpekao got very angry and called Bulayo and Amtik to explain to her what happened. Bulayo told the other two that it was Ogsa who trampled the eggs, defending himself saying: I yelled because I was bitten in the back by Amtik. Pegpekao said: 'Why did you bite Bulayo in the back Amtik?' Amtik answered: 'That is because Bulayo shitted down the tree!' They decided that Bulayo would search for Ogsa because from high above it is easy for him to spot Ogsa in the forest. Bulayo found him and they continued the meeting with the four of them. Pegpekao asked: 'Why did you trample my eggs?' Ogsa answered that he did not even know he had trampled them and was fleeing because he heard Bulayo squeaking so loudly. Pegpekao asked: 'Who should I blame for trampling my eggs?' Then Bulayo, Ogsa and Pegpekao together agreed that it should be Amtik, because he is the one who caused Bulayo to squeak. They punished Amtik by strapping his waist with a string of rattan, which is why all red ants have a sexy waist ...



Map 3.1 Disabungan hunting and fishing grounds



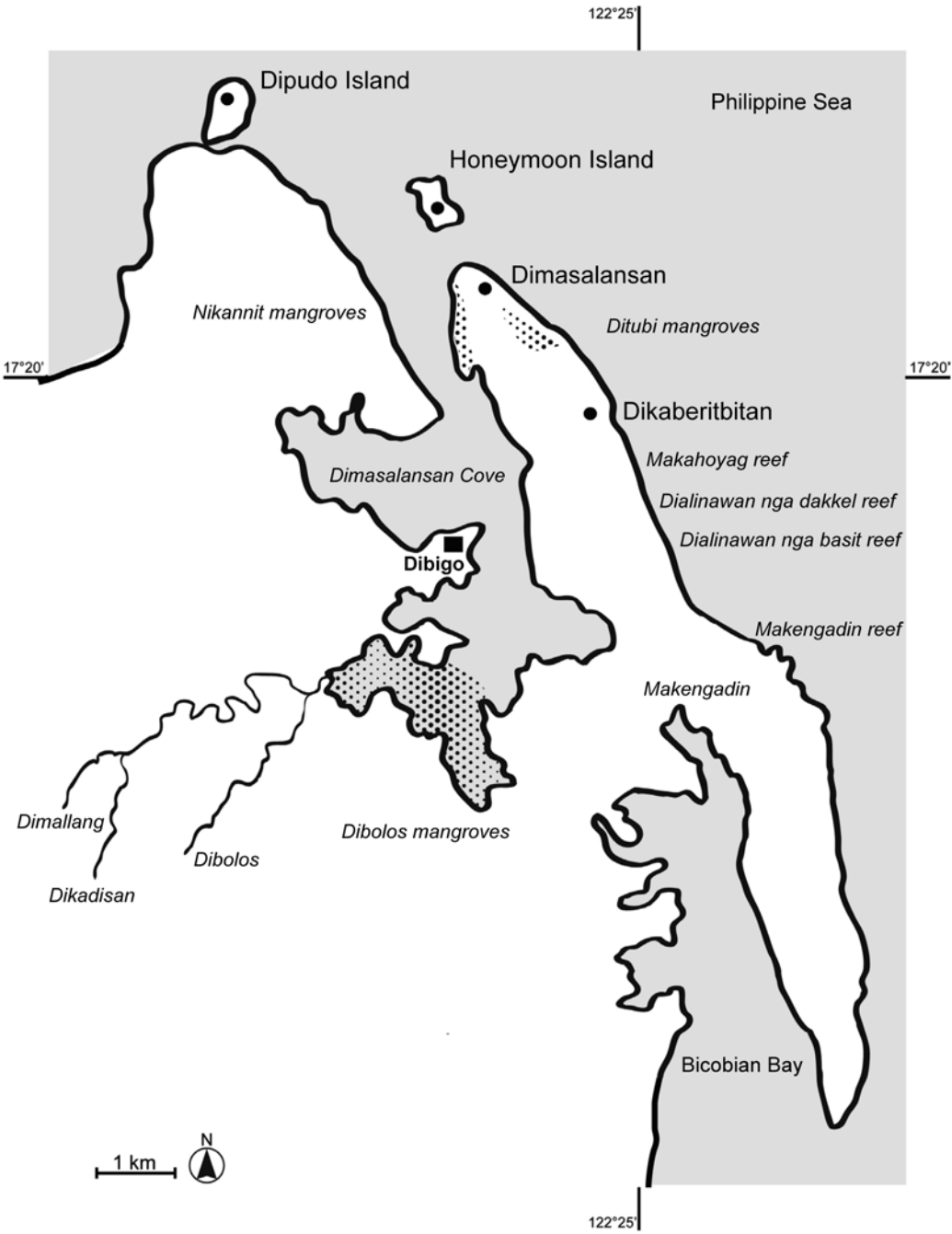
Photo 3.1 Disabungan watershed, January 2005



Map 3.2 Diangu hunting and fishing grounds



Photo 3.2 Diangu watershed, October 2004



Map 3.3 Dimasalansan fishing and hunting grounds

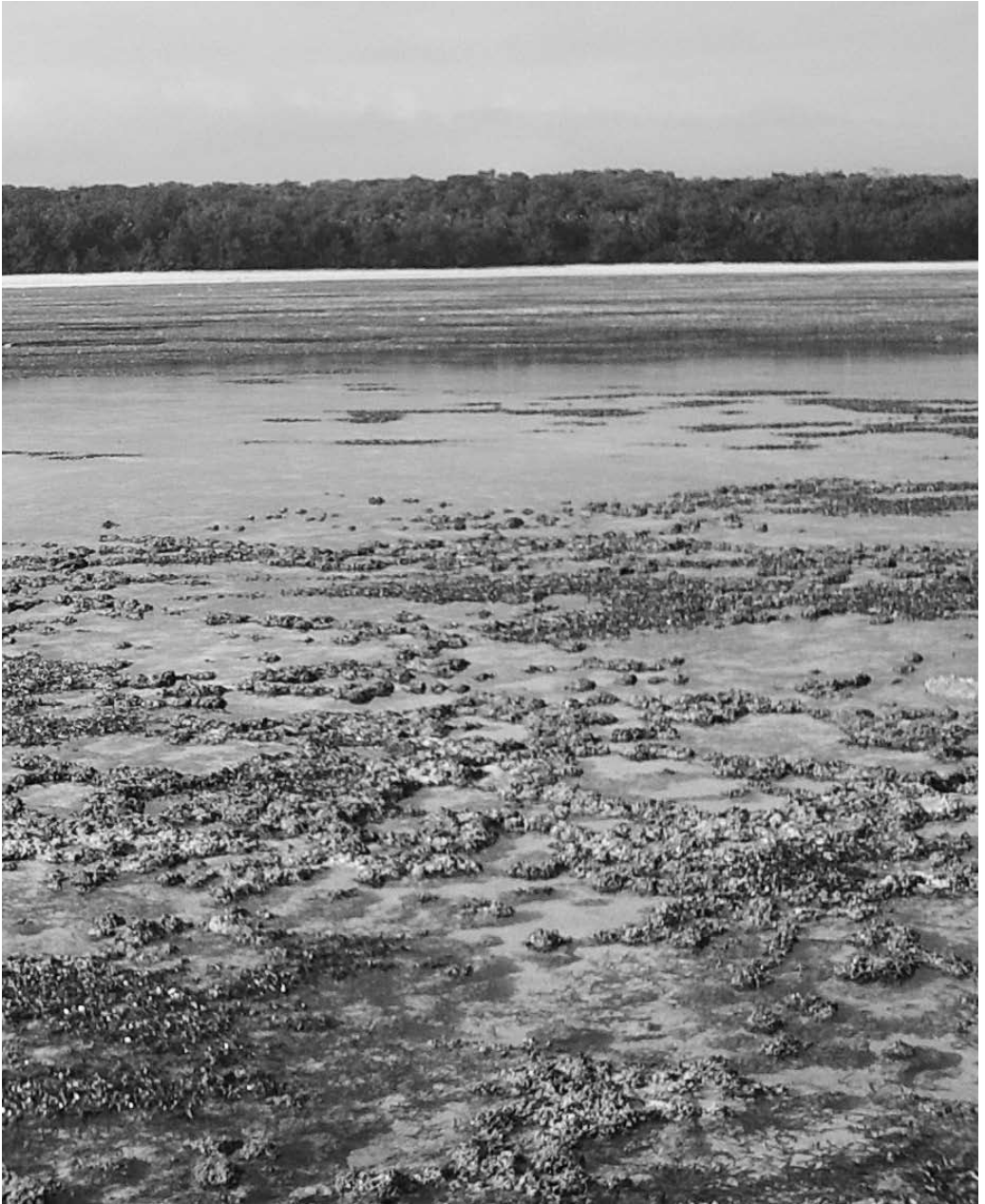


Photo 3.3 Dimasalanan reef and beach, December 2004

Agta hunters

Good hunters are highly valued (photo 3.4). Especially river-dwelling Agta women say they preferably marry a man who is a skilled hunter. Indeed, Headland (1986:321) observed that Agta refer to hunting as their *pagkaagta*, or the characteristic that makes them Agta.⁶⁰ A hunter may publicly display his skills by hanging wild pig mandibles in front of his hut. Also, he may wear the skin of a wild pig's forehead around the upper arm as a bracelet (*biskal*), provided that he was the killer of the game. Not all Agta are active hunters however. Hunting involvement sharply differs between river-dwelling and coast-dwelling residential groups. The former, usually staying right at the forest fringe or in the forest interior, are without exception active hunting communities. The latter, if they are involved in hunting at all, largely limit their hunting activities to the wet season, while they primarily focus on fishing during the dry season. Of 134 households that were interviewed on their involvement in hunting, nearly 90% are active hunters. Of the non-hunting households, half were coast-dwellers who indicated that fishing was a much more lucrative activity than hunting. Most of the remaining non-hunting respondents were river-dwellers who were either disabled as a result of previous hunting accidents or were too old for hunting (table 3.2).

Table 3.2 Agta households involved in hunting (n=134)

	Hunting		Non-Hunting	
	F	%	F	%
River-dwelling households	85	71.4	8	53.3
Coast-dwelling households	34	28.6	7	46.7
Total	119	100.0	15	100.0

Within residential groups differences in hunting involvement are most evident along gender lines. The observation that women in Agta populations in the Diangu and Dipagsanghan watersheds were active hunters (Estioko-Griffin and P. Griffin 1981b) provided an inspiring challenge to the 'Man the Hunter' paradigm of the 1960s. By 1985, however, the Diangu women had already partially abandoned the practice (P. Griffin and M. Griffin 2000:333) and between 2002 and 2005 none of the women in these and other areas were involved in hunting at all. Only a small number of older women reported previous independent hunting activity, but they had all stopped the practice as soon as they had children.⁶¹ It remains obscure why unmarried women

⁶⁰ Headland (1986:321) translates this as the Agta's 'human characteristic', while I would like to suggest that it could be narrowed down to the characteristic that distinguishes Agta from non-Agta.

⁶¹ In the Diangu watershed five women were encountered, three in their late thirties and two in their fifties, who had been active hunters in their unmarried years. They had each killed between two and ten pigs or deer. In the Dipagsanghan and Disabungan watersheds we came across four other women, all in their early forties, who were previously involved in hunting. The main strategy followed by these women was to wait down at a creek or river for their dogs to chase game from the top of a hill down into a valley. The game would either be shot with bow and arrow, or, if the dogs had already injured the game, they would stab it with knives.

today are no longer skilled hunters. Agta say it is the combined result of the lack of good hunting dogs (see also Estioko-Griffin 1985:26) and the increasing scarcity of wildlife. These circumstances however, equally apply to male hunters and can therefore not explain why hunting has become a much more male dominated domain in the past two decades.

Another dividing line for hunting involvement is age. As hunting implies long and fast, and often nightly, hikes it is not a suitable activity for young boys and elderly men. Still, hunting skills are developed from boyhood onwards. First by play-practicing with toy bow and arrow or rubber slingshot close to the camp. Later by following one's father, elder brother or other close relative while joining on hunting expeditions. According to M. Griffin (1996:49), in this mentoring process 'older persons tell younger what to do, such as "go here and do that" - not a direct order - but more of a strong suggestion'.

Surprisingly, even after repeated probing throughout the research area, my informants denied the existence of any initiation ritual with respect to hunting. Either such a ritual truly does not exist, and never has.⁶² Or, it used to exist but its importance has declined over time. Another possibility is that it still exists, but cannot be revealed to (female) outsiders. Thus, a boy's physical aptitude is said to be the only clear requirement for him to join hunting expeditions. In practice, active participation in hunting activities starts from the age of around ten, but it may last until well in his pubescence until a boy succeeds in killing game. It depends on a hunter's skill how intensively he will be involved in hunting in his adult life (see also Rai 1982:87-8).

Time investment and hunting success rates

Hunting trips vary in duration from less than an hour to several days and nights. In the Disabungan and Diangu watersheds, hunting trips averagely last around eight hours (table 3.3). Just under one fifth of all recorded hunts in both these areas are overnight trips. The coast-dwelling Dimasalansan hunters spent only two hours per hunt and no overnight trips were recorded. The time allocation records collected among all three residential groups show that Disabungan and Diangu Agta men were out hunting nearly 7% and 9% of their time respectively (tables 2.13 and 2.12). These two river-dwelling Agta groups thus show relatively similar time investment rates for hunting. As may be expected however, the coast-dwelling Dimasalansan Agta show a completely different picture: they spent only 0.4% of their recorded time in hunting (table 2.11).

The two river-dwelling residential groups are also comparable in terms of hunting success rates. Around one third of the hunting trips in both the Disabungan and Diangu watersheds were successful. Again, in both areas, around two-thirds of the successful trips generated large game (wild pig, deer, macaque or monitor lizard), while around one third of the successful hunts resulted only in minor game (jungle fowl and various species of pigeon). The record further shows that in both watersheds, Agta hunters invest around four man-hours of work for each kilogram of meat

⁶² No such ritual has been found among the Batek Negritos of Peninsular Malaysia either (Endicott 1979a:22).

generated. The small hunting record collected among the coast-dwelling Dimasalansan Agta suggests that success rates are lower, but rates of return are much higher than in the forest interior. While only one fourth of the recorded hunting trips were successful, half of these resulted in large game. Moreover, only 0.5 man-hour was invested for each generated kilogram of meat. The sample of hunting trips for this residential group is too small however to allow speculation on underlying patterns of hunting success.

Agta throughout the Northern Sierra Madre Natural Park say that hunting returns are best during the wet season, which explains why most hunting takes place during that time. As fruits become available from the late dry season, game then is fattest and healthiest. Moreover, game tracks can be more easily followed when the forest floor is moist. In the wet months, hunters transpire less and are therefore less easily noted by game. Last, in the dry season game is said to retreat to higher elevation areas, which take more effort to reach.

Table 3.3 Hunting success rates 2004-2005

	Disabungan		Diangu		Dimasalansan	
	%		%		%	
No. of observation days	33		29		25	
No. of hunting trips	24		30		8	
No. of hunting trips successful	7	29	9	30.0	2	25.0
No. of animals killed	10		19		2	
Kills per day	0.3		0.7		0.1	
Kills per hunt	0.42		0.63		0.25	
Weight of game hunted (in kg)	125		165		33.75	
Wild pig	70	56.0	108	65.0	33	97.0
Deer	40	32.0	50	30.3	-	0.0
Macaque	6	4.8	5	3.0	-	0.0
Monitor lizard	6	4.8	-	0.0	-	0.0
Bird	3	2.4	2	1.2	1	3.0
Total number of man-hours hunted	459		667		18.5	
Hours invested per kg of meat	3.7		4		0.5	
Average length of hunting trip in hours	8		7.5		2	
Number of overnight trips	5	21.0	5	16.7	-	

Agta believe that hunting success is not only determined by a hunter's skill, the abundance of wildlife, and weather conditions, but by supernatural forces as well. It was already explained that Agta recognize two main classes of spirits, namely ancestor spirits and nature spirits, which are thought to roam around the environment and influence hunting success. These spirits have to be appeased. This is mainly done by making small food offerings after eating in the forest, especially during hunting and

fishing trips. Several omens are considered to indicate that the spirits will aide a hunter on his upcoming hunting trip. Especially dreams in which spirits are in a good mood are signs that they will guide the hunter to game the following day. Diangu hunters further consider dreaming about child-bearing water buffalo to be a positive sign. During hunting trips, the singing of several bird species⁶³ is thought to be a positive omen. The spirits are easily irritated. Failure to perform food offerings, for instance, will cause bad hunting results, sometimes for extended periods, or even hunting accidents (box 3.2). Other behaviour that Agta say will upset ancestor and nature spirits includes joking about animals, defecating or urinating on hunting tools or in a hunting area (see also Rai 1982:89), wasteful hunting by leaving game to rot in traps, and, most of all, disrespect for game animals by damaging their mandibles. These mandibles are believed to carry the souls (*kalidua*) of the killed game and their disrespectful treatment will inhibit future hunting success.

In case of repeated unsuccessful hunting, or after hunting accidents, a cleansing ritual needs to be performed to cast off the spell. This ritual, in several variants, was found to be performed both by the Disabungan Agta (see also Rai 1982:88-9) and the Diangu Agta. The latter perform a three-step ritual, of which only the first is also mentioned by the Disabungan Agta. According to the Diangu Agta the ritual needs to be performed at dusk, but the Disabungan Agta were observed to perform it at dawn, immediately prior to a hunting trip. The ritual's first step is called *magsugosug* (*maghotong* by the Disabungan Agta (Rai 1982:89)). It involves burning a mix of plant parts, among which the fruits and bark of *payawpayaw* (*Homalomena* cf. *philippinensis*) and the leaves of *butaw* (*Annonaceae*, *Goniothalamus* sp.) and *pisak* (*Hopea malibato*). The hunter, his hunting tools, and sometimes his hunting dog, are covered by the resulting smoke. The plant mix is offered to a nature spirit that guards game animals, while exclaiming the words 'Please change this for a wild pig'. The next step in the ritual is called *magdigus* (showering). This again requires a combination of plant parts, among which is *milmil* (*Entada meedii*), which in this case is boiled in water. The water is then poured over the head, body and hunting tools of the hunter and his dog. The ritual is completed by performing *magtotod*, in which a closed part of a bamboo stem is put on the fire and heated until it explodes. At the explosion the hunter exclaims a wordless sound, after which the spell is neutralized.⁶⁴

⁶³ These include two species of Malkoha, both of which Agta call *sekat*, namely the Scale feathered Malkoha (*Phaenicophaeus cumingi*) and the Red crested Malkoha (*Phaenicophaeus superciliosus*).

⁶⁴ Note the similarity with a ritual performed by Luzon hunters described by Sanches (1617, cited in W. Scott 1994:84): 'When a hunting dog's poor performance was attributed to witchcraft, *pabto* was conducted: a node of hot bamboo was struck on the ground to explode in front of the dog while the hunter said "Palas na an palhi!" [Out with all spells and curses]!'

Box 3.2 Hunting accidents

Despite Agta hunters' great skill and coordination, hunting remains to be a risky affair. Encounters with adult wild pigs, especially boars, regularly result in severe injuries or even lifetime invalidity. Some hunters who have gone through traumatic hunting accidents give up hunting completely afterwards, even if they are still physically able to pursue the activity. Hunting accidents are often considered to be the result of offensive behaviour towards ancestor or nature spirits.

In rare cases hunting accidents are fatal. One such case shook the Disabungan Agta in September 2004. At twilight on a foggy morning one of the residential group's best hunters mistook his teenage son, who was picking fruits from a tree nearby the campsite, for a macaque and shot a self produced bullet from his match gun through the boy's head. Upon hearing his son's screaming and seeing him fall off the tree, the hunter ran off in confusion and got his brother to rescue his son. The boy's uncle carried him over the mountains to the village centre from where a truck took them to the regional hospital in Tuguegarao. The wound got infected and five days later the teenager died. Before the boy's father set out hunting again a couple of months after his son's death, a cleansing ritual was performed to undo him of the spell that was thought to have (partially) caused the accident.

Hunting tools and strategies

The Agta hunters of the Northern Sierra Madre Natural Park use a combination of bow and arrow, shotguns and traps. The specific choice of hunting tools and strategies however varies according to climatic and environmental conditions as well as individual and group preferences (see also Rai 1982:92; P. Griffin and M. Griffin 2000:332).

Of 119 Agta hunters, over 56% hunt with bow and arrow, while nearly 55% use shotguns. Most shotgun hunters use self-produced match guns (*diposporo*), which are loaded with match heads and home-made bullets. A minority, living in a logging concession area in Dinapigue, use purchased air guns (table 3.4).

Snaretraps are highly popular among certain residential groups: over 60% of the respondents use them. Snare traps come in two forms. The first is the most widely used and powerful rope trap (*silo*), which is set up along game trails or around swiddens in order to trap wild pig and deer. A smaller type of rattan trap (*pangate*) is intended to catch jungle fowl and is set-up near the campsite where it can be checked frequently. In the following discussions, unless mentioned otherwise, references to trapping always concern rope traps.

A very small number of respondents occasionally use blasts, or 'pig bombs', in order to eliminate wild pigs which raid swiddens (see also Persoon and de Jongh 2004:172). Blasts are produced by wrapping broken glass and fire crackers in cloth soaked in fermented fish sauce. While the pig chews the blast, the produced heat triggers the explosion of the firecracker. Finally, nearly every household owns a rubber slingshot, which is used by both children and adults for shooting pigeons and hornbills.



Photo 3.4 Emoy Wagi showing his hunting catch (Philippine warty pig, long tailed macaque and Gray's monitor lizard), Disabungan River, San Mariano, August 2004

As we will see further on in this chapter, most materials from which hunting gear is constructed are gathered from the forest. Hunting tool production and maintenance are time consuming tasks which are to a large extent the domain of elderly men. Having lost their agility, but having accumulated much skill and experience, they make good craftsmen. Tool production is done in the camp where it is conveniently combined with watching over children and land and engaging in domestic activities. Arrow heads come in different shapes depending on the game for which they are intended. For minor game (especially birds and macaques) relatively small arrow heads are permanently attached to the shaft. For wild pig and deer arrows with large and removable barbed metal heads (*garaygay*) are produced. The shaft's posterior is fletched with feathers of the Rufous Hornbill (*kalaw*) (*Buceros hydrocorax*).

Table 3.4 Hunting tool use

	River-dwelling households (n=91)		Coast-dwelling households (n=28)		Total (n=119)	
	F	%	F	%	F	%
Bow & arrow	51	42.9	16	13.4	67	56.3
Bow and arrow only	5	5.5	-	-	5	4.2
Bow and arrow + shotgun	13	14.3	1	3.4	14	11.8
Bow and arrow + traps	25	27.5	10	35.7	35	29.4
Bow and arrow + traps + shotgun	8	8.8	5	17.9	13	10.9
Shotgun	55	46.2	10	8.4	65	54.6
Shotgun only	24	26.4	4	14.3	28	23.5
Shotgun + traps	10	11.0	-	-	10	8.4
Traps	49	41.2	23	19.3	72	60.5
Traps only	6	6.6	8	28.6	14	11.8

Hunting tool use evolves under the influence of changing social, economic and environmental conditions. The Casiguran Agta of Northern Aurora province, for instance, used bow and arrow in almost all their hunting activities in the 1960s. In the early 1980s bow and arrow use had already dropped to 17% and by the turn of the century it was fully replaced by shotguns (Headland 1986:263-4; 2004:41). A quarter of a century ago, Rai (1982:84) predicted that the Agta in Isabela province would soon replace the bow and arrow complex with shotguns as well. This has so far not been the case. We do see however, that certain tools have disappeared from the hunting spectrum, while others have been adopted (table 3.5). As I will show below, it is not only a process of deculturation that drives the adoption of certain hunting tools and the phasing-out of others (see Headland 2004). The changing character of the forest is an important explanatory factor as well.

Hunters often prefer certain (combinations of) hunting tools over others (table 3.4). Nearly 40% of respondents stick to one hunting method consistently. The remaining respondents alternate the use of two or all of the above hunting methods, of which the combination of bow and arrow and traps occurs most frequently. Why are certain hunting methods preferred over others and how do such preferences differ between hunters? Hunters are most outspoken on this matter with respect to trapping.

While two-thirds of the interviewed hunters regularly use traps and say that they generate most of their catch in this way, the remaining 30% strongly disapprove of trapping. They consider it a wasteful method for two reasons. First, as traps are irregularly checked, game often rots before it is collected. Second, it is an unselective method and hunters cannot avoid trapping juvenile and pregnant animals. In addition, some respondents point out that hunting dogs often break their legs when they run into a trap. Interestingly, most non-trappers belong to three adjoining residential groups, namely the Diguse, Disabungan, and Dipagsanhan residential groups. Within these groups there is a fair amount of pressure among hunters to refrain from trapping for above mentioned reasons. Within the trap-using groups, these strong sentiments are less often present. There, the incidental non-use of traps can mostly be explained by the age of the respondents. Older hunters often lack the skills for producing traps and say they take no interest in them.

Table 3.5 Hunting tools used in past and present

Name of tool	Type of game	Currently used
Bow (<i>busog</i>) and arrow (<i>pana</i>)		
Unbarbed arrow (<i>pana</i>)	Small and large game	Yes
Barbed (<i>garaygay</i>)	Large game	Yes
One component (<i>eblog, bigiw, bahe</i>) (Rai 1982; Reed 1904)	Macaques and other small game	No
One component (<i>pana</i>) (Reed 1904)	Birds and bats	No
Gun		
Match-gun (<i>diposporo</i>)	Small and large game	Yes
Air-gun	Small and large game	Yes
Trap		
Snare trap (<i>silo</i>)	Wild pig and deer	Yes
Snare trap (<i>pangate</i>)	Jungle fowl	Yes
Spear traps (<i>bilatik, takdik, kalawat</i>) (Rai 1982; Reed 1904).	Small and large game	No
Rattan loop trap (<i>bélaybay</i>), cage trap (<i>salakumba</i>), lasso-type ropes (<i>biklog</i>) (Rai 1982)	Python, jungle fowl and other unspecified birds	No
Sticky latex (Rai 1982)	Perching birds	No
Dogs	Locating, cornering and driving large game	Yes
Rubber slingshot	Small and large game	Yes
Blast	Wild pig raiding swiddens	Yes

With respect to the use of bow and arrow Agta have similarly different preferences. Within certain Agta groups, especially those from the Diangu, Blos, Abuan and Disabungan watersheds, both old and young hunters are keen on maintaining their use of bow and arrow. While most of them also use traps and / or guns, they consider bow and arrow useful because it is a silent method which can be used in both dry and rainy weather. In addition to this, bow and arrow are also used as an identity marker. Hunters from above mentioned watersheds carry their bow and arrow with them wherever they go, whether it is the forest or the village centre. Apart from its practical purposes (such

as self-protection and the possibility of shooting by-passing game), hunters say their bow and arrow serves to show others that they are Agta.

Those who do not use bow and arrow fall into two groups. The majority are older hunters who gave up bow and arrow hunting in the past decade or so. A smaller group of hunters has never learned how to use bow and arrow. According to both these groups its use is no longer practical in today's disturbed, bushy forest. Bows are large and hunters say it is difficult to carry them around silently. Moreover, a lot of space is required to draw one's bow, while clear sight is required to spot the game from a distance. Many hunters consider it too time consuming to collect all the materials from which the bow and arrow are produced. Thus, this group prefers shotguns, the use of which is much less hampered by the bushy forest. Only little space is needed to carry and point the gun and one can hide behind shrubs to closely approach game. There are disadvantages too, which are equally acknowledged by those who do not and those who do use guns. A gun's noise scares off game. Also, as all bullets are shot at once, that one shot needs to be right. The purchased air guns are expensive and not very suitable for killing large game, while the self-produced match guns require specific manufacturing skills. They also become dysfunctional when they get wet. More importantly, many hunters dislike the use of match guns because of its explosion danger.

Apart from individual and group preference, hunting tool use is further influenced by the economic purpose of specific hunting trips. Most hunting is undertaken for consumption within the camp. In the few cases where Agta hunters are approached by villagers or towns-people to generate a certain amount of wild meat, hunters tend to use different methods. They may borrow rifles, the bullets for which are obtained from the eventual buyers. Alternatively, hunters may engage in trapping while they would not do so during regular hunts.

How are these various types of hunting gear put to use? Agta apply a range of hunting strategies, which vary depending on the season, the availability of hunters and specific game characteristics. Hunters distinguish between *mangaliduk*, which includes a number of individual hunting tactics, and *maganop*, which involves game drives with dogs (see also Rai 1982:84-7).

Mangaliduk is now the most prevalent type of hunting among the Agta of the Northern Sierra Madre Natural Park. Between one and three hunters leave the camp collectively, but once good hunting grounds are reached they each set out hunting on their own in adjacent forest areas. During overnight trips a meeting point serves as a collective campsite for the hunters to rest and eat and for the catch to be butchered and dried. A combination of specific tactics is used by each of the hunters, none of which involves the use of dogs. On wet days the hunter searches for game tracks and follows these towards the game. Deer are sometimes traced by following the barking sounds they produce. While stalking, small smoking fires may be lit in order to drive game in the desired direction. Alternatively, a hunter lies in ambush near a known game trail. In the late dry season or early wet season, when wild fruits fall down to the forest floor, hunters often hide in or near trees which are known to be visited by game, especially wild pig (see also P. Griffin and M. Griffin 2000:332). This can be done both at day and night. Night time hunting requires a torch light and is best just before or after a new moon, when the skies are darkest.

The methods used in *mangaliduk* and the resulting amount of game vary per area (table 3.6). In the Disabungan watershed, for instance, bow and arrow and match gun together generated nearly all of the catch. In contrast, the Diangu Agta obtained only 0.1% and the Dimasalansan Agta obtained none of their catch using bow and arrow or shotgun. Of further interest is the fact that while most hunts are undertaken at day time, over-night trips are generally more successful. Moreover, the lion's share of recorded hunts consists of one- or two- person parties. Hunting parties of three or more persons were of more or less equal importance among the two river-dwelling groups, but were absent from the coastal Dimasalansan record.

Table 3.6 Effectiveness of hunting tools and strategies 2004-2005

	Disabungan		Diangu		Dimasalansan	
	F	%	F	%	F	%
No. of observation days	33		29		25	
No. of hunting trips	24		30		8	
No. of hunting trips successful	7	29	9	30	2	25
Hunting method used						
Bow and arrow	-	-	8	26.7	-	-
Gun	-	-	1	3.3	4	50
Bow and arrow and gun	21	87.5	-	-	-	-
Traps	3	12.5	21	70	4	50
No. of game animals killed	10	100	19	100	2	100
Bow and arrow	5	50	-	-	-	-
Gun	4	40	2	10.5	-	-
Traps	1	10	17	89.5	2	100
Gross weight generated (kg)	125.0	100.0	165.0	100.0	34.0	100.0
Bow and arrow	69.5	55.6	-	-	-	-
Gun	55	44	0.2	0.1	-	-
Traps	0.5	0.4	164.8	99.9	34.0	100.0
Composition of hunting party						
1 hunter	15	62.5	13	43.3	6	75.0
2 hunters	6	25.0	13	43.3	2	25.0
3 or more hunters	3	12.55	4	13.3	-	0.0
% of game animals killed						
1 hunter		30		5.3		50
2 hunters		30		84.2		50
3 or more hunters		40		10.5		-
No. of day trips	19	79.2	25	83.3	8	100.0
% successful		26.3		24.0		25.0
No. of overnight trips	5	20.8	5	16.7	-	-
% successful		40.0		60.0		-

The much less occurring strategy of *maganop* involves dogs driving the game from a ridge downhill towards a team of up to twenty hunters. It is mostly done in the dry season (P. Griffin and M. Griffin 2000:332). The hunters co-ordinate their movements

through non-verbal communication (Rai 1982:85) and dogs are called by their individual names to give them directions. Occasionally fires are lit in cogonal grasslands to drive game in the right direction and to stimulate re-growth of grass, which attracts deer. As the smell of fire also chases animals deeper into the forest, however, hunters say they only do this incidentally. While *maganop* still was a widely used strategy in the early 1980s (Rai 1982; P. Griffin and M. Griffin 2000), it is now rarely practiced. A possible explanation for this development may be the reported lack of good hunting dogs. Agta say that good hunting dogs, which can either be male or female, have asymmetrical positioned nipples, tough hair, black tongues and curved canines. They are trained by getting them used to the smell of game whenever catch is brought into camp and by letting them join on hunting trips from young age onwards. While most households still own one or more dogs, few of these are suitable for hunting and most are said to be sickly and inactive. Informants do not know the reason for this development.

The last main hunting strategy, which falls outside the scope of the *mangaliduk* and *maganop* categories, is trapping. Setting traps and checking them is either done alone or in small hunting teams. Each hunter or team of hunters usually traps in a more or less fixed area in order to avoid confusion over trap ownership. Traps are generally set up between one and four hours hiking from the campsite, in places where game tracks are present. They are positioned two to ten meters apart. The preferred trapping location seasonally varies. Hunters say that deer and pigs move to higher elevations during the dry months, while they stay downhill during the rainy season. Traps are only moved to another site when they have not generated catch for a long time. Hunters using large numbers of traps often spread these out over several areas. Less often, hunters place several traps around their fields to catch wild pig, and occasionally deer, which damage crops.

As mentioned, the popularity of traps varies between Agta residential groups. The coast-dwelling Dimasalansan Agta, for instance went trapping on half of their recorded hunting trips. The Diangu Agta did so on as much as 70% of their hunts. In both records, almost all game was obtained from trapping. The Disabungan Agta, in contrast, explicitly disapprove of trapping. They used traps on only three of their recorded hunting trips, two of which were intended for catching jungle fowl in *pangate* traps, while the third was aimed at catching a deer that was known to raid a hunter's swidden.

Trapping intensity further varies between individuals (table 3.7). The number of traps owned per hunter varies from five to about three hundred. The majority of hunters own between 11 and 100 traps each, while one third own more than 100 traps. Checking frequency ranges from three times daily in the case of *pangate* traps, to once every two weeks. Hunters say that in order to avoid the wasting of catch, traps should be checked at least every three to four days. Less than half of the respondents do so, however, while the majority checks their traps only weekly.

Table 3.7 Trap ownership and trap checking frequency

	Number of respondents	
	F	%
Number of traps per hunter (n = 49)		
Up to 10 traps per hunter	7	14.3
11-99 traps per hunter	28	57.1
100-300 traps per hunter	14	28.6
<i>Total</i>	49	100.0
Checking frequency (n = 31)		
Check every 3-4 days	14	45.2
Check every 6-7 days	16	51.6
Check less than once a week	1	3.2
<i>Total</i>	31	100.0

Processing and distribution of catch

While a hunter or group of hunters is out in the forest, those who stay behind in the camp are eagerly anticipating the hunters' return. This is especially so when there has not been any meat to consume for a long period of time or when, in fact, there is nothing left to eat at all. This may be the case after a period of heavy rains or typhoons during which both hunting and fishing are impossible. It may also occur when hunting trips have been repeatedly unsuccessful. Traditionally, a hunter's wife would not eat until her husband came home with catch. Today, women say this has become an impossible practice to maintain as hunting trips too often remain unsuccessful. A woman will therefore try as much as she can to provide other forms of food for her children and herself while her husband is out in the forest.

For a hunter coming back to camp without catch feels uncomfortable, especially when he knows that the need for food is high. Being successful however, is not something one boasts about. There are subtle ways to inform those who stayed behind about whether or not a hunting trip has been successful. Rai (1982:89) writes that a successful hunter will carry his hunting gear in his right hand or over his right shoulder upon return to camp. Various of my own informants from different areas say that a successful hunter will walk into camp with a rapid and determined pace, while an unsuccessful hunter will enter the camp more hesitant and less obtrusively. While still in the forest, the successful hunter will leave deep footprints on the forest floor, while an unsuccessful hunter will attempt not to leave any footprints at all, by avoiding walking on muddy trails. Although things may turn out differently in practice⁶⁵, in theory a successful hunter will not carry the catch back into camp himself (see also Rai 1982:89). It is either carried by another member of the hunting party, or when the hunter is alone, it is left behind at sometimes considerable distance from the camp for

⁶⁵ One key informant from Dipagsanghan (Palanan) recalled a hunt together with his elder brother-in-law, during which the latter shot a large deer. In line with the above mentioned tradition, our informant was obliged to carry it back home. However, as he later on shot a pig himself, he thought his brother-in-law would help him out carrying it. Instead, our unlucky informant was told to first carry his own catch back to the camp and then pick up his brother-in-law's catch as well.

someone else to pick it up. This person is guided towards the catch by a trail of pebble piles, betel spit or leaves. This arduous task can not be refused.

Sometimes the catch is already butchered and partly eaten in the forest. This is usually the case during overnight hunting trips or when the catch is voluminous and more easily carried down in pieces. Usually however, the catch is butchered immediately after it is brought into camp. Many people are involved in this, and usually everyone who is present will watch. When an animal was trapped, it may still be alive. Large game is killed by cutting the artery, after which it usually takes less than five minutes for the animal to die. Blood is either collected in a pan for later preparation or flows freely on the camp ground. Skin of a wild pig's forehead may be cut-off and worn around the upper-arm of the hunter and his close relatives (see also Rai 1982:89). Paws are cut off for dogs to eat and children to play with. A fire is prepared on which the carcass is carefully turned in order to burn off the fur. In the case of deer, the skin is cut off and dried separately for later consumption. Next, the carcass is cut open. If an animal is pregnant, the embryos are taken out as a strong taboo rests on the consumption of these unborn animals.⁶⁶ Next, the intestines and organs are taken out. Most of these are fed to the dogs, while women carefully set aside the liver, bladder, gallbladder and occasionally the stomach. The liver is immediately consumed by children and adults, either raw or after roasting it on a fire. Bladder and stomach are emptied carefully and then dried under the roof of the successful hunter. When dried, these organs are used to store honey, or alternatively, they are blown up like a balloon for children to play with. The gallbladder is dried as well and serves as treatment for a variety of ailments, including stomach problems and *subisubi* (*beriberi*, thiamine deficiency). Most importantly, the mandibles of pig and deer as well as a monkey's skull are carefully set aside and cleaned because the game animals' soul is thought to live in these parts. As mentioned, dropping or damaging them is believed to cause serious and long lasting misfortune in future hunting trips. The bones and skulls are collected on a rattan string and hung in front of the hunter's house. While this is considered the most respectful way to treat the animals' bones, it also serves to display the hunter's success.

Most of the meat is consumed within the residential group. It is cut into pieces and a pile of meat chops is prepared for each household in the camp. Agta explain this strong emphasis on sharing by reasoning that whatever is obtained for free should be shared with all close relatives. If certain households are excluded from meat distribution, or if an offered share is rejected, this indicates that relations are seriously strained. If there are close relations with nearby non-Agta, these may also be given a share of the catch as though they were one of the other Agta households. The distribution of the meat is accomplished as soon as possible and is typically a task of children and adolescents (for a similar observation on the Batek, see Endicott 1979a:21). Meat is certainly not consumed on a regular basis however. Diet records collected in 2004 and 2005 show that the Disabungan Agta are worst off in this respect: of 43 meals that they consumed, none contained meat. The coast-dwelling

⁶⁶ Given the taboo on eating these embryos one would expect that they are disposed of according to a special procedure. Surprisingly, however, informants have repeatedly denied the existence of such a procedure and state they simply leave the remains for the dogs to eat.

Dimasalansan Agta ate meat at only 4.4% of their meals (n=90), while meat was a component of 13% of the Diangu Agta's meals (n=102).

In case a large deer or wild pig has been caught, part of the catch may be traded. Usually the hind legs are set aside for this purpose. On average one out of ten hunting trips results in game being traded. The coast-dwelling Dimasalansan Agta hunted least often, but traded the largest share of the obtained weight (30%), selling it to nearby fishermen. The Diangu Agta sold over 25% of their obtained weight, and they went as far as the market in Maconacon, which takes a day to reach, to trade it. The Disabungan Agta traded the smallest share of the total obtained weight (12%), and this was sold to loggers in the Disabungan Valley itself. Although prices slightly vary per location, when trading game with local buyers one kilogram of fresh deer or pig meat is usually exchanged for one *ganta*⁶⁷ (2.24 kg) of rice, the price of which varies from about PhP50 to PhP70 (US\$0.9 to US\$1.3).⁶⁸ Higher prices are paid for dried meat. In the rare case that game is sold at a more distant market, the price may double. The trade of meat is nearly always supply-driven, although local residents incidentally ask Agta to hunt for wild pig in case one is needed for a wedding or some other celebration. It is hard to say how fair transactions generally are. An often heard complaint is that Agta are systematically underpaid for their products. Undoubtedly, cheating frequently occurs. At the same time, where Agta claim they are underpaid, non-Agta often argue that there was outstanding credit to be compensated for. Indeed, the possibility of credit taking generally outweighs (perceived) underpayment. In practice, Agta tend to continue a trade relationship for as long as the buyer is willing to provide credit. If this is no longer the case, a switch is made to another buyer.

Hunting patterns through time

Twenty years ago, the San Ildefonso Agta of northern Aurora province (south of Isabela province) went hunting only 6% of their days and obtained game during as little as 14% of their hunting trips. Based on these observations, Headland (1986:321-2) stated that they were 'no longer involved in hunting as a primary economic occupation'. Over a decade later, Early and Headland (1998:50-55) concluded that the Agta had turned into landless agricultural workers, for whom hunting was just a minor activity. Here, I will discuss how the importance of hunting has changed among the Agta of the Northern Sierra Madre Natural Park in the past twenty-five years.

For the Disabungan Agta we avail over a valuable data set coming from Navin Rai, collected in 1979-1980. In 1980-1982, Bion Griffin and Agnes Estioko Griffin collected similar data among the Nanadukan/Malibu Agta, who reside immediately north of the Diangu residential group and are closely related to them. Since their hunting grounds are bordering each other and have similar physical characteristics, it is

⁶⁷ The *ganta* is the locally common volume unit for measuring rice, corn and consumer goods such as sugar and salt. It has been used as a measurement unit in the Philippines at least since the nineteenth century. It probably is a variation on the *gantang*, a measurement unit used throughout the East Indies (UN 1966).

⁶⁸ All values for PhP to US\$ are based on the exchange rate as of August 1 2005 (when the Philippine peso was worth US\$0.01789) and rounded.

here assumed that these two residential groups' situations were comparable in the early 1980s. Therefore, the Malibu/Nanadukan data are used here as a basis for a discussion on changing hunting patterns among the Diangu Agta.

Based on field work in the mid to late 1970s, P. Griffin and M. Griffin (2000:329-30) refer to the Disabungan Agta as being among 'the most traditional Agta groups operating in situations of still abundant wildlife populations'. This was despite the fact that they 'met with loggers and encroaching farmers' relatively frequently. Times have clearly changed. Over twenty-five years later, the Disabungan watershed has been visited by yet many more loggers and in response to non-Agta agricultural expansion, the Disabungan Agta have moved eastward with the shifting forest fringe. Meanwhile, their time investment in hunting has sharply fallen. Disabungan men decreased their share of time spent hunting from almost 75% to 7%, while female time investment in hunting dropped from 8.5% to 0% (Rai 1982:87, 232).

Not only did the Agta devote much more time to hunting in the late 1970s, such great time investment was well worth the effort. One large game animal (deer or pig) was obtained every two days and each band member could eat up to 0.5 kg per day (Rai 1990:89). Since then, however, hunting revenues halved from 0.8 to 0.4 game animal per hunt. The number of man-hours needed to obtain one kilogram of meat increased, although not as much as might be expected (table 3.8). It was already mentioned that in a record of 43 meals consumed by the Disabungan Agta in 2004 and 2005, none contained meat. Indeed, meat has become a delicacy in the Disabungan Valley, rather than a regular part of the diet, as it used to be.

The type of game has also changed. Deer hardly appears in Rai's record, as this was at the time considered less tasteful than wild pig, even though it made a better trade product. Deer presently is the second most often caught game animal and is mostly consumed by the Agta themselves. The size of hunting parties has almost reversed. While only one fifth of the Disabungan hunts were undertaken by three or more hunters in the early 1980s (Rai 1982:87, 233), at present two-thirds of all hunts are undertaken by single hunters. Although data on the relative share of dog drives in Rai's record are lacking, the much larger share of hunting parties consisting of three or more persons suggests that such drives were much more common then.

Although the Nanadukan Agta showed the first signs of moving to a commercial exploitation pattern in the early 1980s, P. Griffin and M. Griffin (2000:332) characterize them as 'traditional in many ways.' Estioko-Griffin (1985:28) recorded that in 1980/1981 Nanadukan men spent almost half⁶⁹ and women nearly one third⁷⁰ of their time hunting. The current study shows that, like the Disabungan women, Diangu women are no longer involved in hunting at all. Moreover, male time investment in hunting has fallen to just below 9%. Interestingly, although success rates per hunting trip have remained stable over time, the number of animals killed per hunt has doubled from 0.3 to 0.6. This probably has much to do with the great changes that have occurred in hunting tool use. From a complete reliance on bow and arrow hunting (P. Griffin and M. Griffin 2000:333) the emphasis moved to the extensive use of traps. Contrary to the situation in the Disabungan watershed, in the Diangu watershed wild pig is obtained more often than it was in the early 1980s, while the importance of deer

⁶⁹ I computed this by taking the average of 85.6% and 12.6% in rainy and dry seasons respectively.

⁷⁰ I computed this by taking the average of 51.6% and 8.6% in rainy and dry seasons respectively.

has strongly decreased. The composition of hunting parties has not significantly changed. One- and two-hunter parties remain to be most common, while teams consisting of three or more hunters less frequently occur in the records. What has changed, however, is the importance of dogs. As much as 64% of game was killed with the help of dogs in the early 1980s, while the current record contains no dog-drives at all.

Table 3.8 Hunting patterns 1979-1982 and 2004-2005 (adapted from P. Griffin and M. Griffin 2000:331).

	Disabungan		Diangu/Nanadukan/Malibu	
	1979-1980 (Rai 1990)	2004-2005	1980-1982 (P. Griffin and M. Griffin 2000)	2004-2005
Days of observation	64	33	185	29
No. of hunting trips	48	24	150	30
% Successful hunting trips	-	7	29	30
No. of game killed	39	10	50	19
% Bow and arrow	-	50	100	0
% Match gun	-	40	0	37
% Trap	-	10	0	63
% Game killed	¹	100	¹	100
Wild pig	54	40	34	42
Deer	2	20	34	16
Macaque	23	10	20	5
Monitor lizard		10		-
Bird		20		37
Other			6	-
Kills/day	0.61	0.30	0.27	0.66
Kills/hunt	0.81	0.42	0.33	0.63
Man-hours/kg	3.0-3.5	3.7	-	4.0
Group size				
% Trips single hunter	21	62.5	48	43.3
% Trips 2 hunters	33	25	37	43.3
% Trips 3 or more hunters	46	12.5	15	13.3

¹ It is unclear from the source why these percentages do not add up to 100%.

Overlooking these changes in hunting patterns the most striking fact is the sharply decreased time investment in hunting by both the Disabungan and Diangu Agta. Although no quantitative data are available to support this, anecdotal evidence suggests that while hunting used to be of some importance among coast-dwelling Agta, it is now of minor significance, especially in the dry season. Thus, both river- and coast-dwelling Agta throughout the Northern Sierra Madre Natural Park have likely much decreased their involvement in hunting over the past decades. Interestingly, however,

changes in hunting returns are ambivalent. Among the Disabungan Agta, the number of man-hours needed to obtain one kilogram of meat has only slightly increased, but the number of animals killed per hunt has halved. In the Diangu watershed, however, the number of kills per hunt has doubled. While Disabungan hunters have shifted their emphasis from wild pig to deer, Diangu hunters did the opposite.

Most Agta say that their decreased emphasis on hunting is mainly caused by increased wildlife scarcity. Although quantitative data are again lacking in this respect, qualitative statements by Agta and non-Agta throughout the Northern Sierra Madre Natural Park show much consistency. They systematically say that the forest used to be filled with game, while nowadays wild pig and deer in particular have become scarce. It must be noted that some caution is needed in interpreting such statements, as they may be exaggerated and somewhat nostalgic reflections on past times. Nonetheless, there are many reasons to assume that wildlife numbers have indeed sharply decreased in recent years.

First, there is the direct impact of past and present logging operations. Not only has this reduced forest cover, Agta say that wild pig and deer respond to the loud sounds of chainsaws by retreating deeper into the remaining forest. In addition, several of the fruit trees on which these animals feed are intensively harvested by the timber industry. Second, wildlife stocks are also indirectly affected by logging operations because loggers hunt too. Moreover, with expanding populations in the villages bordering the Northern Sierra Madre Natural Park, hunting pressure further increases. This is extra problematic because non-Agta hunters make use of unselective methods such as trapping and blasting. Agta hunters time and again complain that these traps and blasts are often placed in very large numbers and that they are infrequently checked. When addressing the non-Agta hunters on this matter, Agta often meet with unfriendly or even aggressive reactions. At the same time, we have seen that part of the Agta population of the Northern Sierra Madre Natural Park, also engages in unsustainable hunting practices. The Diangu Agta, for instance seem to have been able to maintain, and even increase, their returns from hunting mainly by shifting from bow and arrow hunting to trapping. Agta hunters thus face increased competition from non-Agta hunters, and growing wildlife scarcity. They adapt to these circumstances by hunting less often and, in some cases, by using different methods.

FISHING

Unlike hunting, which takes place away from the camp, fishing is an eye-catching activity. Generally aided by only a spear and a pair of self-made goggles, Agta use rivers, reef flats and seas as a source of food. In the rainy season, when the weather is cold, rivers are swollen and seas are rough, fishing is outright unpleasant. During the hot months, however, it is enjoyed as it keeps one cool and allows for play and food procurement to be combined. In describing the Agta's fishing practices, I will follow a similar set-up as in the previous section, discussing who are involved in fishing, how often, with what result and using which strategies. The relative importance of aquatic resources for consumption and trade will receive more explicit attention than was the case for hunting, because it is of greater importance. The status quo will again be compared with data from previous studies in as far as possible.

Aquatic species and fishing grounds

Agta fish and collect a variety of aquatic species including fishes, shrimps, shells, lobsters and crabs. River-dwelling Agta have a much more limited choice than coast-dwellers. Among the former, the most preferred, but increasingly scarce aquatic species is eel. In addition, a number of other fish and shell species are caught. Linnebank (2001:29, 53) observed that the eastern and western watersheds of the Northern Sierra Madre Natural Park differ in species composition. The former show higher species richness as its lower brackish regions contain species which spawn in the sea and then move upriver. The latter are overall less species rich but contain a higher number of introduced species. The fishing records presented in table 3.9 confirm this observation. The Disabungan Agta, living in the western foothills of the mountain range, catch only seven aquatic species on a regular basis. The Diangu Agta, who stay on the Pacific side of the mountains, frequently catch as many as eighteen aquatic species. Among both groups, small fish species like *paleleng* and *mori* (*Gobidae* sp.) are most often caught. Next comes the much more preferred but increasingly scarce eel. In the western watersheds the Mozambique and Nile tilapia, which were introduced in the Philippines in the 1950s and 1970s respectively, are important species. Interestingly, some residential groups have introduced the Mozambique tilapia in upriver areas, after which it has moved further into the mountain interior (Linnebank 2001:32-3).

The coast-dwelling Agta, who fish on and behind coral reefs in the Philippine Sea, have access to a much larger variety of aquatic species than their river-dwelling counterparts. Goslinga (forthcoming) observed that at least 110 different marine species are used by the Agta from Didadungan (Palanan), most of which belong to the families of surgeon fish (*Acanthuridae*), chubs (*Kyphosidae*), sweetlips (*Haemulidae*), damselfish (*Pomacentridae*) and octopi (*Octopodidae*) (see also Minter, Goslinga and Persoon 2007:11). Table 3.10 lists the most important species caught by the coast-dwelling Dimasalansan Agta. The composition of fishing catch is highly variable. Next to fish, octopus is the most important aquatic species both in terms of dietary- and trade value. Most of it is obtained by women. The Dimasalansan Agta caught octopus

on nearly 25% of their recorded fishing trips in 2004-2005 and it comprised almost over 26% of the total generated weight. In addition, various species of lobster, shell and crab are important. Sea-cucumbers and sea-stars are less often obtained. Agta spear-hunt at least two species of sea turtle, which are both called *pawikan*. These are the green turtle (*Chelonia mydas*) and the logger head turtle (*Caretta caretta*). Since the killing of both species is prohibited by law, several NGOs have strongly advocated for the Agta to abandon this practice. The Agta resist such advocacy claiming that they only spear the turtles for consumption in the lean rainy months. Thus, turtles are still speared by some Agta groups, but given the protected status of the animals it is hard to collect trustworthy information on this issue. The same applies to the consumption of turtle eggs, which are illegally collected from several nesting sites along the Isabela coast.

Fishing takes place in rivers, on tidal reef flats and in the deeper waters behind coastal reefs. Most Agta are specialized in either river or sea fishing and consider adjusting their fishing habits out of the question. Many river-dwelling Agta are seriously scared of the ocean and do not dare to come near it. Coast-dwelling Agta often dislike the taste of freshwater fish and many of them do not feel comfortable in fast flowing rivers. A small minority, inhabiting river-mouth settlements on the Pacific coast such as Blos (Maconacon), Dibol, Diaguan (Divilacan), Dibungco, Sabangan and Dimatatno (Palanan), more flexibly moves back and forth between river- and ocean fishing.

Table 3.9 Freshwater species caught by Disabungan and Diangu Agta

Agta name	Common name	Scientific name ¹	% of fishing trips species is caught	
			Disabungan (n = 24)	Diangu (n = 53)
<i>Palaleng</i>	-	<i>Gobiidae</i> sp.	42	70
<i>Iget</i>	Giant mottled eel	<i>Anguilla marmorata</i>	17	21
<i>Udang</i>	Fresh water shrimp	<i>Macrobrachium</i> lar	13	15
<i>Mori</i>	Largesnout goby	<i>Awaous melanocephalus</i>	46	-
<i>Tilapia</i> ²	Mozambique tilapia	<i>Oreochromis mossambicus</i>	29 ³	-
<i>Dalag</i> ²	Mud fish	<i>Channa striata</i>	4	-
<i>Buhoko/burokus</i>	Celebes goby	<i>Glossogobius celebius</i>	4	-
<i>Buhasi</i>	-	<i>Terapontidae</i> sp.	-	17
<i>Usu-us/usos</i>	-	<i>Sillago</i> sp.	-	8
<i>Porong</i>	Flathead mullet	<i>Mugil cephalus</i>	-	8
<i>Mudi bukto</i>	-	<i>Awaous melanocephalus</i>	-	2
<i>Banag/banug</i>	Mullet	<i>Mugilidae</i> sp.	-	2
<i>Talakitok</i>	Malabar trevally	<i>Carangoides malabaricus</i>	-	2
<i>Burik</i>	Blackbarred halfbeak	<i>Hemiramphus far</i>	-	2
<i>Kampa</i>	Loach goby	<i>Rhyacichthys aspro</i>	-	11
<i>Shellfish</i>	unidentified	-	-	21
<i>Others</i>	unidentified	-	-	16

¹ Based on Doornbos 2008 (and pers. com. 2009), Linnebank 2001 and Froese and Pauly 2007.

² Introduced species.

³ This most likely also includes Nile tilapia (*Oreochromis niloticus*).

Table 3.10 Marine species caught by Dimasalansan Agta

Agta name	Common name	Scientific name ¹	% of fishing trips species is caught (n=91)
Fishes			
<i>Labahita/Malabed</i>	Surgeonfishes	<i>Acanthuridae</i> sp.	2
<i>Biningal</i>	Snappers	<i>Lutjanidae</i> sp.	4
<i>Tiaw (balbalaki)</i>	Manybar goatfish	<i>Parapeneus multifasciatus</i>	3
<i>Malade</i>	Rabbitfishes	<i>Siganidae</i> sp.	2
<i>Pagat</i>	Filefishes / Triggerfishes	<i>Monacanthidae</i> sp./ <i>Balastidae</i> sp.	3
<i>Siray</i>	Squirrelfishes	<i>Holocentridae</i> sp.	4
<i>Salaksak/Salesig</i>	Wrasses	<i>Labridae</i> sp.	9
<i>Omipus</i>	Chubs	<i>Kyphosidae</i> sp.	4
<i>Masasget</i>	Squirrelfishes	<i>Holocentridae</i> sp.	1
<i>Butate</i>	Porcupinefish	<i>Diodon hystrix</i>	3
<i>Sahunguan</i>	Bluespine unicornfish	<i>Naso unicornis</i>	2
<i>Padut</i>	Convict tang	<i>Acanthurus triostegus</i>	11
<i>Banog</i>	Acute-jawed mullet	<i>Neomyxus leuciscus</i>	6
<i>Kiskisan</i>	Damselfishes	<i>Pomacentridae</i> sp.	2
<i>Mulmul</i>	Wrasses	<i>Labridae</i> sp.	3
<i>Talakitok</i>	Jacks	<i>Carangidae</i> sp.	3
<i>Uhakog/Lapulapu</i>	Groupers	<i>Serranidae</i> sp.	2
<i>Baracuda</i>	Baracudas	<i>Sphyrnaenidae</i> sp.	1
<i>Mahagta</i>	Lined bristletooth	<i>Ctenochaetus striatus</i>	1
<i>Baggusan</i>	Striped surgeonfish	<i>Acanthurus lineatus</i>	1
<i>Dugso</i>	Thumbprint emperor	<i>Lethrinus harak</i>	2
<i>Igat</i>	Moray eel	<i>Gymnothorax eurostus</i>	1
<i>Dapang (gapang)</i>	Diamond-scale mullet	<i>Liza vaigiensis</i>	1
<i>Guno</i>	Silversides	<i>Atherinidae</i> sp.	1
<i>Teteto/Keketo</i>	Striped catfish	<i>Plotosus lineatus</i>	2
<i>Bansage (bansagin)</i>	Checkered snapper	<i>Lutjanus decussatus</i>	1
<i>Amembon (amunbun)</i>	Chiseltooth wrasse	<i>Pseudodax mollucanus</i>	1
<i>Latak</i>	Japanese surgeonfish	<i>Acanthurus japonicus</i>	1
<i>Others</i>	<i>unidentified</i>	-	18
Octopi			
<i>Kugita</i>	Common reef octopus	<i>Octopus cyanae</i>	24
<i>Pulpulsod</i>	Cuttlefish	<i>Sepiidae</i> sp.	2
Lobsters	Spiny lobsters	<i>Palinuridae</i> sp.	6
Shellfish			
<i>Puti/Sigay</i>	Cowries	<i>Cypraeidae</i> sp.	4
<i>Kararing</i>	White nerite	<i>Nerita plicata</i>	4
<i>Samung</i>	Top shells	<i>Trochidae</i> sp.	1
<i>Others-unidentified</i>	-	-	4
Crabs	Most likely Round Crabs and Shore crabs	<i>Xanthidae</i> and <i>Grapsidae</i>	11

¹Based on Goslinga (forthcoming and pers. com. 2009) and Froese and Pauly 2007.

River-dwelling Agta usually fish in the river or creek immediately adjacent to their camp sites. They tend to hop in and out of the water just to generate sufficient catch for the next meal. In those cases, fishing has an easy-going air of 'in-between other things'. As table 3.11 and map 3.1 show the Disabungan Agta conducted as many as 75% of their recorded fishing trips right in front of the camp sites of Dipili and Digud. This generated almost half of the total fishing catch. The Diangu Agta conducted nearly 80% of their recorded fishing trips near the camp sites of Diangu and Dibulo as well as in the irrigation canal supplying their rice fields and close to a nearby bridge (*Rangtay*). Around half of their fishing catch originated from these nearby sites. Less often, fishing trips take place on remoter fishing grounds, which largely overlap with above described hunting grounds (see map 3.2). Such trips may either be planned separately, or they come about while 'on the road' to and from other activities, such as the visiting of relatives in neighbouring watersheds, hunting or logging.

Table 3.11 Fishing grounds exploited by three residential groups 2004-2005

Fishing ground	Fishing trips		Kg of fish generated	
	F	%	F	%
Disabungan	24	100.0	12.3	100.0
Dipili	9	37.5	3.5	28.5
Jetbag	1	4.2	3	24.4
Digud	9	37.5	2.5	20.3
Dimabigao	2	8.3	1.3	11.0
Tambale	1	4.2	1.0	8.1
Pagbiguen	1	4.2	1.0	8.1
Liblib	1	4.2	-	-
Diangu	53	100.0	63.4	100.0
Diangu	28	52.8	24.3	38.3
Uli	6	11.3	14	22.1
Kabayodi	1	1.8	9	14.0
Sabang	2	3.8	6.3	10.0
Dibulo	10	18.9	4.5	7.1
Tahitahikan	2	3.8	2.5	4.0
Rangtay	2	3.8	1.5	2.4
Irrigation canal	2	3.8	1.3	2.1
Dimasalansan	91	100.0	155.0	100.0
Dimasalansan	14	15.4	41.0	26.5
Honeymoon Reef	8	8.8	21.0	13.5
Kabiritbitan	45	49.5	50.0	32.3
Makahoyag	9	10.0	14.5	9.4
Makengaden	1	1.1	0.5	0.2
Dialinawan	11	12.1	24.5	15.8
Dibube	1	1.1	0.0	0.0
Nikannit	1	1.1	2.5	1.6
Dipudo	1	1.1	1.0	0.6

Choosing one's fishing ground is of course a cost-benefit analysis. Clearly, fishing far away from camp is time and energy consuming. However, in the Disabungan record over three-thirds of all eel originated from the remote fishing grounds of Tambale and Jetbag. While the trip to Jetbag was deliberately planned, Tambale was passed by on the way to another residential group. In the Diangu case, 64% of all eel originated from

the remote fishing grounds Uli and Kabayodi. Both of these trips were deliberately planned. This illustrates that, as is the case for hunting grounds, the location of fresh-water fishing grounds has shifted with the shifting forest fringe. Agta resort to ever remoter and higher situated fishing grounds, as the lower lying areas are decreasingly productive.

Coast-dwelling Agta fish in reef pools, on sea-grass beds and in coves. Coastal fishing is usually done from a semi-permanent settlement which is usually located just behind the beach front. From here, most fishing takes place on and behind the 'home reef'. Alternatively, especially in the dry season, smaller combinations of households may line up their temporary dwellings along a stretch of coast somewhat north or south of this semi-permanent settlement. Here, they may fish for a couple of days or weeks on end, after which the camp is shifted. Such movements may cover walking distances of up to two days and generally take place within the range of one's own kinship group.

Different marine species are associated with different locations on or behind the reef. Bigger fish species tend to stay behind the reef where it descends into the sea. Slowly descending reefs are considered more suitable for fishing than drop-offs since the latter require very deep dives. The lobsters and the biggest species of octopus are predominantly present in trenches and ponds on top of the reef flat, although they are said to move to greater depths during the dry months when temperatures in shallow waters rise beyond their liking. Crabs and shells are likewise collected on top of the reef flats, as well as in mangrove areas. Sea-cucumbers and two unidentified species of squid (*huyohuyo* and *pulpulsod*), are found on sea-grass beds.

In the case of the Dimasalansan Agta, Kabiritbitan Reef and Dimasalansan Cove are the most popular sites (table 3.11). Nearly 65% of all fishing trips took place there and almost 60% of the total generated weight originated from there. The slightly remoter Dialinawan and Makahoyag reefs were also regularly visited and together generated over one fourth of the total weight. Although Honeymoon Reef is both nearby and considered a highly productive fishing ground, it was targeted less often and generated less catch than may be expected. This can be explained by the fact that between 2000 and 2004 NGOs have promoted the reef's protection by installing a fishing sanctuary around Honeymoon Island. Although there is considerable support for the fishing sanctuary from local fishermen (Agta and non-Agta), as can be seen from the fact that fishing activities still continue on the protected reef, albeit less intensively, there is some confusion over the exact restrictions. NGO staff informed me that the entire sanctuary was off limits for all fishing activity by all fisher folk. In contrast, Agta informants maintained that the agreement was that they, being the original owners of the reef, could continue spear fishing on Honeymoon reef, while the use of nets, fykes or lines were not allowed.

Probably each watershed group has its own taboo areas when it comes to fishing. The Disabungan Agta make mention of an enchanted waterfall located in the Disogen streambed, at the easternmost boundary of the Disabungan watershed. When one approaches the waterfall's basin, its green water is said to rise and make a terrifying sound. Giant eels are believed to inhabit these waters, but those who eat these or accidentally drop their bones, will instantly meet death. Interestingly, it is especially Disabungan men in their thirties and forties who recognize the waterfall's special and dangerous characteristics, while some of the older informants ridicule their relatives'

‘superstition’. Other no-go fishing grounds are located near springs which are said to be inhabited by malevolent spirits. Sickness comes upon those who unknowingly disturb the spirits living in these springs. The Diangu Agta recognize one such area, called *Rangtay*. As table 3.11 shows however, although various children have fallen ill after fishing there, the location is not consistently avoided. Like their river-dwelling counterparts, coast-dwelling Agta avoid certain fishing grounds which are known to be inhabited by malevolent spirits. Isolated rock formations, specific parts of reef flats, and springs which enter into the sea are associated with the presence of such supernatural beings. As these spirits are invisible, fishing may unintentionally upset them. This then results in sickness or even death and the spirit attack can only be neutralized with the help of a spirit medium (*bunogen*).

Consumption and trade

Fish is a much more important source of protein than meat in contemporary Agta diet. This is especially so for the coast-dwelling residential groups. The Dimasalansan Agta, for instance, ate self-caught fish at 76% of their recorded meals (n=90). River-dwelling Agta eat fish less often, but much more frequently than they eat meat. In the Disabungan record 26% of all meals contained fish (n=43) and the Diangu Agta had fish at over 29% of their meals (n=90).

River-dwelling Agta primarily fish for home consumption. Especially in the western watersheds where fishing returns are among the lowest, fish is rarely traded. The Disabungan Agta, for instance, did not trade any of their recorded catch in 2004-2005. In the eastern watersheds freshwater fishing more often generates saleable surpluses. Eel and other larger fish species are regularly caught and traded, while shell fish is another popular trade item. The Diangu Agta thus traded as much as one third of the total weight they obtained in their 2004-2005 fishing record. Prices range from PhP50 (US\$0.9) per kg for tilapia, to PhP80 (US\$1.4) per kg for eel. Nearly 70% of the traded fish consisted of eel. It is important to note that such trade is largely supply-driven. That is, river-dwelling Agta set out fishing primarily for home-use, but in case of a good catch they will attempt to sell part of it to local acquaintances, or more rarely, on the local market. Exceptions arise when weddings or *barangay fiestas* are held in village centres, for which Agta fishermen may be asked to provide fish (see also Doornbos 2008; Giebels 2005). This then results in demand-driven trade.

The coast-dwelling Agta, in contrast, have to a considerable extent commercialized their fisheries. Larger fish species, lobsters, shells and sea-cucumbers are all mainly caught for demand-driven trade purposes. The Dimasalansan Agta, for instance traded 88 kg of the total of 155 kg (57%) that they obtained in their 2004-2005 fishing record. Buyers work with specific Agta fishermen, whom they often supply with credit and fishing equipment in order to generate as much catch as possible. These buyers can be local residents, who are often long-time acquaintances, and in some cases friends (*ibay*). They may also be business people from outside Isabela.

While prices are calculated in cash, the payment usually is in kind. Fish species come in two classes. First class fish locally sells for PhP30 to PhP60 (US\$0.5 to US\$1) per kg and is exported to Manila or even further by the buyer. Second class fish as well

as octopus are worth PhP20 to PhP40 (US\$0.4 to US\$0.7) per kg and are usually consumed by the buyer or again traded on a local market. In addition, women and children collect various shellfish species, which they accumulate for a couple of days before trading them with nearby buyers. Most often, these are decorative shells, which are eventually sold to the handicraft industry in towns and cities. Shells are sold per volume; usually a small 'Caltex' container or a drinking glass is used to measure the quantity. The price ranges from PhP20 to PhP40 (US\$0.4 to US\$0.7) per Caltex container. Finally, some coast-dwelling Agta, such as those from Kanaipang, collect sea-cucumbers from sea-grass beds. These are first dried and accumulated before trading them with local buyers. Prices per kilogram range from PhP200 to PhP300 (US\$3.6 to US\$5.4).

The situation is different for the commercial trade of lobster, which has in Isabela started in the early 1980s (see also M. Griffin 1996:17). During the study period, around six main buyers were operative along the Isabela coast. All but one of these are considered 'outsiders' by local residents. The last, however, originates from Palanan and resides in Bicobian Bay (Divilacan). He buys most of the other buyers' lobsters and grows them bigger in tanks before he exports them to Manila and beyond. One Agta fisherman from Dimasalansan is considering becoming a middleman himself. Lobsters bought from local fishermen are worth between PhP70 and PhP300 (US\$1.3 and US\$5.4) per kilogram and these are sold in Manila for up to three times the local price: between PhP200 to PhP1,000 (US\$3.6 to US\$17.9) per kilogram depending on the species, size and season.

Agta fishermen are renowned divers and are therefore much wanted labour for the lobster business. Although many Agta households indicate that lobster fishing is their most important livelihood activity, the available data with respect to household incomes from the lobster trade suggest that revenues are meagre (see table 3.12). Eight households from various coastal settlements in Divilacan averagely earned PhP13,750 (US\$277) over a six month period in 2004. Average monthly incomes ranged from PhP1,360 (US\$27) to PhP4,180 (US\$84), with an overall average monthly income from lobster fishing of only PhP2,290 (US\$46). As the observation period ran from May through October, during which lobster fishing is at its peak, it is unlikely that average incomes were higher during the remaining months of the year.

A typical payment for a lobster supply consists of a combination of cash and commodities.⁷¹ In most cases, during a transaction an advance for the next supply is received. Indeed, many Agta households build up almost insurmountable debts with their lobster buyers. This may be illustrated by the situation of the Dimasalansan Agta. By mid-2004 more than half of the group (around ten households) had taken up residence along the coasts of Dilasag, in the province of Aurora, on request of their lobster buyer. When these households returned to Dimasalansan one by one in the course of 2005, it turned out that their move to Dilasag had not been as voluntary as it had seemed at first sight. Instead, each of these families had been so heavily indebted to their lobster buyer, that they were forced to work for him. Most of these families had

⁷¹ For instance, a lobster fisherman from Divilacan who sold his catch of one week, worth PhP600 (US\$10.7), was paid 50 meters of fishing net, 5 kg of rice, two packs of instant coffee, ten pieces of candy, five bottles of lamp-oil and PhP100 (US\$1.8) in cash. In addition, four tobacco leaves, two glasses of salt, four glasses of sugar and PhP200 (US\$3.6) in cash were received on credit.

to pay back amounts of PhP3,000 to PhP4,000 (US\$53.7 to US\$71.6). Moreover, during their stay in Dilasag they had built up new debts not only with their lobster buyer, but with buyers of rattan and other products as well. They could only go home after all these debts were cleared.

Table 3.12 Income from lobster trade among eight Agta households in Divilacan May - October 2004

	Total kg of lobster sold May – October 2004	Average kg of lobster sold per month	Total income from lobster May-October 2004 in PhP	Average monthly income from lobster in PhP
Hh no. 1	97.5	16.3	19,274	3,212
Hh no. 2	63.2	10.5	12,640	2,107
Hh no. 3	53.7	8.9	10,740	1,790
Hh no. 4	46.8	7.8	8,145	1,358
Hh no. 5	46.7	7.8	9,340	1,557
Hh no. 6	66.8	11.1	13,360	2,227
Hh no. 7	127.5	21.3	25,056	4,176
Hh no. 8	58.8	9.8	11,440	1,907
Average	70.1	11.7	13,749 (US\$277)	2,292 (US\$46)

Agta fishermen

Both in the forest interior as well as along the coast, fishing is characterized by much broader participation than hunting. Although some do so more often than others, men, women, children, adults and elderly may all fish at times. For practical reasons, I will use the word ‘fisherman’ here to refer to anyone involved in fishing, regardless of their sex. It is exceptional for Agta not to be involved in fishing at all. If it occurs it is usually due to a physical inability, but even then, fishing is rarely given up (box 3.2).

Both girls and boys start fishing when they can still barely walk. Their skill gradually develops as they play in rivers or on reef flats just facing their dwellings, from where they are watched by older siblings, parents and grand-parents. By the age of six however, they contribute to the daily diet on a regular basis (see also Headland 1986:323) (photo 3.5). In fact, it is very often children who provide a few small fish for the upcoming meal, while their parents are busy with other activities. Their skills further develop by joining on day-trips with close relatives, who mentor the child and help out if necessary. Night-time riverine fishing is participated in as soon as the child is strong enough to face the currents. Although it happens, girls rarely join on such nightly trips. Women’s general participation in fishing decreases when they become mothers. Especially when they have more than one child to look after they hardly engage in fishing anymore. As soon as their oldest child is big enough to take care of younger siblings, women are often back to fishing again, albeit less frequently than men. Both men and women continue fishing up to the moment that their bodies have lost agility. By that time elderly people will share in their children’s and grand-children’s fishing catch.

As indicated before, among coastal households commercial lobster fishing is widely engaged in. This is predominantly a male activity. During the study period, 81 out of 87 coastal households (93%) from more than ten settlements⁷² were involved in the activity during at least part of the year. Around twenty of these households (25%) did this in Dilasag, which falls outside the boundaries of the Northern Sierra Madre Natural Park. The remainder (75%) directed their lobster fishing activities on coral reefs closer to home. Only six households (7%) were not at all involved in lobster fishing, half of which were elderly couples. The other half, all from Kanaipang, used to fish for lobster but had stopped doing so as they could earn more by collecting nests of the pygmy swiftlet, which are found in caves in the direct surroundings of Kanaipang (see below).



Photo 3.5 Josephine Matias fishing, Dipili, San Mariano August 2004

⁷² Dibubun, Dimasalansan, Dicaudang-udangan, Diaguan, Disokad, Dimatog, Diagu, Kabantiguian, Kalanatian, Disumangit and Kanaipang.

Box 3.2 Fishing accidents

William Plata was fourteen years old when his arm was bitten off by a shark. 'Before the day of the accident, a *Kristyano* man went fishing and got his net damaged by a shark. He went home without any catch and he asked me if I could find his net the next day. At about the same time, a *Kristyano* lady came to me and asked me to collect mangos for her the next day. It took me a moment to make up my mind, but I decided that I preferred to go fishing. The next day, I prepared my fishing spear and goggles and went fishing with two companions, Pedring Marquez and our *Kristyano* neighbour. We were fishing for half an hour, catching lots of fish. Then, I thought of the net which I was asked to find and set out to look for it. But I met a shark on my way. I did not feel that I lost my arm. I only felt that I was sinking deeper and deeper. Pedring saw this and swam right after me, saving my life. He took me to the hospital in Palanan, but I had lost so much blood that they did not know how to treat me. Elizalde (PANAMIN Chairman) helped me out. He brought me to Manila by airplane, where I stayed in hospital for a month.' Up to this day, Mr. Plata, who is now in his early fifties, is known as the one-armed, but highly skilled fisherman.

Time investment and fishing success rates

Other than hunting, which is best during the rainy season, fishing is preferably done during the dry, hot months when rivers and oceans are clear and predictable. In the rainy season, and especially during typhoons, rivers often get so murky and dangerous and the ocean becomes so rough that fishing simply becomes impossible.

Fishing trips vary in length from half an hour to several days and nights, depending on the location and the time of year. While the river-dwelling Disabungan and coast-dwelling Dimasalansan Agta averagely spent less than 2.5 hours per fishing trip, the Diangu Agta's fishing trips averagely took up nearly four hours (see table 3.13). Overall however, coast-dwelling groups spend much more of their time fishing than do their river-dwelling counterparts. With the exception of small children and elderly people, coastal camps are often deserted during large parts of the day as everyone is out fishing. The coast-dwelling Dimasalansan Agta, for instance averagely spent 26% of their recorded time fishing, while the river-dwelling Disabungan and Diangu Agta averagely were out fishing less than 5% of their time.

The ratio male versus female time investment considerably varies between these groups. In the Disabungan watershed, men spent almost three times the amount of time in fishing that women spent, and the coast-dwelling Dimasalansan men were out fishing more than twice as long as the Dimasalansan women. The river-dwelling Diangu Agta, in contrast, show remarkably similar male and female time investment in fishing.

Fishing seems a less ritualized domain than hunting. It was already mentioned that Agta believe malevolent spirits are considered to inhabit certain fishing grounds, but these spirits' powers are more often related to sickness and death than to bad fishing results. Nonetheless, Agta do consider fishing success to be influenced by the same supra-natural forces that influence hunting success. Thus, regular food offerings, and the respectful treatment of bones of eel in particular, are just as crucial for continued fishing returns as they are for hunting. Also, informants have mentioned

extensive joking during fishing trips as an explanation for bad fishing results on various occasions, as this would have offended 'those we cannot see'. However, it seems the elaborate offering- or cleansing rituals that were described for hunting are lacking.

Table 3.13 Fishing success rates in three residential groups 2004-2005

	Disabungan		Diangu		Dimasalansan	
	%		%		%	
Days of observation	33		29		25	
Number of fishing trips	24	100.0	53	100.0	91	100.0
Number of trips successful	21	87.5	52	98.0	85	93.4
Total weight in kg	12.3	100.0	63.4	100.0	155	100.0
Eel	5.3	43.0	27.1	43.0	-	-
Other	7	57.0	36.3	57.0	-	-
Average weight in kg per successful trip	0.6		1.2		1.8	
Total man-hours invested	109.5		364		345.0	
Men	94.5	86.3	303	83.0	180.5	52.3
Women	15	13.7	61	17.0	164.5	47.7
Adults	42.5	38.8	255	70.0	300.0	87.0
Adolescents	35	32.0	60	17.0	27.0	7.8
Children	32	29.2	49	13.0	18	5.2
Hours invested per kg of fish	9		5.7		2.2	
Average length of fishing trip in hours	2.3		3.8		2.2	

Fishing tools and strategies

The Agta use a very modest set of fishing equipment. River-dwelling residential groups almost exclusively rely on spear-fishing and do not use boats as this is impractical on the rocky rivers of the forest interior. Many coast-dwelling Agta have a little more varied fishing repertory that includes the use of nets and hooks. Coast-dwelling Agta sometimes borrow motorized outrigger boats (*bangka*) from non-Agta fishermen to fish in deeper waters. Some coastal *barangays* have several of these boats for communal use. In addition, between 1997 and 2003 NGOs have distributed a small number of (motorized) *bangkas* as well as fishing lines and nets among coastal Agta settlements. These were intended to uplift the Agta's fishing returns, but soon after their dispersal conflicts over the materials' ownership and maintenance arose within the targeted residential groups. Hardly any of it was still in use during the time of research.

Spear fishing

The most frequently followed fishing strategy among both river-dwelling and coast-dwelling Agta is spear fishing (*magbéttek*). The Disabungan Agta went spear fishing

on 96% of their fishing trips and this generated almost all of their catch. The Diangu Agta devoted 87% of their fishing trips to spear fishing and obtained 88% of their catch that way. The coast-dwelling Dimasalansan Agta spear fished on only 42% of their fishing trips and this resulted in 46% of the total generated weight (table 3.14).

Table 3.14 Freshwater fishing strategies and returns in three residential groups 2004-2005

	Disabungan		Diangu		Dimasalansan	
	%		%		%	
Days of observation	33		29		25	
Number of fishing trips	24		53		91	
Number of day trips	23	95.8	46	86.8	88	96.7
Weight generated in kg	11.75	99.6	29.7	47.0	147	94.8
Number of night trips	1	4.2	7	13.2	3	
Weight generated in kg	0.5	0.4	33.8	53.0	8	5.2
Number of fishing trips per method						
Spear	23	95.8	46	86.8	38	41.8
Hand	0	0	6	11.3	15	16.5
Line	0	0	1	1.9	9	9.9
Net	1	4.2	0	0	29	31.9
Weight in kg generated per method						
Spear	12.25	99.6	55.7	88.0	70.5	45.5
Hand	-	-	3.2	5.0	12.0	7.7
Line	-	-	4.5	7.0	44.0	28.4
Net	0.05	0.4	-	-	28.5	18.4

River-dwelling Agta spear fish in pools, rapids and shallow parts of rivers and creeks. Coast-dwelling Agta target the edges of reef flats as well as pools on top of reef flats. Spear fishing is done individually or in small groups. Little is known about underwater co-ordination and team-work, but it seems fishermen may work together in spearing larger animals like octopus or eel (Minter, Goslinga and Persoon 2007:6). Women and children usually fish in relatively shallow and calm waters. They either stand in the water up to the waist, dipping their head under the water surface awaiting their chance to trigger their spear, or they dive in deeper river-pools, coves, reef flat pools and trenches. In the hot months, when octopus retreats to cool and deeper water, adult women in coastal areas may also dive behind reef flats. Men more frequently fish in rougher waters, which involves a lot of diving underneath rocks, caves and corals. Depths of around five meters are reached.

A combination of self-produced tools is used which hardly varies between and within residential groups. A spear (*bétték*) is constructed from an iron rod with barbed tip. An attached rubber band allows for it to be propelled. This spear is used to catch any kind of smaller and medium sized freshwater and marine fish. Many coast-dwelling fishermen also own a spear-gun (*alkabos*), which is a larger version of the normal spear, adjusted to a wooden body and connected to a stronger elastic band to trigger it (see also Minter, Goslinga and Persoon 2007; Rai 1982:94). They sometimes wear a self-made flipper on one foot in order to increase under-water speed and

manoeuvrability. When fishing for eel or other large fish, river-dwelling Agta use a removable barbed arrow (*katal*), which is connected to a tiger-grass shaft with a nylon rope. When the eel is caught, the rope is released and the fisherman kills the eel by slamming it onto a rock while holding the shaft. In order to maintain clear vision while spear fishing under water, each fisherman has a pair of home-made goggles. These usually have a wooden frame, (fiber)glass spectacles and a rubber band to firmly position the goggles to one's head. According to Rai (1982:94) goggles were introduced by the Japanese in the early twentieth century. When fishing at night a torch is needed. These, and the batteries on which they run, are bought in village and town centres and are often made semi-waterproof by tightly wrapping them with rubber string.

Especially in inland-areas, fishing is regularly done at night. Eel, which resides inside holes during day-time, is active during the night and can then be more easily speared. Other smaller species, like tilapia, sleep at night hiding near river banks where they can also be easily shot. Night-time fishing is therefore often relatively successful. The Disabungan record contains only one overnight fishing trip, but this generated 4% of the total generated weight. The Diangu Agta went fishing at night on 13% of their recorded trips and this generated as much as 53% of the total generated weight. The coast-dwelling Dimasalansan Agta were not observed to carry out night-time fishing during the study period.

Manual collection

Much freshwater and marine life is collected with bare hands. This is mostly but not exclusively a task of women and children. River-dwelling Agta pick shells, small crabs and shrimps from river beds. In shallow stretches of rivers and creeks the stream may be temporarily diverted by putting up small dams. Downriver of the dam, the water level will fall after which small fish, shells and shrimps can be hand-picked (Doornbos 2008:17-8). The Diangu Agta have copied this strategy to their irrigation canal. They frequently close its inlet to facilitate manual fishing. While the Disabungan Agta did not hand-pick any of the catch in their record, the Diangu Agta manually collected freshwater species on 11% of their fishing trips and this generated 5% of the total catch (table 3.14).

Coast-dwelling Agta more often follow this strategy. The Dimasalansan Agta, for instance, manually collected marine animals on 17% of their fishing trips and this resulted in nearly 8% of the total catch. At low tide, women and children collect sea cucumbers from sea grass beds or they set out reef gleaning, searching for shells and crabs on the corals and beach side rocks. Bare hands, machetes and a special hooked spear (*dudu*) are used to pull crabs from their shelter. Lobsters are also manually collected during the rainy season. Unlike other gathering activities, lobster collection is mostly a men's task. It is done at night and the best moment is when the tide changes from low to high, as lobsters are then washed on to the reef flat. Collectors may wear gloves to protect their hands. Bright lights are used to spot the lobster and to avoid hurting oneself on the reef flat. These are either battery powered (*tribulayt*), or oil fed lamps (*coleman*). In recent years, NGOs have distributed a number of these costly

lamps⁷³ among coast-dwelling Agta. Some lobster buyers also provide their Agta suppliers with these lamps, while a few fishermen have purchased their own (Minter, Goslinga and Persoon 2007:9).

Net-fishing and trapping

The use of nets is more common among coastal groups than in inland areas. In the Dimasalansan record, for instance, nearly one third of all fishing trips involve the use of nets, generating over 18% of the total catch. In contrast, the Disabungan Agta used nets only once in their record, while none of the Diangu Agta's recorded fishing trips involved the use of nets (table 3.14).

Some river-dwelling groups occasionally use self-produced fishing nets for a communal fishing technique, which depending on the location, is called *uda-od* or *kalasakas*. This method seems especially popular among the Agta of San Pablo, Tumauini and the northern part of San Mariano, while it has not been observed elsewhere. Only small fish are caught this way. A large, nylon net, is sunk to the bottom in a shallow part of the river. Women and children line up around 20 meter downstream of the net, kneeling down in the water holding a rattan rope with empty tins and banana leaves. The group then drives the fish into the net by slowly moving the rope in upstream direction towards the net. Additional persons help driving the fish into the net from either side of the river, by slapping on the water with branches and throwing stones inside. When the group reaches the net, it is quickly lifted from the water and taken to the river side where the catch is removed before the process is repeated (see also Doornbos 2008:19).

Apart from above mentioned *udaod*-net, which is only used communally, river-dwelling Agta do generally not own or use nets for individual use. Only one informant from Dipagsanghan (Palanan) owns fishing nets, while a few others indicate that they used to have one but did not know how to repair it when it got damaged. Fishing nets are incidentally borrowed from non-Agta, or Agta participate in communal fishing activities of non-Agta fisher folk. In such cases the catch is divided between the net-owners and the net-users.

Although coast-dwelling Agta more often own fishing nets, in a sample of 31 coastal Agta households from Divilacan and Palanan, only 16% of the respondents did so. These nets come in two main types. The *tabukol* or *sabod* is a circular throwing net, which is used in shallow and quiet waters during incoming tide. It is most effectively used with two people, often a husband and wife or parent and child. The second person helps in reassembling the net and removing the catch from the mesh before it is thrown again. The *siggay* has a long and rectangular shape. It is also used in teams of two people. One of the two slowly walks through shallow water on preferably sandy bottom without too many rocks. When a group of fish is spotted it is encircled by releasing the net in the water bit by bit. The helper is throwing stones in the water and slaps on the surface with a stick in order to direct the fishes towards the net. Afterwards, the fisherman and helper reassemble the net and remove the fish from it before repeating the process. The *siggay* can also be used as a trap, which is set-up in the evening and is checked the next morning.

⁷³ Prices range from PhP1,200 to PhP1,500 (US\$21.5 to US\$26.8).

Those who do not own fishing nets may borrow one from relatives or nearby villagers. Usually this is on the agreement that one-third to half of the catch is for the net-owner. In above mentioned sample, 39% of the respondents say they frequently borrow nets. The remaining 45%, however, neither own nor borrow fishing nets. Most of them motivate this by saying that they do not have the skills to repair the nets when they get damaged and that they fear conflicts about the sharing of catch.

As mentioned, while lobsters are manually collected during the rainy season, during the dry season they retreat to cooler and therefore deeper waters where they are caught using lobster-traps (*bentol*). These are widely used by coast-dwelling Agta. *Bentol* are obtained from the buyer and the cost of the traps is deducted from the eventual payment. Lobster fishermen are either dropped in a particular site with their buyer's outrigger boat, or they fish for lobster independently in the surroundings of their (temporary) beach dwellings. Each fisherman manages a set of traps and individually owns the catch so generated. The number of traps set-up per fishermen highly varies, ranging from seven to one hundred at a time. Lobster traps consist of a circular iron frame connected to funnel shaped mesh. A plastic pipe containing bait is placed inside the funnel, after which the trap is tied to corals at up to five meters depth (photos 3.6 and 3.7).

The distance between traps is around two meters. Traps are checked once a day, usually in the morning and often in combination with spear fishing activities. The diver descends in the water either from the reef flat or from an outrigger boat and dives down to his traps. Some lobster fishermen develop ear-problems as a result of their lengthy and deep dives. All traps with catch are taken out to the beach, as most of them will need repair. The lobsters are carefully removed and selected. Dead or damaged lobsters as well as by-catch (usually crabs) are consumed within the household. Officially, lobsters with a carapax length of less than 2.5 inch cannot be sold. In practice, however, lobster buyers do not follow this regulation and thus only a few lobster fishermen indicate that they actually throw back lobsters which come under the required size. The live and in-tact lobsters are stored in a rattan basket, which is tied to submerged coral rocks close to the shore. The accumulated catch is either delivered to the buyer, or the buyer picks it up by boat. Depending on the season and the time of the month, buyers visit their Agta suppliers between once and twice weekly.

Lobster fishing is least successful during full moon, when the lobsters see the traps and move around them. Traps are continuously set-up in one site for up to four days, after which the catch will decrease and traps have to be replaced to more productive fishing grounds. Informants generally indicate that after the lobster stocks in a certain area have decreased, it takes about four days for it to recover. Lobster fishing is therefore an important driver of mobility. This usually does not involve large distances.

Hook and line fishing

Hook and line fishing (*agbaniit*) is practiced more commonly among coast-dwelling groups than in the forest interior. In above mentioned sample of 31 coast-dwelling households, 23% own hook and line equipment. The Dimasalanan Agta used it on nearly one third of their fishing trips and it generated 10% of their total catch. River-dwelling Agta, in contrast, hardly ever fish with hook and line. Hook and line fishing

may be done from the beachfront, while in other cases lines are set-up using outrigger boats in coves. In Dimasalansan Cove, for instance, a team of two men works together in setting-up around ten fishing lines every evening, checking them every morning. Attached to a heavy stone, a line and baited hook are sunk to the sea bottom to around ten meters depth. A polystyrene foam floater, connected to a separate line helps the fishermen to locate their lines when they come to check them after twelve hours. Lines are in principle only set-up on sandy bottoms as the hook easily gets entangled in the corals, while the sinking stone may also damage the reef. Hook and line fishing is often effective and generates bigger fish than net and spear fishing. Much of the catch is therefore traded.

Electro-fishing, poison fishing and dynamite fishing

Because of their simplicity, Agta fishing methods are often selective and less destructive than the techniques used by non-Agta (Linnebank 2001:53; Doornbos 2008:53-5). Indeed, the use of several destructive fishing methods in the Northern Sierra Madre Natural Park is largely limited to non-Agta fisher folk.

River-dwelling Agta lament that fishing stocks are dwindling due the extensive practice of electro-fishing (*agkuryente*) by non-Agta. An electro-fishing device consists of a car-battery which is connected to two steel rods. The fisherman carries the device on his back and sticks the iron rods underneath rocks, targeting eels and other bigger fish species. These go numb when given a voltage jolt and float to the water surface where they are collected (Giebels 2005:39). The occurrence of electro-fishing among Agta is very low. Only one man from a settlement called Makihawe in Tumauini is known to possess electro-fishing equipment. In some cases, however, Agta may fish on the request of and with electro-fishing equipment belonging to non-Agta.

Rai (1982:95) mentions the Agta's use of various poisonous plants as well as chemical poisons, in particular cyanide balls, for fishing. Although it is illegal, the use of cyanide is by now widespread in the entire Northern Sierra Madre. The Agta however in general disapprove of it and do not seem to use this or any other poisonous substance themselves. Only one man from the Disabungan watershed mentioned he considered using cyanide in the future. In the coastal areas, Agta produce natural poison from the seeds of the *biton* tree (unidentified species). When put in coral holes fishes are stunned and can be easily speared. This practice has never been observed during the study period however.

Dynamite fishing, in which an explosive is thrown to a river bottom or coral reef is another illegal but nonetheless regularly practiced strategy in the Northern Sierra Madre Natural Park. The Agta perceive this as very problematic. The high level of destruction caused by this method undermines the effectiveness of the Agta's main fishing strategies. Only one anecdotal case of an Agta man's use of dynamite fishing has been recorded during the study period. As the story goes, although the culprit went unpunished, other Agta sharply condemned him for this offence.

Fishing patterns through time

As in the case of hunting, for the river-dwelling Disabungan and Diangu Agta we have data to compare time investment rates in fishing through time. In both areas female time investment in fishing has considerably fallen. The Disabungan women were out fishing 6% of their time in the early 1980s (Rai 1982:232), but were so only 2.6% of their time in the current study. In the same period, the Diangu/Nanadukan Agta women decreased their time spent fishing from 11.5% (Estioko-Griffin 1985:28) to 4.4%. For men, the picture is ambivalent. While Diangu/Nanadukan male time investment in fishing plummeted from 20%⁷⁴ in the early 1980s to 4.4% now, the Disabungan men increased their time invested in fishing from only 2.5% in the early 1980s (Rai 1982:232) to 7.6% during the current study. As we have seen, this happened mostly at the expense of hunting.

What could explain for the Disabungan anomaly? Comparing the various groups in terms of fishing success rates may help in finding an answer to this problem. Rai (1982:96) already called the man-hour return of inland river-dwelling Agta groups 'insignificant' more than twenty years ago, while he observed that the coastal watershed groups got a better return in fishing. Indeed, the current record confirms that despite considerable time investment in fishing among the river-dwelling Disabungan and Diangu Agta, rates of return have even further decreased. The Disabungan Agta are off worst. While they needed four man-hours of work to procure one kilogram of aquatic protein in 1980 (Rai 1982:96), this figure has more than doubled in the past twenty five years. Doornbos (2008:24) reports similarly low return rates from freshwater fishing for the Disulap Agta, who reside immediately north of the Disabungan Agta. They invest as many as 9.9 man-hours for every kilogram of fish that they obtain. The situation is a little less grim in the Diangu watershed, across the mountain range, but even here only one kilogram of aquatic protein is generated for every 5.7 man-hours of time invested. As Rai (1982:96) already observed, rates of return are still much more favourable in the coastal areas: the Dimasalansan Agta need 2.2 hours of work to generate one kilogram of aquatic protein.

One possible explanation for the Disabungan men's increased time investment in fishing is that either Rai's data show a downward distortion, or my own data show an upward distortion with respect to the relative amount of time spent in fishing. More likely, however, the explanation lies in the impact of environmental degradation on fishing returns. Again, Agta throughout the Northern Sierra Madre Natural Park report that logging operations have a direct negative impact on fish stocks as river banks get eroded and water polluted. The situation further aggravates as incoming loggers and others intensively fish using unselective and highly destructive fishing methods. These include the use of cyanide, electro-equipment and dynamite. As we have seen, these methods are rarely used by Agta fishermen, who disapprove of them (see also Doornbos 2008).

Indeed, depending on the level of environmental disturbance, fishing returns differ considerably within the protected area. Judging from interviews and incidental observations, freshwater fishing returns are lowest in the logging concession area in

⁷⁴ This is the average of wet- and dry-season records. For men this was 11.9% and 28.2% respectively, and for women 13.6% and 9.4%.

Dinapigue. Here, informants say that fishing simply is no longer worthwhile and they hike to watersheds which fall outside the concession area if they wish to fish. This is mainly because incoming loggers use destructive fishing methods on a large scale. Moreover, logging itself causes erosion, which in turn makes the rivers murky, thereby impeding under-water visibility. Fishing is better, but still poor along much of Disabungan, Catalangan and Disulap rivers in San Mariano and in the lower portions of Divilacan river. Rates of return are highest upstream along Palanan and Blos rivers on the Pacific side of the mountain range. Here, high calorie species such as eel are still relatively abundant and fishing trips have been observed to generate higher and more diverse catch than elsewhere. Moreover, it seems that even identical species grow bigger and fatter in the less disturbed Pacific than in the western watersheds. Thus, I would like to suggest that the main reason that Disabungan men have increased their time investment in fishing is that they simply had to. As fishing has become such a time and energy consuming task, women have minimized their time investment in the activity while men were forced to further increase theirs because other than hunting, which is also decreasingly successful, there is no alternative way to generate animal protein.



Photo 3.6 Agta fisherman showing his lobster catch, Dibubun, Divilacan, April 2005



Photo 3.7 Repairing lobster traps, Dikaberitbitan, Divilacan, July 2005

GATHERING

The Agta of the Northern Sierra Madre Natural Park engage in a variety of gathering activities, which I define as the collection of undomesticated resources from forests and beaches. This thus excludes the collection of animal resources from river beds and coral reefs, such as shells and sea-cucumbers, which I regard as fishing, not gathering, and which were therefore discussed in the previous paragraph. It also excludes the collection of timber, with which I will deal in a separate chapter. The Agta's gathering activities can be roughly divided into subsistence and commercial gathering. Subsistence gathering entails collection for home use. Although part of the items procured through subsistence gathering are occasionally sold to nearby farmers or loggers, such supply-driven trade is marginal and irregular. Commercial gathering is primarily directed towards the gathering of products for sale. The resulting trade is largely demand-driven. The items thus collected are not put to household use, except when they are damaged or otherwise of inferior quality. Here I will discuss the Agta's subsistence- and commercial gathering practices. I will thereby follow a different set-up than in the foregoing two sections. Instead of ending with a discussion of the changing historical significance of gathering activities, I will start with a brief overview of the shifting relative importance of subsistence- and commercial gathering before describing each of the two in detail.

Subsistence and commercial gathering through time

It was already mentioned at the outset of this chapter that the Agta's pre-historical dependence on gathering has likely much decreased as they entered into trade relationships with Austronesian farmers some 3,500 years ago. Although ethnographic documentation of the Agta's more recent involvement in gathering activities shows considerable fluctuations through time and space, quantitative and qualitative information points to a further overall decrease of what is here called subsistence gathering (table 3.15). This is primarily caused by a diminishing dependence on wild food items. The Agta have wider access to domesticated starch both because of the increased presence of non-Agta, and because of their growing involvement in agricultural production. A second possible, yet unproven, explanation for the decline of subsistence gathering is the increased scarcity of certain wild plant resources as a consequence of logging operations as well as the Agta's harvesting procedures (Rai 1990:100; Allen 1985:61-5).

Thus, time investment in subsistence gathering activities is minimal throughout the research area. In 2004-2005, the coast-dwelling Dimasalansan Agta were the least active subsistence gatherers, spending not even 1% of their time in such activities. The river-dwelling Diangu and Disabungan Agta spent less than 3% and 4% of their time in subsistence gathering respectively. Women spent relatively more of their time in subsistence gathering than men, a pattern which is also reflected in other studies summarized in table 3.15 and which lead to the famous 'Woman the Gatherer' paradigm (Dahlberg 1981). The only exception are the Diangu Agta, which can be explained by the fact that, as a consequence of typhoons, exceptionally much

construction activity was undertaken during two of the three observation periods. Most of the materials needed to rebuild dwellings were collected by men.

While subsistence gathering is indeed on the decline, for most residential groups gathering for commercial purposes is of great importance. Interestingly, in contrast to subsistence gathering, men tend to spend relatively more of their time in commercial gathering activities than women. Rattan is by far the most significant commercially collected product, as has also been shown by Clark (1990) and Headland (1986). In 2004-2005, the Dimasalansan and Disabungan Agta spent around 13% and 12% of their time in various commercial gathering activities respectively. Lacking marketing possibilities, the Diangu Agta did not engage in commercial gathering activities at all.

Table 3.15 Time investment in gathering by various Agta groups from 1979-2005 as % of total time expenditure.

Location, date and source	Type of gathering	Male	Female	Average ¹
Disabungan 1979/1980 (Rai 1982:232)	Gathering	0.6	24.6	10.3
Nanadukan 1980/1981 (Estioko-Griffin 1985:28)	Gathering	4.5	7.3	5.9
Casiguran 1983/1984 (Headland 1986:468)	Gathering Rattan work (commercial)	0.2 33	1.1 17	0.7 25
Dumayas 1985 (Clark 1990:66)	Gathering Rattan work (commercial)	0.9 20.8	12.9 15	6.9 17.9
Disabungan 2004-2005	Subsistence Commercial	1.4 14.1	5.9 9.2	3.7 11.7
Diangu 2004-2005	Subsistence Commercial	3.1 -	2.5 -	2.8 -
Dimasalansan 2004-2005	Subsistence Commercial	0.4 14.2	1.3 12.7	0.9 13.4

¹ With the exception of Rai (1982:232), who presents average time-expenditure himself, other averages have been computed on the basis of available information. In the case of Estioko-Griffin (1985) and Clark (1990) averages have been computed from the time expenditure data they present for rainy and dry seasons.

Subsistence gathering

Agta women, children and men engage in subsistence gathering for consumption, medicinal and household use. Gathering takes place just behind the beach front, along river beds as well as in higher elevation montane forest, which is specifically targeted for certain wild tubers (Allen 1985:56). Rai (1982:90-3) describes the Agta's gathering activity as opportunistic rather than purposive. It will be demonstrated here that although any opportunity to collect desired products is indeed made use of, much of the Agta's subsistence gathering is actually purposive. Fruit bearing trees and honey

combs are often watched over time by hunting parties before they are harvested. Likewise, specific gathering parties of one or several persons may set out to collect betel nut or wild tubers when there is a desire to consume these products. Those who need construction or manufacturing materials will look for them in the vicinity of the camp. If someone is sick, or about to deliver, specific plant resources are sought by relatives. If hunting has remained unsuccessful over time, and a cleansing ritual needs to be performed, the necessary plants will be gathered by those who have the knowledge to find and use them. At the same time however, every opportunity to harvest fruit trees that are passed by on the way is eagerly taken, while any other valuable resource may be likewise collected when encountered.

Consumption

As Hayden (1981:353) rightly remarks, estimates of the contribution of gathering to hunter-gatherer diets are rarely quantified and usually highly subjective. This is especially so because they do not take into account the contribution of snacks, which are often consumed during foraging trips. Indeed, no data exist to quantify the contribution of gathered foods to the Agta diet, but the little available information suggests that the importance significantly differs between coast- and river-dwelling Agta. The coast-dwelling Dimasalansan Agta, for instance did not consume gathered wild plant foods during any of the 90 meals in their 2004-2005 record. The river-dwelling Diangu Agta did so at 16% of their meals (n=102), and the Disabungan Agta ate gathered plant foods as part of 44% of their meals. The Dimasalansan Agta's infrequent consumption of wild plant foods is probably due to the relatively large distance they need to bridge in order to reach the forest as compared to swiddens and coconut plantations, from which they more often obtain plant foods. The disparity between the two river-dwelling groups illustrates their different emphasis on domesticated plant resources. As we will see in Chapter V, the Diangu residential group is more intensively involved in agriculture than the Disabungan residential group, which is reflected in the latter's more frequent intake of gathered plants.

Although Allen (1985:58) notes that 'vegetables are almost non-existent in the [...] Agta diet', at present it appears that the most often obtained and consumed wild plants are indeed vegetables. An extensive survey of plant utilization among the Agta of the Northern Sierra Madre Natural Park by Garcia and Acay (2003:81-2, 2002),⁷⁵ demonstrates that the Agta use 29 plant species as vegetable. Of these, I observed fern shoots (*pako*) (*Deplazium esculentum*) to be most frequently collected from river banks in the vicinity of the camp. The hearts and shoots of various (rattan) palms, notably *sakung* (*Palmae* sp.), *agal* (*Caryota* sp.) and *anibung* (*Palmae* sp.) were also regularly brought back to the camp by river-dwelling Agta. As this requires the felling of the palm tree, this is more often done by men than by women.

⁷⁵ In the following, I will repeatedly refer to the results of this survey, which were first compiled in a report (Garcia and Acay 2002) as part of the first phase of the Northern Sierra Madre Natural Park Conservation Project, implemented by PLAN International Philippines (see Chapter VI), and later partly published locally (Garcia and Acay 2003). Most scientific names used here are derived from Garcia and Acay 2002.

Wild tubers are another important food item Agta collect (table 3.16). Rai (1982:91-2) reports that two-thirds of all time invested in gathering by the Disabungan Agta in the early 1980s went to the collection of wild starch. The tubers may be obtained year-through, but are in practice more often collected during the lean rainy months. *Bungalo*, *bukiang*, *sigig* and *ilos* (*Dioscorea* sp.) are the most frequently collected tubers. According to Allen (1985:58) all four of these are high in nutritional value. The first three are the easiest to find, while *ilos* is said to be common but very deeply rooted. Many informants say they nonetheless prefer *ilos* because it has the best taste, while *sigig*, which is relatively easy to obtain because it roots least deeply, is not preferred because of its bitter taste. The presence of a particular tuber is recognized by vines and leaves crawling over the forest floor. While some informants indicate that wild tubers are still abundant, others in (former) logging concession areas say that they are today only found on ridges because the lower river terraces are often disturbed by logging (see also Rai 1990:100).

It is women's task to dig up the roots, sometimes from holes deeper than their own length. In some locations the forest floor is therefore dotted with narrow, but deep excavations. Split bamboo poles and knives are used to retrieve the tubers (Rai 1982:91). Small parts of the tubers are left in place, in order to ensure their re-growth. Digging roots is a laborious and tough task. According to Rai (1982:92), it takes an Agta woman one hour of work to gather 1 kg of yam. His informants told him that they ate wild yams whenever they were 'tired of eating rice'. Informants to the current study similarly said that they will only dig for tubers if they long for their specific taste or when they run out of rice. Yet, many Agta today display a certain amount of shame or even aversion when looking back at times when they relied on wild tubers more heavily. Understandably, women in particular make it clear that they do not wish to go back to such a reliance on the forest. A man from the Diangu watershed, however, whose wife dug up a large *sigig* during a trip to the forest, told us: 'We will bring down the *sigig* because even though we now have many things to eat down there [in the camp], we still don't forget the food we already had before.' All this suggests that even though the Agta may not have completely relied on wild tubers as a staple, they certainly were, and to some extent still are, of great importance to the Agta diet.

Table 3.16 Wild tubers collected

Agta name	Scientific name	Habitat ¹	Nutritional value ²
<i>Bungalo</i>	<i>Dioscorea luzonensis</i>	Montane forest	High
<i>Bukiang/Bugayong</i>	<i>Dioscorea</i> cf. <i>hispida</i>	Cloud forest	High
<i>Sigig</i>	<i>Dioscorea</i> cf. <i>esculenta</i>	Stream terraces, ridges	Low
<i>Ilos</i>	<i>Dioscorea filiformis</i>	Stream terraces	High
<i>Segday</i>	<i>Stenomeris dioscoreaeafolius</i>	Stream terraces	High
<i>Balo</i>	<i>Rubus fraxinefolius</i>	Higher elevations	-
<i>Baay</i>	<i>Pueraria thunbergiana</i>	Higher elevations	-
<i>Mapet</i>	<i>Dioscorea bulbifera</i>	Stream terraces	Moderate

¹ Based on Rai (1982:92) and Allen (1985:58).

² Based on Allen (1985:58).

Towards the end of the dry season many trees bear edible fruits, which are mostly collected by women and children. Garcia and Acay (2003:81) have identified sixty different fruit bearing trees of which the Agta collect the fruits. Of these, I observed rattan fruits (mostly *alimuran* and *sahedsahed*, *Calamus* sp.), wild rambutan (*bulala*, *Nepehelim* sp.), wild guava (*bayabas*, *Psidium guajava*), *pudo* or *balo* (*Rubus fraxinefolius*) and *balagwesan* (*Myrtaceae*, *Syzygium tripinnatum*) to be most often collected. Fruits are either harvested by climbing the tree and chopping off all fruit bearing branches, or (in the case of wild rambutan) by cutting down the entire tree. In case wild fruits are collected in large quantities, a surplus may be sold to nearby villagers. This is rare in the western watersheds, but does occur in the coastal areas, where three to five pieces of fruits are sold for one peso (US\$0.02).

Most Agta are avid chewers of betel nut (*bua*, *bunga* or *mama*), which is collected from the betel palm (*Areca* sp.) by either cutting off the clusters of nuts, or again by chopping down the entire tree.⁷⁶ Small parties of women and children regularly set out for specific parts of the forest to collect the nuts which they then distribute among family members. The betel nuts are preferably wrapped in *litlit* leaves (*Piper* sp.), but if these are not available the leaves of *anupol*, or *lumot* (*Poikilospermum* cf. *acuminatum*) are acceptable substitutes (Allen 1985:59, 63; Garcia and Acay 2003:85). The package is completed by adding a layer of lime from burnt and pounded molluscs. Agta say that the nuts and leaves warm the body, while the lime strengthens the teeth and prevents toothache. Moreover, sharing and jointly chewing betel nut is of social importance. Agta therefore always carry a small stock of the necessary ingredients in their *pagmamaan* (betel nut pocket). Apart from being a consumptive, betel chew is used in healing practices (see below).

Another food product that is eagerly gathered from the forest whenever available is honey (*kalabi*). The best honey is collected from combs in the *mayapis* (*Shorea palosapis*), *narra* (*Pterocarpus indicus*) and *tangile* (*Shorea polysperma*) trees from March to May. Agta distinguish between three kinds of honey bees, *giyaw*, *pitukan* and *palég* (Rai 1982:93). Collecting honey typically is a men's task. The bees are smoked out of their hive by burning a collection of palm leaves (*sakung*, *Palmae* sp., and *saggit*, *Pterocarpus indicus*) at the foot of the tree while asking the bees to find another house. When the hive is completely abandoned, one or more men or adolescents climb up the tree carrying a large *sakung* leave in which the comb is later stored. Although some honey harvesters deny doing this, others say that before taking down the comb they explicitly ask permission to do so to *Aduho*, (in this case 'the guard of the bees', see Chapter II). This is said to be a simple phrase like, '*Aduho*, please allow us to take the house of the bees who have already found another place.' The hive is cut from the branch with a machete and then carried down the tree wrapped in previously mentioned *sakung* leaves. Depending on the composition of the harvesting team, the honey, the comb and any remaining larvae are either consumed on the spot or brought back to the camp. In either case, a small part of the comb is left behind on the forest floor to appease *Aduho* and other spiritual beings.

The frequency with which honey is collected varies per year, location and individual. Four to five times per season seems to be about the maximum. Despite the

⁷⁶ Allen (1985:83) points out that local shortages of the product exist, and suggests this is probably due to the drastic harvesting procedures used.

great nutritional value of honey, its sporadic availability makes it an unreliable component of hunter-gatherer diets (see also Hayden 1981 and Jenike 2001). While most households prefer to consume all the harvested honey whenever it is there, others sell part of it in bottles of various sizes and prices, ranging from PhP50 to PhP500 (US\$0.90 to US\$8.95). In the coastal settlements, honey is incidentally sold in village and town centres, while in the interior settlements loggers are more likely buyers. In neither case does honey bring in a regular income. In this study, the highest number of bottles sold in one season amounted to ten, this being the combined harvest of several households in Dimatog (Palanan).

Medicine and ritual

Of over 300 identified plant species used by the Agta of the Northern Sierra Madre Natural Park, nearly half serve medicinal purposes. These plants are processed in various ways to cure gastrointestinal sicknesses, malaria, body aches, post-natal weakness, eye, ear- and dental problems, fever, flu, respiratory diseases, skin disorders, bone fractures, cuts, wounds and insect bites (Garcia and Acay 2003:78-81).⁷⁷ Among the most frequently used medicinal plants are *bankodu* (*Morinda citrifolia*),⁷⁸ which serves as de-worming treatment; *mahabanuang* (*Clerodendron intermedium*) and *milmil* (*Entada meedii*) for the treatment of stomach aches and diarrhoea; *makayaskas* (*Litsea* sp.) for treating fever; and *sinamad* (*Discocalyx cybiantoides*) to treat diphtheria. Garcia and Acay (2002:8-12) emphasize that the processing procedure of each of the utilized plants, is perceived to be vital for their curing properties. Thus, plant components may need to be warmed, chewed, crushed, burnt or boiled prior to their medicinal use. The heating of the *mahabanuang* leaf, for instance, is considered necessary for activating its ability to cure stomach aches, while the active parts of the other above mentioned plants need to be boiled, after which the patient is to drink the water.

With respect to the collection of plants for ritual purposes, I only found the use of particular plant parts in earlier described three-step ritual to remove hunters' bad luck (*magsugosug*, *magdigus* and *magtotod*). Allen (1985:62), however, states that the Agta use at least 16 (unspecified) plant taxa for additional ritual purposes such as stopping rain, lightning and thunder, keeping away bad spirits, attracting lovers and training hunting dogs. Rai (1982:92) further reports that the *caryota* palm (*Caryota* sp.) has symbolic significance in wedding feasts and as gift to kinsmen in distant camps, but noted that in the late 1970s it was only collected during the peak of the northeast monsoon season. I only incidentally observed use of *caryota*, and this solely served consumption purposes.

⁷⁷ T. Headland and J. Headland (1974) have documented Agta names for over 200 plants among the Casiguran Agta. Allen (1985:62) claims around 40 plant taxa are used by the Agta for medicinal use, but these are not specified down to the species level.

⁷⁸ The healing properties of this particular plant have long been recognized by Indonesian peoples, and have also been scientifically demonstrated (Dharma 1981:26).

Household use

One of the most important and frequent gathering activities within the household sphere concerns collecting fuel wood. Usually in the late afternoon, women, children and occasionally men set out looking for stems, branches and twigs in the direct vicinity of the camp. In general this does not take more than an hour. Garcia and Acay (2002:35) report that the Agta of the Northern Sierra Madre Natural Park use 11 tree species for this purpose.

The construction of a new dwelling or repair of an old one likewise requires purposive gathering. Men usually cut and bring home the wooden and bamboo poles needed for construction of the floor and roof. In logging areas, sawn timber is increasingly used for house construction as well. Women collect the leaves of various palm species (mostly *Alimuran*, *Calamus* sp.) with which the roof is covered. Plant barks, rattan cords (*Palmae* sp.), an unidentified fern called *amulong*, as well as *nito*⁷⁹ (*Lygodium circinnatum*) are usually used for producing ropes to thatch roofs and walls (see also Garcia and Acay 2002:33).

Women and children regularly collect long leaves called *bidiyo* (*Pandanus* sp.). *Pandanus* is found just behind the beach as well as deeper in the forest. The leaves, after they have been dried and the thorny edges have been removed, are used as weaving material. While sitting on the floor, women prepare strips of around 1 cm in width and up to 3 m in length and weave these into mats and baskets. A polished and pointed bamboo stick is used to facilitate the sliding of the *bidiyo*. The weaving material is usually not dyed, but may be coloured using for instance *bangkodu* (*Morinda citrifolia*) fruits. Most of these woven products are used within the household to sit and sleep on and to store clothes in, although some women produce them on order as well (see below). Weaving is an activity which is often combined with quiet conversation or listening to the radio. It takes place especially in the early morning and late afternoon. If a source of light is available, work may continue at night. Dried blocks of Almaciga resin, better known as *Manila copal* (*Agathis philippinensis*), are sporadically burnt for illumination.

As mentioned, most materials from which hunting gear is constructed are gathered from the forest. Bows (*busog*) are produced from the stem of *anaw/anahao* (*Palmae* sp.), while the attached string is made of bark of the *balete* tree (*Ficus* sp.), if not of nylon. Arrow shafts are made from *bigew/runo* (*Schizostachyum lima*) (see also Garcia and Acay 2002:40) and the resin of the *narra* tree (*Pterocarpus indicus*) is used for attaching these shafts to various types of arrow heads, the scrap metal for which is collected from village centres. Men often specifically set out to collect these products when they need them, or when they are known to be present in a certain location.

Commercial gathering

Most Agta spend considerably more time in gathering for commercial purposes than for any of the previously discussed subsistence purposes. Here, I will first describe the importance of commercial rattan gathering and swiftlet nest collection among the Agta

⁷⁹ The Diangu Agta also collect *nito* (*Lygodium circinnatum*) for making arm decorations (*biskal*).

of the Northern Sierra Madre Natural Park. After that, I will do the same for a number of other, less commonly (and sometimes unexpected) trade products.

Rattan

The Agta have been heavily involved in commercial rattan gathering for several decades (see Headland 1986 and Clark 1990). Rattan is a general term for all climbing palms and is found in a range of habitats from near sea level up to 2,000 meters depending on the specific species (Lantican 1991:12). In addition to its value for household use rattan has since long been an important commercially collected product among the rural poor in the Philippines and elsewhere (de Beer and McDermott 1996:37; Palis 2004). Little is known about the distribution and abundance of rattan within the Northern Sierra Madre, although Clark (1990:85) presents anecdotal evidence that fewer rattan species are found on the mountain ranges' eastern than western side. At least eight different species (mostly *Calamus* sp.) are commercially gathered (Garcia and Acay 2002:45-6). The most important of these are referred to as *tumadem*, *kikit*, *samulid*, *gulo-gulo* and *sahi* by Agta gatherers.

Most Agta residential groups in the Northern Sierra Madre Natural Park engage in rattan gathering, at least during part of the year. Coast-dwelling Agta consistently say that they focus on collecting rattan mainly during the rainy season when fishing is difficult, while for most river-dwelling Agta it is a year round activity. This pattern shows from the difference in time expenditure in rattan gathering in 2004-2005 between the coast-dwelling Dimasalansan and the river-dwelling Disabungan Agta. The former averagely spent just over 7% of their time in rattan collection (all of which took place in the rainy month of July), while the latter on average devoted nearly 14% of their time to the activity (table 3.17).

The Diangu Agta are no longer involved in rattan gathering, although they used to be when their settlement was connected to the logging road to Maconacon in the 1970s and 1980s. Since the pull out of the logging company in the early 1990s and the consequent deterioration of the road, however, rattan buyers no longer show interest in this inaccessible watershed. This is also the case for several other Agta groups in the coastal municipalities of Divilacan, Maconacon and Palanan. Also, residential groups in San Pablo, Tumauni, Ilagan and parts of San Mariano are generally not engaged in rattan gathering as for them, logging is a more lucrative option.

Table 3.17 Relative time investment (in %) in rattan collection and processing 2004-2005

	Dimasalansan			Disabungan		
	Men	Women	Average	Men	Women	Average
Rattan collection	5.1	3.0	4.1	10.7	4.1	7.4
Rattan processing and transportation	2.5	3.8	3.1	4.8	7.7	6.3
Total	7.6	6.8	7.2	15.5	11.8	13.7

As rattan plantations are hardly present in the Philippines (de Beer and McDermott 1996:38), rattan in the Sierra Madre is always collected from wild populations in secondary and primary forest (Wakker 1991:92-3).⁸⁰ Small groups of women, men and children set out to specific parts of the forest in which relatively mature rattan groves are known to be present. Depending on the location of the cutting area relative to the settlement, rattan gatherers may make day-trips or they camp out at the cutting area for several days in a row before returning with their harvest.

Rattan is theoretically only gathered within the boundaries of areas for which the DENR has given out a rattan cutting permit to licensees. For actual rattan gatherers, however, such boundaries are not visible and thus, in practice, rattan is gathered anywhere. Thus, although (groups of) gatherers coordinate among themselves who will target which area on a particular day, there are no ownership arrangements with regard to rattan exploitation. Agta gatherers generally avoid competition from non-Agta harvesters by exploiting remoter forest areas.

Rattan gatherers recognize the various valuable species by their leaves, flowers and fruits. Harvesting and dragging the rattan out from the forest is physically tough. Both mature and young vines are cut off at 5 to 10 cm above the ground before they are disentangled, which often requires great strength. Thorns and leaves are removed on the spot before the long vines are bundled into loops. The rattan is mostly pulled out from the forest manually, and only in rare cases with the aide of a *carabao*.

Once back in the camp, the time consuming task of preparing the vines for sale begins (photo 3.8). People of all ages and genders keep themselves busy with this much of the day, and, if the moon is bright, sometimes even during evenings. Both the river-dwelling Disabungan Agta and the coast-dwelling Dimasalansan Agta were observed to spend nearly as much time processing the rattan as actually collecting it. Women spend relatively larger shares of their time in processing activities than men, while men spend more time in the collection itself (table 3.17).

First, the strands are straightened into neat poles, which then need to be processed manually as to fit certain size classes. To this end, some Agta gatherers use a template provided by the rattan buyer, but most work intuitively. On the western side of the mountain range as well as in the inlands of Dinapigue, rattan strands of usually 9 feet long are sold in roughly five diameter classes, ranging from what is locally called 'cigarette size' to 'over-size'.

Depending on the diameter, buyer and selling point, prices per pole range from 50 centavos to PhP10 (US\$ 0.01 to US\$0.2). In the coastal areas most rattan has to be split down to 'cigarette' size strands of 8 to 12 feet long, which are then sold in bundles of 100 pieces for PhP25 to PhP35 (US\$0.6 to US\$0.5) each. Depending on the agreement with the buyer, the rattan is picked up in the campsite itself, or has to be delivered to a beach site or selling point down river. In the latter case, at least parts of the final transportation may be done by tying the rattan bundles to an interior tire or polystyrene foam and floating them downstream.

⁸⁰ In Dinapigue one mature rattan plantation was present at the time of research, while another one was being developed by collecting wildlings and raising them in a nursery. Several Agta men were involved in the collection of such wildlings and taking care of the nursery. Most rattan was nonetheless harvested from wild stocks.



Photo 3.8 Winner Wagi straightening rattan at Digud, San Mariano, April 2005

All this generates only a very meagre income. Aquino (1993:64, 89-91) shows that in the early 1990s the average rattan gatherer in San Mariano annually earned less than PhP3,500 (US\$62.60) from making two collection trips per month, while revenues double or even triple higher up in the trading chain. Like is the case with all traded products, Agta prefer to be paid for their rattan in the form of rice and consumer goods rather than cash, as this saves them a trip to the nearest village centre. Such transactions are however highly untransparent and often turn out disadvantageously for the Agta. Buyers often do not have the desired product in stock, in which case the actual moment of payment is postponed, sometimes for extended periods. While Agta frequently say they have been cheated by their buyers, the buyers view the situation differently. They regularly complain that the Agta's rattan supplies are not of the right size or that bundles of rattan strands contain too few or too many poles. Moreover, they often claim the Agta take advantage of them, rather than the other way around, by asking for credit and then failing to produce the agreed quantity of rattan. One buyer, son of a Tinguian immigrant family in Sapinit (Divilacan), summarizes the situation as follows:

'[...] when they [the Agta] gather rattan it is like this. They ask for an advance in gathering rattan. They receive rice. Then of course the buyer expects rattan. He waits and waits, but the Dumagats have already disappeared in the forest'.

Indeed, Agta rattan gatherers are often deeply indebted to their buyers and there are cases in which this leads to situations of extreme dependency and extended periods of debt-bondage. For instance, an Agta family in Kameronasitan (San Mariano) had debts with their rattan buyer of over PhP5,000 (US\$90). As the family was not able to return the amount, the rattan buyer insisted they would plant corn on a 'vacant' part of the Agta's family's land for three seasons. To this end, the rattan buyer, a middle class woman from San Mariano town, who had no land holdings of herself in this area, set up a farm house in the Agta settlement from which she was running her rattan business while at the same time taking care of 'her' land.

Situations like these are considered highly undesirable not only by the Agta, but by NGOs, church based organizations and certain government officials as well. At least in theory, one solution would be for the Agta to control part of the rattan trade. Officially, only rattan collection permit holders have the exclusive right to all rattan transactions coming from the area covered by that particular permit. Usually, these licensees are relatively wealthy people who have the necessary capital to operate their permit (Aquino 1993:60). In 2004, the DENR gave out three such permits in Isabela province, with a combined harvesting area of 15,000 ha and an annual allowable cut of almost 795,000 linear meters (DENR 2004:55). In recent years, mostly within the framework of the Northern Sierra Madre Natural Park Conservation and Development Project, several rattan collection permits were given out to Agta individuals or cooperatives in order to increase their autonomy.

In practice, however, the Agta licensees have trouble maintaining their permits. First of all there are financial constraints. As Agta licensees lack the seed money to start their business, they rely on dubious credit sources and often get deeply indebted shortly after the start of their operation. Such was the case with a rattan licence granted to an Agta group from Reina Mercedes (Maconacon). The licensee had to pay a deposit amounting to PhP88,000 (US\$1,574), which he partly borrowed from his rattan buyer. In addition, he gave out cash advances to his kinsmen who needed to bring supplies to the forest while gathering rattan. Within a short time, the licensee's outstanding debts rose to PhP115,000 (US\$2,057), while he was not able to produce the necessary quantity of rattan to clear his debts.

A second major problem is that Agta licensees' rattan collection rights tend to get unduly exploited by non-Agta who claim they assist the licensees in managing the permit for their own sake.⁸¹ For instance, a license which was granted to the 'Christian Agtas Rattan Gatherers Association' in Maconacon in the late 1990s, was cancelled after a few years as it was clandestinely operated by non-Agta. The same fate befell the Agta from Didadungan (Palanan). A trader from Palanan town got hold of their permit, rebooked it in her own name, and allegedly collected rattan worth PhP140,000 (US\$2,505) from the Agta gatherers without paying them for it. This caused a good deal of consternation among the Didadungan Agta, as part of the community accused the official licensee and his close relatives of purposively colluding with outside buyers and running away with the money. With the help of local officials, the Didadungan Agta were granted another permit in 2005. It took them a long time to actually start its operation however, as they wished to circumvent above mentioned financial pitfalls. They collectively saved the money they needed for paying the forest charges for their

⁸¹ This problem also occurs among non-Agta licensees, as pointed out by Aquino (1993:124).

latest permit, amounting to PhP11,000 (US\$197). Moreover, they resolved that no cash advances would be given out to the rattan gathering kinsmen. Some of these however insisted they would not start collecting rattan before receiving their *consumo* (food supplies). This slowed down the rattan operation to such an extent that the permit had nearly expired by the time it started to generate income.

Besides these problems, however, there are questions of economic and ecological sustainability (see also Belcher and Schreckenberg 2007; Kusters and Belcher 2004; Belcher, Ruíz-Pérez and Achdiawan 2004). Although the Philippines was a major exporter of raw rattan in the 1970s, national production has plummeted since then, and the country became an importer of rattan instead. Much of this decline is due to increasing exhaustion of wild stocks (de Beer and McDermott 1996:75-7; Defo 2005:305). As mentioned earlier, since rattan plantations are nearly inexistent in the Philippines, most rattan is harvested from the wild. Moreover, although this is required by law, replanting hardly takes place (Aquino 1993:124-5). As various Agta gatherers indicate, some rattan species indeed spontaneously re-sprout after harvesting and can then be cut again two to three years later. Others, however, don't and will only be replaced by replanting them (de Beer and McDermott 1996:38). Anecdotal information coming from rattan gatherers and buyers, suggests that rattan stocks have been greatly reduced since the 1980s in much of the Sierra Madre (see also Aquino 1993:124-5; Clark 1990:89; Headland 1986:327). Agta rattan gatherers indicate that they have to go deeper and deeper into the forest in order to obtain reasonably mature rattan. They claim to sometimes walk for as long as three hours before reaching mature rattan groves, which is twice as long as Clark (1990:95) observed among the Agta in Cagayan province in the late 1980s. In some areas the distances to good cutting areas have become so great that going there is not even worth the trouble (see also Wakker 1991:77).

Swiftlet nests

The nests of the pygmy swiftlet (*Collocalia troglodytes*) and probably also the island swiftlet (*Collocalia vanikorensis*), form a second major commercially collected non-timber-forest-product. The Agta refer to both swiftlet species as *talawen* and the high market value of their nests began to provide an economic opportunity for several residential groups in the park around 2001. Neither of the two species is among the various edible-nest swiftlet species that are commonly collected in Southeast Asia for the Chinese market.⁸² Little is known about the *talawen*'s nesting behaviour. While

⁸² The most favoured of these are the so-called white-nest species *C. fuciphaga* and *C. germani*, which make nests purely of saliva, and the black-nest species *C. maxima* and *C. unicolor*, whose nests contain a mixture of saliva, feathers and vegetation (Sankaran 2001:283; de Beer and McDermott 1996:35). Although *C. fuciphaga* and *C. maxima* do occur on Palawan in the southern Philippines, they are absent from Luzon (Kennedy et al. 2000:189-90). Throughout Southeast Asia nests of additional swiftlet species are collected in limited quantities, particularly during times of high demand (Sankaran 2001:283). In Indonesia and West-Malasia extensive and highly successful house farming of edible-nest swiftlets takes place (Hobbs 2004:2221; Sankaran 2001:284). This industry comes complete with easily accessible manuals on swiftlet farming and audio-tapes to attract swiftlets to one's house and stimulate nest building. For at least 400 years, the Chinese have consumed the nests in the form of a soup, which is believed to have medicinal qualities (Hobbs 2004:2209).

some nest collectors maintain that the birds breed throughout the year, others say nest construction takes place from December to August and breeding follows in the rainy season. For the pygmy swiftlet, Kennedy et al. (2000:192) have recorded breeding only in April, May, July and September, while the breeding period of the island swiftlet is unknown. Both species make nests of a mixture of saliva, vegetation and feathers. Nest construction is a lengthy procedure, in which, according to informants from Kanaipang, male and female work closely together.

The nests are collected from limestone caves which are present along the coast and in the mountain interior of southern Palanan, northern Dinapigue and eastern San Mariano. It is therefore mainly Agta originating from these areas as well as kinsmen from adjacent watersheds who are intensively involved in nest collection. The *talawen* nests are a highly priced commodity and many households indicate that nest collection (*agumok*) brings them a better income than any other livelihood activity. Collectors are prepared to walk for several days in order to reach caves with harvestable nests, sometimes spending up to a week on end in nest collection. After carefully cleaning it from dirt and vegetation, a nest with a diameter of around 6 cm sells for up to PhP100 (US\$1.8). Buyers usually come to the Agta settlements to pick up the product, although several Agta collectors from the Disulap watershed (San Mariano) prefer to directly sell their nests to Chinese restaurants in Isabela's urban centres.

Collecting the nests is almost exclusively done by men, but certainly not all men do it. It is an arduous and potentially dangerous task, as there is always a risk of sliding deep into holes and encountering snakes or cave dwelling supra-natural beings. For these reasons, in a sample of 54 Agta households living near *talawen* breeding areas, only 41 (76%) were involved in nest collection. Usually working in pairs, collectors enter the caves through narrow openings, from where they may move through a series of yet other narrow corridors until they reach the dark, humid chambers in which the nests are stuck on the walls. The nests are located using a torch light after which they are manually collected. A good day yields 15 to 30 nests, but caves are increasingly found empty.

Agta and non-Agta collectors are in fierce competition with one another over this precious resource. Caves are often claimed by particular groups of collectors. For instance, in *barangay* Didadungan (Palanan), non-Agta collectors claim the caves adjacent to their rice fields, while the Agta collectors regard the caves around Kanaipang and Cacawayanan as their property. Agta collectors say that although they indeed respect this non-formal arrangement, they do not succeed in keeping out non-Agta collectors from their territory. Thus, the former increasingly resort to more drastic measures to keep out the latter, for instance by closing off the entry of their caves with thorny vegetation.

As it is, the nest-collection procedure is unsustainable. There are no regulations as to the number of nests that may be harvested per person, per cave or per period. A certain cave is simply stripped off nests completely before collectors move to the next. Nests of any size are collected year-through. Agta collectors tend to accuse non-Agta collectors of unsustainable harvesting practices and claim that they themselves only take nests which no longer hold eggs or chicks, since otherwise 'it is *kaasi* (a pity) for the *talawen*'. Although on various collection trips indeed only empty nests were observed to be collected, some of these were still under construction. This in itself does not need to be detrimental to the species. Other edible-nests swiftlets are known to

rebuild each nest that is taken. Sustainable harvesting systems in various southeast Asian countries therefore require that the bird is given the chance to complete at least one nest each year, incubate the eggs and see the chicks through to fledging (requiring about 120 days) before the nest is taken (Hobbs 2004:2211).

While the endemic pygmy swiftlet is still fairly common on Luzon and the resident island swiftlet is common throughout the Philippines, in the caves of Kanaipang and environs the first signs of population decline are being noticed. While nest exploitation has only started a few years ago, several caves are no longer inhabited by *talawen*. Edible-nest swiftlet populations have been greatly reduced due to over-harvesting in other parts of Southeast Asia (Hobbs 2004:2210). Indiscriminate nest collection of the white-nest swiftlet (*Collocalia fuciphaga*) on the Andaman and Nicobar Islands has led to a reduction of its population of over 80% in ten years time (Sankaran 2001). In Sarawak, black-nest swiftlet populations were reduced from 2.2 million in 1931 to only 300,000 in 1999 (Hobbs 2004:2214). If nest collection is to remain a long term income generating activity in the Sierra Madre, a good management system needs to be installed.⁸³

Other commercially collected items

Several plants are collected for commercial manufacture. As mentioned, *bidiyo* (*Pandanus* sp.) is extensively used for the weaving of mats and baskets. While this is mostly for domestic use, especially among coast-dwelling Agta households the mats are an important barter product. Mats can be ordered in different sizes, ranging from 6 by 12 hands⁸⁴ (*dankal*), paying the equivalent of PhP100 (US\$1.8), to 10 by 20 hands, which cost around PhP300 (US\$5.4). It takes an experienced weaver around one hour to collect the *bidiyo*, half a day to dry and prepare it, and four evenings of continuous weaving to produce the smallest mat. The extent to which the sale of these mats contributes to the household income varies considerably per season and household. Demand for *bidiyo* mats is highest following every harvesting season, when non-Agta farmers use them for drying their rice. Elderly women sell their mats more regularly than younger ones. For instance, an elderly female key informant from Dimasalanan, who is known as a very active weaver, sells mats between two and five times monthly, while her younger relatives sell that number of mats in an entire year. Elderly women consider the selling of mats a viable alternative to lobster fishing for which they and their husbands are too old.

In the western watersheds of especially Ilagan, Tumauni and San Pablo, Agta men and women regularly produce rattan backpacks (*digian*) for loggers to carry their chainsaws and gasoline in. Like mats, these come in several sizes and are usually exchanged for consumer products. In Dinipan (Palanan) several Agta households weave baskets of rattan and *nito* (*Lygodium circinnatum*) on order, which they sell for PhP60 (US\$1.1). An Agta man from Dimatog (Palanan) has been taught how to weave

⁸³ During the second phase of the Northern Sierra Madre Natural Park Conservation and Development Project, implemented by WWF-Philippines, initiatives were made to set-up sustainable harvesting systems similar to those implemented in northern Palawan, but these never materialized due to the early termination of the project. In Palawan, the Tagbanwa have been involved in trade of the nests of white nest swiftlets for at least 400 years (Zingapan and de Vera 1999:2).

⁸⁴ One hand is around 10 cm.

rattan hammocks by a non-Agta friend. He transferred his skills to the other households in Dimatog, who consequently started to produce these hammocks on order, selling them for PhP100 (US\$1.8) to PhP300 (US\$5.4) each.

Agta women and children occasionally collect orchids to sell in village centres or to loggers. This is done either opportunistically or after receiving a specific order. The quantities are usually small, ranging from one to ten pieces at a time. Depending on the size and species of the orchid and on where the transaction takes place, the orchids sell for PhP5 (US\$0.1) to PhP20 (US\$0.4) per piece. In the LUZMATIM logging concession in Dinapigue, Agta are more regularly involved in orchid collection, exchanging three to four orchids for 100 airgun bullets with loggers. In several areas, such as the Disulap watershed in San Mariano, informants say they no longer sell orchids as they know it is illegal. In much of the rest of the park, however, people seem unaware of this.

Both women and men incidentally collect a flowering grass called *buybuy* (*Thyslonana maxima*) which grows in open areas and along creeks and rivers. These are either sold unprocessed, or they are made into brooms, which sell for around PhP50 (US\$0.9). This has only been observed among the Agta in the western watershed of the Pinacanauan de San Vicente (San Pablo) and their close affines in the Diangu watershed (Maconacon).

In the coastal area from Dibol down to Bicobian (Divilacan), Agta households incidentally engage in the collection of the *nipa* palm (*Nypa fruticans*), which grows in mangrove areas and coastal swamps. *Nipa* is extensively used for the construction of roofs and walls in rural houses throughout the Philippines (Honculada Primavera 1995:304). Agta households engage in collection of the palm only when they receive an order from acquaintances in village centres and preferably in the rainy season, when they are less preoccupied with fishing. Bundles of 100 *nipa* leaves each sell for PhP30 to PhP50 (US\$0.5 to US\$0.9).

Manila copal (*almaciga* resin, *Agathis philippinensis*) was an important product especially during the 1970s and 1980s, when the resin was extensively used for the production of veneer. For Agta throughout the Sierra Madre, as well as for many rural dwellers elsewhere in the Philippines, the trade of *Manila copal* was a major source of income (Lacuna-Richman 2004). So important, in fact, that in the Northern Sierra Madre, the DENR ordered logging companies to spare the *almaciga* trees. This ban, however, was not always respected (van den Top 2003:109). Since the late 1970s demand has plummeted as chemical alternatives for veneer production became available. Consequently, *Manila copal* exports have become almost negligible (DENR 2004:128). *Manila copal* is nonetheless still sporadically collected by Agta households in the interior of Palanan if there is an order from the town centre. The resin is tapped by making an indentation in the *almaciga* tree, much in the way rubber is tapped. The bulky and light material that results from drying the resin nowadays sells for only three to five peso per kg (five to ten US\$ cents).

Lastly, the commercial gathering of several unlikely ‘forest products’ and ‘marine resources’ should be mentioned. The first concerns the purposive collection of scrap metal (*aglandok*). The various logging companies that operated in much of the Northern Sierra Madre until the early 1990s have left a legacy of iron waste on and under the forest floor. Two decades onwards, the Sierra Madre inhabitants are still busy cleaning up the mess (photo 3.9). Discarded machinery and steel cables are

systematically dug up and dragged out of the forest as much as possible. This is mostly done manually or, if available, with the help of a *carabao*. The waste is sold to local buyers or in the nearest town centre, for three to six peso per kg (five to ten US\$ cents). The collection of scrap metal is especially important among Agta households along the coast from Maconacon down to Palanan. In 2004, the coast-dwelling Dimasalansan Agta were observed to averagely spend as much as 6% of their time in *aglandok* (men spent 6.7% and women 5.4% of their time in this activity). They used a motorized *bangka* to travel upstream along Dimallang river, where they entered the forest to dig up the waste. The iron was manually hauled back to the *bangka* and then transported to Maconacon for sale. Waste of a different kind is opportunistically collected from the beach. Especially after rough weather, Agta of all ages and genders frantically look out for anything that washes up against the shore. Buoys, plastic containers, rope and polystyrene foam are eagerly collected. Much of this material is sold, and whatever does not have a market value is put to use in the household.



Photo 3.9 Scrap metal collection at Blos, Maconacon, July 2006

CONCLUSION

This chapter has shown that, withstanding earlier predictions to the contrary, hunting, fishing and gathering still are important livelihood components for the Agta of the Northern Sierra Madre Natural Park. Throughout the protected area Agta engage in a range of foraging activities year through, even if the intensity of these activities fluctuates seasonally. There is no denying however, that certain important changes have taken place within the Agta's hunting- and gathering mode of production over the past twenty-five years. These changes take different forms among different Agta residential groups. Here I will discuss the main patterns of change.

Most apparent is the sharp decline in time investment in hunting among river-dwelling residential groups. On both sides of the mountain range male time investment in hunting has decreased manifold, while women have altogether ceased to hunt. Declining wildlife stocks are a likely (partial) explanation for this development, although no quantitative evidence is available to prove this. It is important to note, however, that hunting success rates have remained relatively stable. In other words, Agta may hunt less often, but when they do they are not less successful than they used to be. Thus, reduced hunting frequency compensates for reduced game abundance. Some residential groups have even increased hunting success by shifting to more intensive hunting strategies, notably trapping. As the traps are irregularly checked, this may however not provide a long-term solution. It is less clear what has happened to coast-dwelling Agta's hunting patterns as we lack comparative data. To be sure, hunting is presently of negligible importance during the dry season, but its significance is likely to increase considerably during the rainy months. In the coastal areas too, Agta say that dwindling game stocks are a major problem.

Developments are more ambivalent with respect to fishing. Time investment for this activity is high among coast-dwelling Agta, who also have a relatively diversified fishing repertory. Time investment in fishing has declined among some river-dwelling Agta groups, while it appears to have increased among others. The results suggest that Agta groups that do not shift to more intensive hunting tactics to compensate for decreased hunting frequency, have to invest more time in fishing in order to procure sufficient animal protein. But this is tough. In the mid- 1980s, Mudar (1985:80) concluded that fishing gave Agta a high food return for relatively little energy input, in contrast to active pursuit hunting. This may be true for coast-dwelling Agta, who get reasonable returns from fishing, but it certainly is not true for river-dwelling residential groups. Their returns from fishing were already extremely low twenty-five years ago, and have continued to decrease since then. In contrast to hunting returns, freshwater fishing returns are hardly increased by shifting to different strategies. The only exception is the introduction of torches, which enables fishing at night. Again, environmental disruption in general, and overexploitation of fish stocks in particular, are the main explanation for declining fishing success rates.

What about the importance of gathering? Clearly, time investment in gathering for subsistence purposes is on the decline, especially when it comes to the collection of wild plant foods. This is mainly due to the Agta's increased access to domesticated starch, which relieves Agta women from the time consuming and laborious task of digging wild tubers. Subsistence gathering remains important however to obtain construction materials, medicinal plants and honey. Women still typically spend more

of their time in subsistence gathering than men, although certain gathering activities such as honey collection are men's responsibility. Commercial gathering, in contrast, remains to be of great, and possibly increasing, importance. It forms a major component of contemporary livelihood among the majority of the protected area's Agta population. Unlike subsistence gathering, commercial gathering sees relatively more intensive male time investment. The two most important commercially collected products are rattan and the nests of two swiftlet species.

This brings us to the importance of trade in the Agta's present-day foraging economy. At the outset of this chapter I distinguished between supply-driven and demand-driven trade. In assessing the changes that have taken place in the Agta's trading system I consider this a useful distinction. What we see is that supply-driven trade is of relatively limited importance simply because hunting and fishing infrequently generate saleable surpluses. In as far as it still is of importance, this is mainly the case for river- and coast-dwelling Agta along the eastern side of the mountain range. In fact, as Rai (1982:155) rightly emphasizes, institutionalized trade partnerships between Agta and non-Agta have always been of much smaller significance along the Sierra Madre's interior than along its coastal side. The importance of demand-driven trade, however, is great and probably increasing. This was shown in the case of lobster-fishing, which is now a major source of livelihood among coast-dwelling Agta. Moreover, the gathering of rattan and swiftlet nests always results in demand-driven trade, and as we will shortly see, so does logging. It thus still is absolutely sensible to speak of the Agta as 'commercial hunter-gatherers'.

But the Agta decreasingly are the main occupants of this commercial hunting-gathering niche. And this is perhaps the most important change that has occurred in recent decades. While competition between Agta and non-Agta is usually mentioned in relation to agricultural land, it is at least as important with respect to wildlife. As the non-Agta population in the Northern Sierra Madre Natural Park increases, pressure on foraging grounds grows. Even though these additional people are primarily involved in logging or farming, they hunt, fish and collect too. This is not to suggest that hunting, fishing and gathering used to be done by the Agta exclusively, as non-Agta have probably always been involved in these activities as well. However, the scale of their involvement is different. For not only has the non-Agta population greatly expanded, at the same time the forest has become significantly smaller, while the remaining forest is disturbed, most notably on the Northern Sierra Madre's interior side.

Thus, in gathering rattan and swiftlet nests Agta face fierce competition from non-Agta gatherers. Outsiders' attempts at improving the Agta's competitiveness by granting them rattan collection permits have largely failed. Moreover, in hunting and fishing, non-Agta tend to follow more intensive resource extraction procedures than Agta. Trapping and blasting as well as fishing with electro-equipment, cyanide and dynamite are widespread. Thus, the indiscriminate and fast exploitation of wildlife is among the Agta's greatest worries today. As we will see in the next chapter, these problems are to a large extent related to and exacerbated by ongoing timber extraction, especially on the Northern Sierra Madre's western flanks.

Amidst these pressures, the Agta's hunting-gathering mode of production still persists. By shifting to previously unexploited areas and new forest and marine products the Agta show considerable adaptability. Also, new extraction techniques are explored. By emphasizing demand driven trade, Agta respond to newly arising

opportunities. The Agta's retained mobility and the related ability to make use of several foraging grounds, income generating activities and trade relations add to their resilience.

IV. LOGGING

INTRODUCTION

The previous chapter has described the exploitation of forest and aquatic resources for both subsistence and commercial purposes by means of hunting, fishing and gathering. One other commercially exploited forest resource has not yet been discussed. This is timber. Although the Agta have probably been involved in logging activities of varying nature for at least several centuries, the ethnographic literature has so far hardly mentioned it. As will become clear in this chapter, the exploitation of timber demonstrates such distinctive dynamics in economic, social and environmental terms that it deserves explicit attention.

As early as under Spanish colonial rule (and possibly before that), Negrito groups were at times employed by neighbouring populations as wood cutters (W. Scott 1994:250). This served both local demand for construction wood as well as agricultural activities. Mechanized logging in the Sierra Madre was initiated by the Japanese in the early decades of the twentieth century. At the time, this was limited to a few coastal areas as no transportation system was yet present in the interior (Rai 1982:10, 32, 175). In the post-war period commercial logging expanded rapidly in scale, intensity and organization. Throughout the country forest concessions operated based on the American initiated Timber Licensing Agreement (TLA) system and the Philippines became a major exporter of timber. The western Sierra Madre was opened up for timber extraction by installing a dirt road network and the focus of logging consequently shifted to the mountain range's interior flanks. With the exception of the least accessible areas, by the early 1980s the entire mountain range was being exploited by some timber company.

The drastic manner in which this mechanized logging industry has transformed the Agta's territory has been extensively documented (Rai 1981, 1990; Headland 1986; T. Headland and J. Headland 1997; P. Griffin and M. Griffin 2000). However, just as Bending (2006) notes for the case of the Malaysian Penan, only sporadic reference is made to their employment in this industry. P. Griffin and Headland (1994:73) merely report that the Agta '[...] also work as forest guides for loggers and as night guards of logging trucks and bulldozers'. Rai (1982:174) provides a little more detail when he mentions that '[...] mercantile populations incorrectly believe that Agta bands are ruled by territorial leaders, who can mobilize the groups to disrupt the logging [...] operations in the area. Thus, they maintain good public relations with those they believe to be the leaders by hiring them to work as guides, scouts or guards. [...] this form of employment pays fifty pesos per month and occasional gifts of liquor, cigarettes, canned goods, etc.. If the employment is on a daily basis, Agta earn as much as five pesos per day'.

Even less has been written on the Agta's involvement in the non-corporate, illegal logging industry. Since several local commercial logging moratoria were installed in the early 1990s, in most parts of the Sierra Madre logging no longer takes place in the context of large timber corporations. As we will shortly see, Dinapigue

forms an important exception. Illegal, non-corporate timber extraction has however taken the place of logging companies throughout the mountain range. Within the Northern Sierra Madre Natural Park most illegal logging takes place in the western interior, although it is certainly not absent from the coastal areas.

The complex ways in which this uncontrolled clandestine industry affects the Agta of the Northern Sierra Madre Natural Park are the main focus of this chapter. The river-dwelling Disabungan Agta feature as a central case, along with several other river-dwelling residential groups in the western mountain interior. I will start however by discussing the Agta's position in one of the last remaining timber concessions in the Northern Sierra Madre, which is situated in Dinapigue.

CORPORATE LOGGING

In 2002 two of the three remaining timber concessions in the Cagayan Valley were situated in Dinapigue, the southernmost municipality included in the Northern Sierra Madre Natural Park. These concessions cover two adjacent forest areas which were harvested by Luzon Mahogany Timber Inc. (LUZMATIM) and the Pacific Timber Export Corporation (PATECO). Nearly 16,000 ha of the LUZMATIM concession were overlapping with the Northern Sierra Madre Natural Park. Both of these companies' TLAs expired towards the end of the research period, but they were renewed in the form of so-called Industrial Forest Management Agreements (IFMAs) (DENR 2007b). The most important difference between a TLA and an IFMA is that IFMA licensees are required to deposit a holding fee of 10% the equivalent of the standing stock's value with the DENR. This amount is lost if the government demonstrates that the licensee has violated the IFMA conditions.⁸⁵

Here, I will only focus on the LUZMATIM IFMA, as the Agta of the Northern Sierra Madre Natural Park are directly affected by it. Although the concession has been relocated outside the protected area, starting immediately beyond its south-western boundary, it still includes the hunting and fishing grounds of the Agta from Diwagao up to Ditabigui (settlements no. 18 to 23 on map 2.2). It covers an area of nearly 24,000 ha, with an annual allowable cut of 30,000 m³. The IFMA license will expire in late 2026 (DENR 2007b).

Since the start of its first operation in 1954, LUZMATIM's successive concessions have transformed these Agta residential groups' settlements and resource use areas (photo 4.1). The logging town of Dinapigue itself, which is situated in a coastal valley, came in the place of lowland dipterocarp forest which reached almost up to the Pacific coast. The entire valley has been converted into agricultural land in the following decades. All-weather roads have been built while side-roads extend deep into the forest, leaving hillsides heavily eroded. Agta dwellings are neatly lined up alongside these roads. Heavily loaded logging trucks and other machinery roar past

⁸⁵ Other conditions include the following. Logging in IFMA concessions is only allowed after degraded areas have been reforested or have recovered to such an extent that logging operations make economic sense. Moreover, a standing stock of 67 cubic meters per hectare should remain. In practice, however, the DENR generally turns a blind eye to these conditions (van den Top 2003:203-4, 289).

several times a day. Fishing has become impossible throughout most of the concession area, mainly as a result of increased pressure on aquatic resources due to the presence of logging communities. The impact on hunting grounds is almost equally great, although Agta in these areas have not completely abandoned hunting.

With all this disruption, the most surprising fact perhaps is that the Agta are still there. This brings us to another main way in which the logging operation has impacted on the Agta's lives. During a visit to the concession area in July and August 2003, 25 Agta households resided within its boundaries, spread out over the settlements of Diwagao, Dialwas, Decadecan and Ango (settlements no. 18, 19, 21 and 22 on map 2.2). All of them had until that moment been employed either by LUZMATIM, or by one of its numerous sub-contractors. Interestingly, many of these households did not originate from the concession area itself, but had moved there from across the mountain range as they heard about the companies' demand for labour. Several among them had been personally asked to come to Dinapigue by foremen previously working in LUZMATIM concessions in San Mariano.

Employment generally involves guarding concession equipment (photo 4.2). Timber companies hire equipment guards partly to appease Agta residents (see also Rai 1982:174) and partly to prevent potential sabotage by the NPA, which has repeatedly molested logging machinery in the Northern Sierra Madre and elsewhere (Vitug 1993:130-1; Jongman 1997:28). Each household is responsible for a particular bulldozer and thus dwellings are constructed next to where the machinery is located. As the bulldozers move through the forest the Agta guards move along with them, a remarkable situation that has also been described for the Malaysian Penan by Bending (2006:140-1).

In addition, Agta men are hired as tree and road surveyors or chainsaw operators, while several of them incidentally operate the larger logging equipment. In return, they receive a monthly wage in the form of kind and cash, which adds up to some PhP3,000 (US\$54).⁸⁶ At the time of field work such payment was delivered to the Agta families by the concession foreman on a weekly basis. Sometimes he brought them extra's such as tobacco or gin. The foreman made it a point to maintain close relations with the Agta and indeed had long-standing contacts with most of the households that at the time fell under his patronage. As we will see below, however, this trust was eventually betrayed.

While there is no doubt that the Agta households that at the time stayed in the concession area lived in poverty, there were subtle differences with Agta residential groups in neighbouring watersheds. All men, for instance, had air guns, a 'luxury' which hardly any other Agta encountered in this study could afford. Most of them were wearing wrist watches, another rarely seen status symbol. Women were generally dressed in colourful, pretty clothes for which they saved part of their monthly cash incomes. Karaoke sets and radios were much more common than elsewhere. Most importantly, from superficial observation it appeared that meals were more regularly

⁸⁶ Although there was fluctuation in the exact amounts depending on the work done, the typical monthly payment for a household involved in 'bulldozer watching' and road surveying consisted of PhP2,000 (US\$36), 50 kg of rice, two packs of instant coffee, 2 kg of sugar, 2 kg of salt, two bars of laundry soap, one pack of seasoning, four cans of sardines, one bottle of cooking oil and one bottle of fermented fish sauce.



Photo 4.1 Logging operations in LUZMATIM concession, Dinapigue, August 2003



Photo 4.2 Agta guarding LUZMATIM logging equipment, Dinapigue, August 2003

taken than is generally the case. There are other advantages of living in a concession area, such as the transportation possibilities to the town centre in Dinapigue and free medical services in the local clinic. Yet, all of this comes with a price, which is known very well by the Agta involved:

‘The logging operations can help us, we can benefit from it, but at the same time it also affects us. Because as you can see, there are less big trees, less birds, less fish in the rivers. I would prefer if the logging would be totally stopped because then at least we can cultivate our land. This is not possible while working for the contractors because they want us to be always there and to work all the time. [...] But if you have cash at least you can buy clothes. If you cultivate, you have to wait for the harvest.’ (Mrs. Ligas Impiel, Diwagao, August 2003)

The Agta’s economic dependence on the timber company became especially apparent during a period of relative inaction which lasted from mid 2003 to late 2005. LUZMATIM’s license was close to its expiry date and for some time it seemed that it would not be renewed. As a result, the company began to pull out its machinery. Thus, during the 2003 visit to the concession area, many Agta households were making up their minds as to what to do next. The bulldozers and other logging equipment they had been guarding for consecutive years⁸⁷ were leaving the concession area and so their main source of livelihood had ceased to exist. Some families had decided to move with the machinery for as long as possible, while others were considering alternative options. The most frequently mentioned of these was ‘going back to our swiddens’, most of which were situated in watersheds in San Mariano. Indeed, during later visits to the Disabungan watershed in San Mariano it became apparent that several of these households had moved back there.

The situation was very different during a second visit to the concession area in May 2005. Logging operations were about to resume under LUZMATIM’s newly acquired IFMA, but the remaining eleven Agta households were hesitant to be employed in the concession again. They recently found out that the above mentioned foreman had ran off with the separation fees that LUZMATIM was supposed to pay them upon the TLA’s expiration.⁸⁸ This betrayal had angered them so much that they no longer wished to be dependent on the company at all. Instead they were intensively involved in rattan gathering and swiftlet nest collection. In addition, all households practiced swidden cultivation, while some also seasonally worked as paid land labourers on non-Agta farms. Moreover, fishing and hunting returns had gradually improved during the company’s absence. Several elderly people voiced concern, however, that as soon as the company would restart its operation, catches would again

⁸⁷ Seasonal fluctuations in the intensity of logging were normal however (see also Rai 1982:36), and the Agta dealt with it by moving back and forth between San Mariano and Dinapigue depending on employment possibilities.

⁸⁸ With the help of a pro bono lawyer, the Agta from Ango had taken up a court case against their former foreman. They accused him of embezzling LUZMATIM’s pay-roll and misleading the Agta. He had come into the settlement on a moment when the only literate person was not around. After enjoying gin and snacks together, he had let them thumb mark a text stating that they were never employed with the company, that they therefore had no rights to any separation fees and that any money they earlier received was simply charity on the foreman’s part.

start to dwindle. One elderly respondent from Ango said that in hindsight logging had only brought them trouble, even though for some time they had been able to enjoy a regular income. In the end, in this man's perception, life had been best prior to the start of logging, when hunting and fishing had been better.

Such rhetoric on how all used to be better than it is at present, is typical not only for the Agta, but also for other forest dwelling peoples like the Penan. Bending (2006:42, 53, 84) provides intriguing insight in how the latter use similar statements to express their dismay regarding logging operations and all negative things that are associated with it. It also serves to distract attention from the complicated fact that the Penan, like the Agta, take a pragmatic stance towards logging. Despite the logging protests⁸⁹ which made the Penan famous the world-over, they lack the collective strength to put an end to it. Thus, the Penan implicitly reason, since the forest is cut anyway the second best option is to at least get their share (Bending 2006:135). As the following paragraphs will show, the same principle applies to the Agta's stance towards non-corporate, illegal logging.

NON-CORPORATE, ILLEGAL LOGGING

Aside from corporate logging, another, much more widespread form of timber extraction takes place in the entire Sierra Madre. In the remainder of this chapter, the term logging refers to this non-corporate, illegal form of timber extraction. Here, I will first demonstrate that the logging problem is denied by local governments, before turning to a description of what it entails at the forest floor.

Local government's perceptions on the logging problem

Perceptions on the causes of deforestation vary. According to the NSBC (2005:4-13), the leading cause of forest destruction in the Philippines in the year 2000 was illegal logging, bringing about a nation-wide forest loss of nearly 5,000 ha in that year alone. Fire is listed as causing an almost similar amount of forest loss, while the impact of *kaingin* (slash and burn agriculture) and typhoons are reported to have been much smaller.

This is also the most commonly held view in academe. In this view, the underlying causes of continued illegal logging are corruption and political patronage (van der Ploeg, van Weerd and Masipiqueña forthcoming). Kummer (1991:74) convincingly shows that corruption and illegality have been the norm in Philippine corporate and non-corporate forestry (see also Huigen 1997). Van den Top (2003:271-3), although in principle specifying the same processes referred to by Kummer, is reluctant to use the word 'corruption' in his analysis of deforestation in the Sierra

⁸⁹ To my knowledge, no collective action by the Agta against logging operations has been documented so far. In May 2005 however, an Agta man from Casiguran presented anecdotal information on a successful petition against logging in Casiguran which was organized by a religious Agta organization there in December 2004.

Madre. He prefers to speak of ‘policy circumvention’ and ‘distorted policy implementation’.

Local administrations perceive the problem differently. They instead point to *kaingineros* (slash and burn farmers) as directly causing the problem. The municipality of San Mariano, where illegal logging is very intensive, laments the degradation of its forest resources, blaming

‘*kaingineros* and fire wood gatherers [for their] merciless exploitation of virgin forests [causing] chains of environmental problems such as soil erosion, destruction of watersheds and water sources [while there are] many other deleterious effects of such greedy forest exploitation’ (LGU San Mariano 2000:no page).

The municipality of Tumauni writes that:

‘[it is a] heir to a priceless legacy of a magnificent stretch of mountainous virgin forests. The inhabitants must therefore have a stern desire and vigilance to safeguard and preserve this legacy. The people must not be tempted to wantonly and indiscriminately destroy the locality’s greatest resource – the forest, which contains the vital life support systems [...]. Assessment and evaluation of the forest areas in the municipality reveal that vast forest zones which were formerly teeming with timber and other forest products are now denuded and further devoid of trees by *kaingineros* and firewood gatherers’ (LGU Tumauni 2000:211).

Local governments perceive rural poverty, population pressure and lack of education to be at the heart of the problem (see for example PPDO 2000:107). The solutions they propose for dealing with illegal logging therefore usually are a combination of measures like the creation of alternative livelihoods, the building of farm-to-market roads, and the launching of so-called ‘environmental information and education campaigns’ (see LGU Cabagan 2000:234; LGU San Pablo 2003:XIV-3; LGU Dinapigue 2001:362-8, 371; LGU Palanan 2000:71-2). Implementation of the law is rarely mentioned as a possible solution. And if it is, insufficient funds and manpower for forest patrols and peace and order problems are brought up as factors inhibiting such law enforcement (see LGU Dinapigue 2001:368, 371; LGU Tumauni 2000:376-8; LGU Palanan 2000:71-2).⁹⁰

Local governments generally justify their tolerance of clandestine logging by calling it ‘humanizing the law’ (Huijbregts 1996). The underlying assumption of this practice is that it is unethical to deprive poor upland dwellers from the income they derive from logging (van der Ploeg, van Weerd and Masipiqueña forthcoming). As we will shortly see, however, it is questionable in whose interest it really is to be so lenient.

⁹⁰ Moreover, rather than focusing on the implementation of already existing laws, most notably the NIPAS Act (1992) and the Northern Sierra Madre Natural Park Act (1997), some municipalities design their own additional legislation.

The logistics of non-corporate logging

Despite the presence of environmental legislation the situation thus remains unchanged. Truck loads of lumber easily pass DENR, police and army checkpoints on a daily basis. Van der Ploeg, van Weerd and Masipiqueña (forthcoming) estimate that between 20,000 and 35,000 m³ of wood is illegally extracted from the Northern Sierra Madre Natural Park annually. I will show below that at least 600 loggers are harvesting various hard wood species within the park's strict protection zone on an average day. The most valued of these are *narra* (*Pterocarpus indicus*) and *almaciga* (*Aghatis demara*).⁹¹

Although the logging business is maintained by politically influential outsiders, it drives on a local workforce recruited among the rural poor. This workforce operates in teams whose only capital consists of a chainsaw, food provisions, and in some cases a *carabao* or wooden peddle boat. For lack of a road system that leads into the forest interior, log transportation mainly takes place via rivers and creeks. Logging is locally regarded as a way to earn quick and according to some even easy money. But how quick and easy is it really?

Logging is a year round activity, which is at its height between February and June. This period coincides with favourable weather conditions and the low season in the agricultural cycle. Logging is a considerable logistical operation and involves a series of activities, from tree surveying to cutting, resizing, hauling and floating the logs downstream (photo 4.3). Logging teams usually only set out for the forest after an order has been confirmed through a cash advance from the buyer, who is mostly a furniture maker, building contractor or lumber dealer from the lowlands. While the loggers are out in the forest producing the appointed volume, the buyer makes arrangements in the lowlands to prevent the confiscation of his shipment. Logging teams range from four up to eight individuals, each with their own tasks and responsibilities. Teams minimally consist of a surveyor, a chainsaw operator, a helper and several haulers. The surveyor is the person who knows where good timber can be found and he guides the team to the optimal locations. The chainsaw operator brings a helper, who carries the chainsaw and part of the provisions to the cutting area. He may also be responsible for cooking and for calling help in case the team runs out of gasoline or has engine trouble (van den Top 1998:120-2).

The logs are usually sawn into planks in the cutting area itself. Depending on the terrain, the haulers will then transport the logs to the riverside either manually or by *carabao*. On arrival at the riverside the planks are prepared for water transport. The number of planks transported at once ranges from two to twelve pieces depending on the number and nature of rapids to be met on the way. The planks are usually kept afloat by resting them on an interior tube of a truck tire. If these are not available, bamboo poles are nailed to the sides of the planks.

Selling points are mostly located just upstream of the *barangay* closest to the forest fringe; there where the road is not extending any further towards the forest. Log transportation time from the river side to the selling point ranges from three hours to two entire days. After arrival, the logs are loaded on a truck and then transported to a

⁹¹ Note that the latter species was only minimally exploited by logging companies between the 1960s-90s because of its value for Manila copal collection.

second buyer, most often a wood-mill or furniture workshop in the provincial capital Ilagan, which is the centre of the Cagayan Valley's wood industry. The municipality admits that 'The [1992] log ban didn't deter the establishment of wood-based industries within the municipality'. It still has 35 furniture workshops, 11 furniture shops, 12 woodcraft shops, and 13 wood-mills (LGU Ilagan 2003:81). Lumber deals are often made on a consignment basis: payment to the logging team is not completed until the buyer has sold the logs to the second buyer. Apart from the advance payment that is made in order to finance for the logging operation itself, the loggers usually have to wait for the rest of their payment, which is calculated on a per volume basis.⁹²

Logging is a physically demanding and risky job. Logging teams spend up to three consecutive weeks in the forest, living in basic camps along the river. Heavy loads of food provisions and gasoline are brought up to the cutting area. This is either done on foot or by pushing peddle boats upstream for days on end. Cutting and transporting logs is outright dangerous and accounts of sometimes fatal accidents are told and retold among the logging population. Unsurprisingly, loggers are always male and usually between 18 and 35 years old. Many of them come from the rural areas situated downstream of the cutting areas where they or their parents have land. They usually belong to those groups of migrants who settled in the uplands from the 1950s onwards, although some may temporarily move in for logging activities from far away provinces. Loggers are predominantly of Ilocano, Tagalog and Ifugao ethnic origin. While the older loggers have generally gained previous experience as employees of logging companies, the younger generation is learning on the job.

No systematic data are available on the contribution of logging to rural household incomes. Loggers generally claim they need the income from logging for the education of family members. Huigen and Jens (2006:2128) have demonstrated that logging increases in post-typhoon months, when emergency income is needed to compensate for agricultural losses. Local opponents of logging insist that the lion's share of loggers' earnings is spent on macho consumptives, notably alcohol. Indeed, both inside the forest and upon return to the village centres, logging goes hand in hand with heavy drinking sessions, sometimes in combination with prostitution (see also Aquino and Persoon forthcoming).

AGTA INVOLVEMENT IN LOGGING

Within the Northern Sierra Madre Natural Park logging is most intensive on the western slopes. Here, an estimated 600 to 800⁹³ loggers extract timber from the park's strict protection zone on an average day (table 4.1). Logging mainly concentrates along five rivers in the municipalities of San Pablo, Tumauni, Ilagan and San Mariano (map 2.2). In all of these watersheds, Agta groups settled long before the advent of corporate logging. When logging companies withdrew, illegal, non-corporate logging followed in their footsteps. Although logging teams may already be complete on arrival in the

⁹² The volume unit is *board foot* (bft.). There are 424 bft. in 1m³.

⁹³ These numbers are based on repeated observations by several researchers from the Cagayan Valley Program on Environment and Development, including myself. See also van Weerd, van Boven and van der Ploeg (2004:145).



Photo 4.3 Log transportation at Disabungan River, San Mariano, August 2004



Photo 4.4 Agta chainsaw operator, San Mariano, August 2004

cutting area, surveyors, haulers and occasionally chainsaw operators are often recruited from the resident Agta population (photo 4.4). This makes logging an important livelihood activity for many households in most Agta settlements in the western mountain interior.

Table 4.1 Number of Agta and non-Agta loggers per municipality and Agta settlement

Agta settlement per municipality (corresponding settlement number in map 2.2)	Agta population (no. of households)	Agta households involved in logging	Agta loggers per settlement	Estimated no. of non-Agta loggers per municipality
San Mariano	256 (47)	12	20	200
Dipili (16) and Digud (15)	52 (10)	10	15	
Camalaclacan (10)	34 (6)	0	0	
Kamerasitan (11)	40 (6)	0	0	
Diwagden (12)	60 (11)	0	0	
Divisoria (7)	14 (2)	2	5	
Diwagao (18)	38 (7)	0	0	
Dialwas (19)	18 (5)	0	0	
Ilagan	53 (13)	13	20	300-500
Disiuppi (5)	25 (5)	5	10	
Malabinao (4)	15 (4)	4	6	
Kanagman (6)	13 (4)	4	4	
Tumauini	18 (3)	3	10	50
Makihawe (2)	18 (3)	3	10	
San Pablo	28 (6)	6	10	50
Apogan (1)	28 (6)	6	10	
Total	355 (69)	34	60	600-800

At the time of research 69 Agta households, with a total population of 355, lived dispersed over around 14 river-side settlements within these logging areas. For 34 out of 59 households (58%) that were interviewed on their livelihood activities, logging turned out to be of major importance (table 4.1).⁹⁴ Together, these households produce at least 60 loggers which are active almost daily. In addition, Agta households from the coastal municipalities of Palanan, Maconacon, Divilacan and Dinapigue have been observed to temporarily move to settlements in the western watersheds where they find employment in logging during the dry season. These households are not included in table 4.1, but I estimate that they number at least 25 on a yearly basis.

The Agta's involvement in logging today goes beyond what is locally called 'tree-pointing' or the carrying of supplies. It mostly concerns log hauling, transportation as well as chainsaw operation. Although log hauling and transportation

⁹⁴ Several observations can be made regarding the 25 households in the four western municipalities that are not involved in non-corporate logging activities. As I pointed out earlier, in Diwagao and Dialwas (on the border of San Mariano and Dinapigue) all households were hired as concession guards and road surveyors by LUZMATIM. The remaining non-logging households are all situated in the somewhat less isolated Agta settlements of Camalaclacan, Kamerasitan and Diwagden (San Mariano), where they find employment in farm labour and rattan collection.

are physically very demanding, participation starts at young age. Boys early in their teens have been observed to drag logs out from the forest and manoeuvre them downriver. While none of the Agta loggers own a chainsaw, they are regularly hired as chainsaw operators. This task is taken up by teenagers from around 15 years onwards. Once in their forties, men tend to give up on logging as it simply is too physically demanding. In the following I will show that the Agta regard their involvement in logging with ambivalence. While it brings in considerable shares of household income and takes up much of Agta male working time, the environmental and social costs are high.

Time investment and income

The Disabungan Agta, who mainly reside in the settlements of Digud and Dipili, are among the residential groups involved in logging on a regular basis. During the nearly three months of field work conducted in the Disabungan watershed between 2003 and 2005, logging was observed to be of continuous importance to all resident Agta households. No day passed without several people being engaged in chainsaw operation, log hauling or transportation. Days not spent in logging usually arose when the loggers felt physically drained from previous work, or when there was an urgent need to engage in other activities.

The time allocation record for 2004-2005 shows that Disabungan men spent over 32% of their time in logging related activities (table 4.2). While around one third of this time went to logging itself, they were equally busy with hauling the logs out from the forest and transporting them downriver to the selling point. Women play an important role in claiming payment for the logs transported by their male relatives. In addition, they sometimes accompany their husbands during long transportation trips. This adds up to nearly 9% of female time expenditure.

Table 4.2 Absolute and relative time expenditure in logging among the Disabungan Agta in 2004-2005

	Male		Female	
	PWD	%	PWD	%
Logging	13.5	9.3	-	-
Hauling and log preparation	16.0	11.1	-	-
Log transportation	11.5	7.9	4.0	2.9
Claiming payment	3.5	2.4	8.0	5.9
Carrying supplies	2.0	1.4	-	-
Total time spent in logging	46.5	32.1	12.0	8.8
Total time expenditure	145.0	100.0	136.0	100.0

Although it is difficult to gain detailed insight in the relative importance of income gained from logging as part of total Agta household revenues (see the Appendix) a rough estimate can be made on the basis of the data presented below. The best available information on income earned by Agta households from logging comes from timber-buyers who agreed to keep a record of the logs the Agta supply them with. Two

such data sets are available. The first comes from the Agta of Makihawe who live along the Pinacanauan de Tumauni river (settlement no. 2 on map 2.2). They sell their logs to two buyers who both agreed to keep a record of the logs they bought from Agta loggers in the dry season of 2003. The other record comes from the Disabungan Agta. They sell their logs to many different buyers, one of whom agreed to provide details on transactions covering the period August to December 2004. These data have been complemented with records collected from interviews with Agta loggers on log transportations and transactions of which they could well remember the details. These combined records show that Agta loggers in the two watersheds earn an average daily wage of PhP130 (US\$2.35) (table 4.3).

Table 4.3 Average daily wage of Agta loggers from the Pinacanauan de Tumauni watershed (Makihawe) and the Disabungan watershed (Digud and Dipili) 2003-2005

	Pinacanauan de Tumauni (Makihawe)	Disabungan (Digud and Dipili)
Total number of transportations recorded	32	8
Total number of Agta loggers involved	8	4
Average income per Agta logger per working day in PhP (US\$)	127 (2.3)	133 (2.4)

The Makihawe Agta engage in logging only part of the year, as they move back and forth between Makihawe and various settlements along Diangu river on the eastern side of the Sierra Madre mountains. They have relatively stable business relationships with two main buyers. As we will see in Chapter V, during the summer season much of the income earned in logging on the western side of the mountains is used to pay off debts the Agta households have with shop keepers on the east coast.

In the Disabungan watershed the situation is less transparent. Many different logging financiers, mostly originating from the town centre of San Mariano, operate in this area. Relationships between Agta and non-Agta loggers are very unstable and usually last just as long as needed for the Agta to pay off their debts with one buyer before changing to the next.

The average daily income of Agta loggers presented here lies well below the standard daily wage for unskilled labour, which in the Philippines ranges from PhP150 (US\$2.7) to PhP200 (US\$3.6). Moreover, it also contrasts widely with daily incomes documented in other studies on non-corporate logging in the Sierra Madre. Van den Top (1998:154) reports that in 1994 the average log hauler earned between PhP150 (US\$2.7) and PhP300 (US\$5.4) a day, while Aquino (2004:270) claims that haulers in the Bugkalot ancestral domain in Quirino province earn as much as PhP500 (US\$9) a day. This inconsistency can be explained in various ways. First, the calculations of Agta loggers' income presented in this chapter possibly show a downward distortion because credit taken by Agta loggers with log buyers may not always be reflected in the records. Moreover, as Van den Top and Aquino do not specify their sample sizes, their figures are probably based on estimates which may show an upward distortion. Last, because of discrimination of Agta labourers in general, there possibly is indeed a substantial difference between incomes gained by Agta loggers as compared to non-Agta loggers.

The question remains to what extent Agta loggers' meagre earnings contribute to total household income. I estimate that logging generates at least 50% to 60% of Agta households' budget. First, the large amounts of time invested in the activity suggest that logging is more worthwhile than any other activity. Second, in Agta settlements located in cutting areas, logging is generally the only available source of cash income. I will show in Chapter V that, while there is a seasonal demand for paid farm labour near village centres, Agta living in the forest interior usually do not respond to this demand. As was demonstrated in Chapter III, economic alternatives such as the commercial collection of rattan and *Manila copal* provide much less stable sources of income. Last, it was observed time and again that logging provides Agta households with their basic supplies, such as rice, salt, sugar and coffee. The income from barter trade is unmistakably lower: the records presented in Chapter III showed that hunting and fishing success rates are low in cutting areas. Whenever there is catch most of this is therefore consumed within the Agta settlement.

ENVIRONMENTAL AND SOCIAL IMPACTS

The importance of logging as part of contemporary Agta livelihood is not synonymous to the Agta's appreciation of the activity. On the contrary: while they acknowledge that they derive an indispensable part of their income from logging, they also lament that the forest has, as a result of logging, decreased in size and degraded in quality. They recall how they and their parents have been moving their settlements further upstream in order to keep up with the shifting forest fringe. As we saw in the previous chapter, they worry about the negative impact logging has on their hunting and fishing activities. Hunting has become more difficult because the continuous noise of chainsaws chases wild pig and deer ever deeper into the forest. Moreover, while the forest used to consist of large trees with hardly any undergrowth, it has now become overgrown with thorny vegetation which frustrates hunting. Also, stocks of wild pig and deer dwindle because they feed on the very trees that are most valuable for the furniture industry. Game further decreases because of its over-exploitation: loggers make extensive use of snare traps and blasts. Fishing is likewise hindered because incoming loggers use nets, electric devices, poison and dynamite to fish. Another environmental effect of logging the Agta often mention is the increased impact of typhoons and heavy rainfall. As all big trees next to rivers are being cut, river banks easily flood and the water becomes murky after the slightest rain shower. This causes very bad underwater visibility and thereby also inhibits fishing.

In addition to these emic accounts of the environmental consequences of unsustainable logging, a number of other effects are worth mentioning. Both Agta and non-Agta informants report that several hard wood species (especially *narra*) are increasingly difficult to obtain, which indicates their scarcity and over-exploitation. Moreover, loggers tend to burn down tracts of forest in order to facilitate transportation of logs downhill. This not only damages the forest locally, but may also result in forest fires. The sliding of logs down steep hills further results in deep gullies which in turn cause land slides. Last, loggers leave waste, including human excrement, around their camps next to the rivers from which Agta households derive their drinking water. This poses health concerns, especially for children.

The law of the jungle

With all these adverse effects of logging, which are without exception spontaneously acknowledged by even the most active Agta loggers, why do the majority of Agta households in the study area engage in the activity? The answer is as simple as it is harsh: if you can't beat them, join them. After all, Agta loggers reason, if the trees are cut anyway, they'd better get their share. A documentary film by Gerhard van den Top in 1991 called 'The law of the jungle' already showed how illegal logging in the Northern Sierra Madre caused situations of lawlessness and anarchy. Indeed, over a decade later it is the law of the jungle that still rules. As was shown above, for every Agta logger at least ten non-Agta loggers are present in the study area on an average day. This creates a free-for-all situation in which Agta are outnumbered by non-Agta and lose control over whatever happens in their own living areas.

In all of the study sites, cutting areas are self-appointed by the various logging teams. The general rule is that those who create the trails leading to and from a cutting area, hold its user rights. Agta residents are not consulted in this process nor do they own any cutting areas themselves. Agta' attempts to turn the tide have proven unsuccessful time after time. In some cases, this leads to friction within Agta residential groups. Since the establishment of the Northern Sierra Madre Natural Park various NGOs have facilitated the appointment of so-called 'band leaders' in most Agta settlements. These band leaders are supposed to monitor resource use and to unify their relatives in counteracting illegal activities. For reasons to become clear in Chapter VI this approach has had little success. In Dipili, one informant expressed her dissatisfaction about the appointed 'band leader' as follows:

'He is our leader and is supposed to convince loggers to leave our area, but he is pro-logging! We elected him as leader because he is *bravo*: he is not scared to voice out in meetings. Still, he is not a good leader; many people are bypassing his power.'

This particular Agta leader, a man in his mid thirties and a skilled chainsaw operator indeed, recognizes his inability to live up to his residential group's expectations:

'I have been told by the DENR to protect this area, and I really want to do this but loggers keep on entering and they are going everywhere. I have told them that they are not allowed to log here, but they asked me: why can't we log here, was it you who planted the trees? Of course we were not the ones who planted the trees. So we cannot do anything, we need to have black on white authority. We told the *barangay* captain about our problems and he said: just shoot them. But we don't want that, especially since they also have fire arms. There is nothing we can do.'

This account doesn't stand on its own, rather it echoes throughout the protected area wherever Agta attempt to convince non-Agta to quit environmentally destructive and illegal activities. In some instances the perpetrators react aggressively. In most cases, however, they simply ridicule the Agta's request, after which business continues as usual.

Not only do loggers cause trouble when they are asked to leave, they are reported to misbehave in various other ways as well. First, loggers are notorious for being rather forceful in convincing the Agta to work with them. In many areas Agta wives in particular lament that their husbands were reluctant to co-operate with the loggers at the start, but eventually gave in because they were left no other choice. Alarming, there are reports of incoming loggers harassing and even raping Agta women (see also Minter and Ranay 2005b; Minter et al. 2005:13, 64). It is further common practice for incoming loggers to convince the Agta to allow access to their territories or to work for them by offering them liquor. Such drinking sessions have been observed to take place as early as 7:30 am. Another powerful form of securing Agta support is through debt-bondage. For instance, a logging team from San Mariano operating along Disabungan River, met resistance from a particular Agta family when they wished to claim a cutting area.⁹⁵ For weeks in a row the loggers let this family borrow rice, gin and other consumer goods until the amount of credit taken had become too high for the Agta family to ever be able to pay it back. It was then agreed that the loggers be given free access to the proposed cutting area as payment for the credit.

Yet, it would be incorrect to suggest that the Agta are always completely sidelined in the whirlpool of logging activity. Relationships between incoming loggers and resident Agta take different forms, with outright domination and abuse on one side of the continuum and mutual respect and enjoyment on the other side (photo 4.5). I will illustrate this point.

In San Pablo and Ilagan, the resident Agta populations have an informal agreement with incoming loggers on their code of conduct. Ideally, these loggers make a courtesy call in the Agta settlement before proceeding upstream. In addition, they bring consumer goods for the Agta. An Agta woman from Apogan reflected on this as follows:

‘We are happy with what they will just whole-heartedly bring us.’

Other benefits may comprise loggers letting the Agta borrow their chainsaws (sometimes over longer periods of time), assisting them in clearing land for cultivation by cutting down the big trees, borrowing them money without interest in case of emergency, or welcoming the Agta in their houses in downstream village centres. At times, Agta and non-Agta loggers have been observed eating together and conversing over a fire at night. However, even in San Pablo and Ilagan, Agta residents feel increasingly incapable of making incoming loggers respect this code of conduct. Since stocks of *narra* are decreasing in other places, loggers coming to Abuan River no longer originate from Ilagan alone but from other, sometimes remote, municipalities as well. According to our key informant from Disiuppi, it is these people who fail to treat the Agta with respect:

‘They treat us as if we are very low. I often told them that even though we are not educated, we still have our dignity, but they don’t care.’

⁹⁵ This account was given by the loggers themselves and was confirmed by the Agta family involved.

Along Disabungan River, this atmosphere seems to be the rule rather than the exception. Relationships between loggers and Agta are generally distant and tense. As we will also see in the next chapter, the Agta residents have repeatedly shown us damage done to their crops because incoming loggers refused to tie up the water buffalo used for log-hauling. In as far the Agta in this area are in any way assisted by the loggers, this assistance tends to take the form of debt-bondage. Conflicts over payment frequently arise (box 4.1, photo 4.6).

Not only do the Agta complain about loggers' attitudes, many loggers and logging financiers in turn complain about the Agta's alleged laziness and unreliability. The examples below suggest that these various forms of perceived non-compliance are perhaps the only viable type of resistance the Agta avail of. In February 2003, a middle class female logging financier from San Mariano came to Dipili to supervise her Agta work force. She explained to us that she had to do this because:

'The culture of the Agta is that they are lazy to bring down the trees after I have given them rice.'

In the financier's perception, after she supplied the Agta with rice as advanced payment they had told her that before anything, they needed to go hunting in order to get 'a partner' for the rice. After they returned from hunting however, the rice was finished and so they requested additional rice before they would cut down and transport trees. The financier claimed she paid the Agta in cash after they would deliver their product to the agreed selling point. According to the Agta, however, they never received any payment: all the financier gave them was the rice and some other goods, nowhere near the amount that was supposedly paid. One year later, the Disabungan Agta had stopped working for this financier, referring to her in Ilocano as *loko* (crazy). They had decided to pay off all credit the financier claimed they had with her and to not take any new credit. Once they had undone themselves of their debts they started selling logs to another buyer.

A second female logging financier working in the same area in January 2004 did not own the chainsaw but hired it from someone in a downstream village. While her husband worked on their farmland back home, and her children were in school, she earned part of the household's income by buying logs from the Agta. The Agta were to collect their payment in the form of rice and consumer goods from the village centre. The logging financier complained that she repeatedly tried to make general working agreements with them, but she was about to give up since she felt that:

'The Agta only work if they are hungry.'

Another form of tension arises over accusations of theft of food by the Agta from the loggers. Since loggers may come to the cutting area for several weeks in a row, they bring large stocks of supplies which they store in their camps while they are out cutting trees. Two incidents have been witnessed in which loggers were accusing Agta of stealing their left behind supplies.



Photo 4.5 Etong Mariano, and Winner Wagi at Disabungan River January 2004



Photo 4.6 Computation of payment for logs, Disabungan River January 2004

Box 4.1 Conflict over payment of logs in Digud

Disagreement on payment of logs had built up for several weeks when our help was called by an Agta woman in Digud one rainy evening. We agreed to mediate in the conflict. The Ilocano chainsaw owner, who was accused of under-payment, was sitting on the river bank holding a machete. A few meters away, all Agta adults living along Disabungan River had collected under the lean-to shelter of one of them, the men holding their self made guns.

According to the two Agta men involved in the conflict, it was triggered as follows. The two had been working for the Ilocano chainsaw owner as surveyors, chainsaw operators and log transporters a few months earlier. They had been given one *cavan* (or 50 kg) of rice in advance, worth PhP800 (US\$14.3). Since the total amount to be received for their labor was PhP1,000 (US\$18) the balance was PhP200 (US\$3.6). After the work was completed, two young Agta men from the same settlement went to see the Ilocano logger in order to claim this additional amount. They had run out of rice and needed the money to buy new supplies. When they arrived at the chainsaw owner's place, which is a four hour hike from the Agta settlement, he turned out not to be around. The two youngsters asked his son for the remaining amount but their request was turned down. Thus, they went home without any supplies. When the Ilocano logger arrived in the Agta settlement in order to continue his logging activities, the Agta, who were by now rather annoyed, reminded him of the outstanding payment. The logger refused since he claimed the labourers had already received all of the payment in kind. After the Agta men had insisted, the Ilocano logger had threatened them with his machete. The Agta by this time had lost patience because apart from the argument over payment, there was an additional issue.

Several weeks earlier, the same chainsaw owner and his team had been spending the night in one of the houses of the Agta in Dipili. The Agta men were not around because they went out for hunting only to find out the next morning that the loggers had damaged the house they had been staying in. In his anger, one of the Agta proclaimed to us: "If he thinks that we have no right to complain, he's wrong. Although we are only Agta, we know what we are doing and if he does not change his mind, we will be forced to kill him."

When we asked for his opinion, the Ilocano logger denied responsibility for the damaged house. He further insisted that the Agta were not in the position to expect any additional cash since they had already received the *cavan* of rice. In the end, the logger did not pay the additional amount but decided to leave the area instead, declaring that if the Agta were no longer appreciating his presence, he would not come back again.

CONCLUSION

This chapter focused on the ambivalent impact of corporate and non-corporate logging on the Agta of the Northern Sierra Madre Natural Park. Logging has caused rapid deforestation in Agta territory, especially since the mid-twentieth century. In line with other studies, I have stressed how logging has transformed the Agta's physical and social environment and how this has negatively affected their ability to make a living from hunting and fishing. At the same time, the Agta's employment as equipment guards, road surveyors and chainsaw operators in the LUZMATIM concession in Dinapigue illustrates their pragmatism towards the presence of logging companies in their living areas. It also suggests that the importance of employment in logging concessions has been underexposed in earlier ethnographic work. Likewise, now that non-corporate illegal logging has largely replaced concession logging, the majority of

Agta households residing in the western interior of the Northern Sierra Madre Natural Park are involved in this timber industry and depend on it for their daily income.

On the basis of time allocation studies, it was demonstrated that among the Disabungan Agta labour in the non-corporate, illegal timber industry consumes more than one third of male working time. Moreover, it was estimated that logging presently makes up 50% to 60% of their total household income. Ironically, while the Agta's foraging activities have come under pressure as a consequence of unsustainable logging, the Agta attempt to make up for reduced catches by generating income from logging themselves. Yet, their role remains marginal: for every ten non-Agta loggers only one Agta logger is active on an average day. Moreover, the Agta are not and will not be under the current circumstances the initiators of timber exploitation because they lack the connections, power and capital to do so.

Thus, on the one hand the Agta disapprove of logging because of its negative impact on forest qualities on which they depend for their foraging activities; on the other hand, they are widely involved in it. How to explain for this paradoxical situation? Between six and eight hundred non-Agta loggers are daily present in the Northern Sierra Madre's western interior, against a total Agta population of less than four hundred people. Although the Agta do display some amount of resistance against the influx of non-Agta loggers, the weapons of the weak are all they have. Given this situation, going with the flow is the best option. For if the forest is to be finished anyway, the Agta would rather have their share. Thus, the outside influence of logging on the Agta's situation (panarchy) is enormous and the Agta's pragmatic, even opportunistic stance towards it is their only defence. It is the best they can do to adapt to changing circumstances.

This situation gives rise to serious ecological and socio-economic concerns. If exploitation doesn't slow down, revenues from both timber and non-timber forest product extraction are likely to decrease in the near future. Socially, the situation is untenable because the Agta become ever more marginalized. Although they participate in logging activities, they do not exert any control over the extraction or transportation process, nor do they get worth for their labour. They are further physically and psychologically intimidated by incoming loggers. Moreover, past and ongoing logging activities in their living areas impede the Agta's ability to make a living from other activities than logging. As we will see in the next chapter, this not only hinders the Agta's foraging activities, but their cultivation activities as well.

The practice of 'humanizing the law', which has so far been used as an excuse by responsible government bodies for their failure to address the logging problem, proves not to be so human after all. Earlier optimism that '[...] new communities of forest migrants [have become] the principle stakeholders in what remained of the once mighty Philippine logging industry' (van den Top 2003:102) has turned out to be an illusion. After all, concession logging has been replaced by another form of uncontrolled logging, resulting in a free-for-all situation in which the law of the jungle literally rules. If this is to be called 'human' at all, it is for the timber buyers and their political connections, and certainly not for the indigenous Agta population. In the absence of law enforcement, those who most feel the impact of deforestation are left to stand alone.

V. FARMING

INTRODUCTION

The Agta have been involved in farming⁹⁶ for at least two centuries (Headland 1986:216, 334; Rai 1982:166), but little is known about the nature of these agricultural practices and their relative economic importance. Although their contemporary farming system has been more intensively studied, it has mainly received negative anthropological attention. That is, not the farming system's sophistication, but its extreme marginality has caught the eye of ethnographers. As I discussed in the introductory chapter, in the wider anthropological and archaeological debate on hunter-gatherers' adoption of agriculture, the Agta are often taken as example of peoples that seem incapable of making the switch from foraging to farming (Headland 1986; Bellwood 2005:33). Indicative of its modest character is the fact that most authors use the terms 'horticulture'⁹⁷ and 'gardening', rather than 'farming' or 'agriculture' to describe the Agta's cultivation system. And even such terms come with a qualification. Rai (1982:169) calls the Agta's swiddening activities 'desultory'. Headland (1991:6) claims that 'Agta appear to cultivate gardens more as a hobby than as an economic maximizing activity [...]'. Yet others speak of the Agta as 'part-time marginal farmers', whose horticultural efforts are a 'less than successful', 'unsophisticated affair' (Estioko-Griffin and P. Griffin 1981a:55, 66; P. Griffin 1985:351).

These statements are not the result of superficial and prejudiced observation. Instead they are founded on quantitative records on Agta cultivation practices. First of all, although all Agta are familiar with agriculture, many of them have been observed to refrain from practicing it. For instance, only 24% of the Casiguran Agta planted fields in 1983 (Headland 1986:324). Moreover, in as far as Agta do cultivate, their fields are 'tiny', with the planted area ranging from less than a seventh to one fourth of a hectare (Headland 1986:339; Rai 1982:170). Only a small variety of crops is planted, usually consisting of several root crops, corn, and in some cases rain fed rice. In addition, very little time is spent in working on these fields because once the crops are planted, weeding and guarding only sporadically take place. Rai (1982:170) recorded a time investment of less than 1% for the Disabungan Agta, while the Casiguran Agta spent 6% of their time on their fields (Headland 1986:348). The resulting harvests were equally marginal. Both Rai (1982:170) and Headland (1986:348) record an upland rice yield of around 1 metric ton of unhusked rice per hectare of land, which is far below the yields of adjoining farming populations.⁹⁸ Because of the obligation to share with kinsmen, these small harvests lasted only a couple of weeks at best. Thus, the actual nutritional contribution of these agricultural efforts to the Agta diet was minimal. The

⁹⁶ I will use the terms 'farming' and 'agriculture' in a general sense to refer to all activities that involve plant cultivation and animal husbandry.

⁹⁷ Rai (1982:165) defines this term as 'the planting of a few domestic crops in relatively small gardens by the technique of shifting cultivation'.

⁹⁸ Rai (1982:170) reports an average of 1,600 kg of unhusked upland rice for neighbouring non-Agta swiddens.

Casiguran and Disabungan Agta's fields respectively produced only 5% and 4% of food needs during the year (Headland 1991:6; Rai 1982:170).

Estioko-Griffin and P. Griffin have more than other authors emphasized the variability of Agta farming systems. In several articles they have outlined how Agta groups in the forest interior differ in their farming practices from those in down river areas (Estioko-Griffin and P. Griffin 1981a; P. Griffin 1985, 1989). The former tend to emphasize hunting and mobility while agriculture is limited to very small and extensively cultivated swiddens. These upriver groups show little interest in farming as they can obtain sufficient domestic starch by trading wild game. The second group, in contrast, lives in areas which are increasingly inhabited by non-Agta farmers. The forest is either degraded or has completely disappeared and therefore game is not readily available. Searching for alternative livelihoods, these Agta groups extend more effort in taking up swidden cultivation. They decrease their mobility in order to guard their land and intensify farming activities. Despite this variability, however, the overall marginality of Agta farming systems is stressed. Whether standing on the least or most advanced end of the cultivation spectrum, farming is considered a minor pursuit (P. Griffin 1989:61).

In explaining for this marginality, ethnographers have emphasized external socio-political factors, more than internal limitations. The most outspoken and influential proponent of this view is Headland (1986). He claims that the Casiguran Agta's efforts to take up agriculture fail because non-Agta farmers structurally undermine their attempts at farming by illegitimately taking over Agta landholdings. In the competition over the scarce resource of arable land, the Agta lose out against their politically and economically more powerful farming neighbours. As a result, the Agta are excluded from an entire economic niche in favour of those already occupying that niche. In Headland's own words: 'Local agriculturalists do not want foragers to move into full-time farming. It is as simple as that. They are dependent on their forager "clients" as suppliers of protein food, forest products and labourers, and will, one way or another, try to block any attempts of foragers to become independent farmers' (Headland 1986:427).

A related factor that is often cited as negatively affecting the Agta's ability to engage in agriculture is their intensive involvement in paid farm labour. Both Headland (1986) and P. Griffin (1985:351) stress that the Agta's employment as land labourers on non-Agta farms at the optimal time, causes their own agricultural cycle to commence under less ideal conditions. It is even argued that the Agta are under so much pressure to work as land labourers that this keeps them in a serf-like position (P. Griffin 1991:220; W. Peterson 1981:49).

Much less attention has been given to the internal barriers Agta social organization may pose to the successful development of cultivation. P. Griffin (1985:350) briefly mentions that the Agta retain a social organization suited for family bands of foragers, but not for the cooperative labour of farming. Headland (1986) gives various examples of how the Casiguran Agta's obligation to share their rice harvest with relatives causes the individual benefits of farming to remain limited. Last, the Agta's poor farming skills and lack of commitment have been mentioned as restraining their farming success (Rai 1982:170; Estioko-Griffin and P. Griffin 1981a:66). All of these internal barriers are however considered of secondary importance compared to above mentioned external barriers.

In summary, previous ethnographers have described the Agta's farming system as uniformly marginal and unsuccessful. This marginality is mostly seen as a product of the Agta's oppression and submission by neighbouring farming populations. Non-Agta farmers do not want the Agta to become farmers as this will put the two groups in direct competition over scarce arable land. Farmers therefore employ two main means to prevent the Agta from taking up agriculture. First, they illegitimately take over Agta land holdings, thereby denying the Agta the possibility to cultivate land of their own. Second, Agta are obliged to work on non-Agta farms as land labourers so regularly that this undermines their own farming activities. While several internal barriers to the successful development of cultivation have been noted, these are regarded of secondary importance in explaining for the Agta's failure to make the switch from foraging to farming.

In this chapter I will present data on contemporary Agta agricultural practices that call for reconsideration of this dominant paradigm. I will argue that the Agta's farming systems are not necessarily marginal and unsuccessful and that they show considerable variability. Moreover, I will show that the 'land grabbing' argument needs qualification. Not all cases in which Agta lose land to non-Agta are the result of theft. Also, Agta have in many cases actually been able to hold on to their land. Finally, I will demonstrate that the Agta's involvement in paid farm labour does not always stand in the way of their own farming activities. I will begin with an overview of what Agta farming systems within the Northern Sierra Madre Natural Park have in common, before outlining their main variable features. In the following paragraphs I will then discuss the farming systems of the Disabungan and Diangu Agta as examples of this variability. As no quantitative agricultural data were collected for the Dimasalansan Agta, their farming system is only generally described in the upcoming paragraph.⁹⁹ I will end this chapter by arguing that some of the dominant academic and popular perceptions on the conditions that shape the Agta's agricultural involvement need reconsideration.

SIMILARITY AND VARIABILITY OF AGTA FARMING SYSTEMS

In the course of this study, no single Agta household was encountered that had not planted one or several plots of land at the moment of the interview. The farming system differs per location however. Sometimes it concerns extensive swidden cultivation; sometimes it also involves wet-rice farming. Sometimes it is done in combination with paid farm labour; sometimes it isn't. Here, I will first address a number of common features of Agta farming systems, before turning to the different forms in which they appear.

⁹⁹ This is because no rice was planted, while cultivation of other crops took place so irregularly that it became impossible to measure the amounts planted and harvested.

Similarity

A first common feature is the Agta's land ownership situation. As we have seen in previous chapters, Agta have a communal land ownership system with respect to hunting, fishing and gathering grounds. These lands belong to the residential group and can be exploited by its members and their relatives. The right to till land within a certain river valley or coastal area is likewise based on one's kinship relations with the residential group. Just as Agta usually have access to foraging grounds within the home areas of both spouses it is therefore common for them to claim agricultural land in different locations. We will shortly see, however, that farm land is less strongly associated with communal ownership than are foraging grounds. Although usufruct rights are flexible and members from within one extended family or even the entire residential group may alternately till a certain plot, its true ownership is usually ascribed to individual households (or their descendants) who are recognized to have first cleared the land.

Yet, this ownership is generally not formally recognized. Despite their indigenous status, Agta throughout the protected area generally lack security of tenure. Efforts at granting the Agta communal land titles to their ancestral domains under the Indigenous Peoples Rights Act have not yet generated results. In some instances individual Agta have been awarded lease agreements which provide them with tenurial security for a period of twenty-five to fifty years. The most common of these are the Socialized Integrated Forest Management Agreements (SIFMA) and the Certificate of Stewardship Contracts (CSC). In practice, however, Agta are hardly aware that these agreements provide them with land ownership rights. Moreover, the land awarded to them through these tenurial instruments is usually much smaller or situated in a different location than the land they actually cultivate.

In some coastal areas, the situation is even more complicated. Although the Agta are the first settlers, and despite the protected status of the area, certain stretches of land have been titled to non-Agta townspeople. These often are local politicians or businessmen who hope to develop the land should the Isabela coast become a tourist destination in the future. Meanwhile, these official land owners have established coconut plantations. Also they often made an agreement with resident Agta families to 'take care of the land'. In practice, this means that Agta are usually allowed to harvest coconut planted by the land owners, while they cut the undergrowth to plant their swiddens. While at present this situation does not limit the Agta's farming activities, they may lose their land as soon as the official owners claim it 'back'.

Clearly, this situation is critical. Both in their relations with government and non-Agta neighbours it would greatly benefit the Agta's leverage if they formally owned their farm land. Conflicts over land between Agta and non-Agta are mostly fuelled by the Agta's extensive farming practices and their long and frequent absences. Non-Agta farmers consider this wasteful and feel it is justified to cultivate this land in order to make it more productive. Also, we will see examples below of how non-Agta farmers regard their capture of Agta land justified as exchange for outstanding debts. It must be noted however that in many cases in which Agta lose land to non-Agta, this is the result of mutually agreed transactions. De Jong (2003) has documented in detail how the Agta of Divisoria in the municipality of San Mariano have on several

occasions invited their Ibanag neighbours to purchase part of their land. These were fair transactions which did not disturb relations between the two groups (Minter 2009).

A second common feature of Agta farming systems concerns the lack of draft animals (see also Headland 1986:345-6). To address this problem and to stimulate the Agta's farming practices, since 1996 NGOs have targeted a large number of Agta residential groups in the Northern Sierra Madre Natural Park for a *carabao* dispersal project. Almost every river-dwelling Agta settlement received a pair of *carabao*, which they were supposed to communally own and care for. This has in limited cases indeed resulted in increased autonomy of Agta farmers. In most areas, however, the *carabao* dispersal was soon followed by conflict between group members over ownership and use rights. Also, many animals fell sick and died due to neglect, while others were illegitimately sold. Moreover, especially in the western watersheds the water buffalo were not used to intensify agriculture, but were instead put to work as log-haulers in logging activities. Nonetheless, water buffalo are still present in many Agta settlements, especially if the initially received pair has produced offspring. No cases are known of Agta (groups) having independently obtained a draft animal. This would require a major financial investment which Agta farmers, like many other peasants in the Sierra Madre cannot afford.

In addition to water buffalo, other farm animals are also increasingly present in Agta settlements. Many households raise chicken which they sell to nearby farmers. The first pair is usually purchased from non-Agta farmers, after which following pairs are bred, sometimes crossing them with jungle fowl which are captured alive in small snare traps (*pangate*). In addition, in recent years several Agta households have been observed to take care of pregnant pigs belonging to non-Agta farmers. If the mother successfully gives birth, the Agta caretakers may usually keep half of the piglets and any earnings derived from these. As the taboo on eating pork is very strong among most Agta individuals, these domestic pigs are by no means consumed.¹⁰⁰

A last, remarkable common characteristic of Agta farming systems concerns their 'complete lack of religious ritual' (Headland 1986:338). The apparent spiritual vacuum in which the Agta operate cannot be overlooked and leaves one with the impression that agriculture is of little cultural importance.¹⁰¹ Perhaps we anthropologists simply haven't done our job well enough, but informants themselves explicitly deny any sort of ritual practice surrounding the various cultivation stages. And whatever ritual there is, is said to have been taken from neighbouring non-Agta populations. For instance, a macaque's skull, which was found hanging in front of a Disabungan Agta's dwelling, was said to enhance the growth of the crops on their nearby field. Another such skull had accordingly been buried in a sweet potato field for the same reason. More informants recognized the positive effects of this practice, but they also explicitly stated that this was something taught to them within this generation by neighbouring Ifugao farmers.

¹⁰⁰ Many Agta consider it so loathsome to eat domestic pig that they appear to fall sick even by just thinking about it. A similar taboo is known to occur among other hunter-gatherer peoples, including the Sumatran Kubu, who disapprove of the consumption of domestic meat in general (Persoon 1994:133).

¹⁰¹ Endicott (1979a:61-2) makes a similar observation for the Batek De of Peninsular Malaysia.

Variability

Aside from these common features, there is considerable variation in Agta's farming practices. Based on a combination of qualitative observations and interviews in all Agta settlements of the Northern Sierra Madre Natural Park, and quantitative study of farming systems in two residential groups, I see three main types of Agta farmers within the protected area.

The first type consists of coast-dwelling Agta, of which the Dimasalansan residential group provides a good example. They tend to show least involvement in agriculture and practice an extensive form of swidden cultivation. Their land is situated immediately behind the beach front in brush land and coconut plantations. It is mainly planted with root crops, small quantities of corn and a limited variety of vegetables. Rice is rarely planted, and if it is, it is rain fed rice. Little time is invested in tending to these swiddens, as the Dimasalansan Agta's 2005 time allocation record illustrates (table 5.1). Dimasalansan men and women averagely spent 5.5% of their time on their fields. Most of this time went to clearing and land-preparation, tasks usually carried out by men. Guarding and weeding hardly took place at all. Harvesting was done bit by bit as vegetables and root crops ripened.

While Rai (1982:173) reports that coast-dwelling Agta were intensively involved in agricultural labour, I observed otherwise. Although coast-dwelling Agta do find incidental employment as land labourers, they mostly limit this to the rainy season, when the sea is rough and cold and fishing is difficult. The Dimasalansan Agta, for instance, spent only 1.8% of their time in paid farm labour in 2005.

Table 5.1 Relative time investment in farming and farm labour (in %) by three Agta groups in 2004-2005

	Disabungan		Diangu		Dimasalansan	
	Male	Female	Male	Female	Male	Female
Farming	3.8	12.9	11.3	4.9	8.3	2.7
Clearing and preparation	3.8	2.6	5.0	0.5	7.3	1.6
Planting	-	2.6	3.2	3.3	0.4	0.3
Guarding and weeding	-	4.8	1.7	0.3	0.2	0.2
Harvesting	-	2.9	1.4	0.8	0.4	0.6
Paid farm labour	0.0	0.0	22.7	21.9	2.5	1.1
Preparation and planting	-	-	2	2.8	-	-
Harvesting	-	-	20.6	18.7	2.5	1.1
Claiming payment	-	-	0.1	0.31	-	-

A second group is formed by the most remote Agta populations who live in the interior of the mountain range's western side. They practice a slightly more intensive form of swidden agriculture. Their fields are located on river terraces and steep hillsides at altitudes of up to 500 m. The fields are cleared from brush land and secondary forest. These inland groups plant their swiddens with rain fed rice, root crops, corn and a small variety of vegetables. They tend to devote more of their time to working on these fields than coast-dwelling Agta. The river-dwelling Disabungan Agta, for instance,

spent an average of 8.4% of their time in swidden agriculture in 2004-2005. Here, women played a major role. Aside from participating in land preparation, they did nearly all of the planting, checking, guarding, weeding and harvesting. Men's involvement was limited to clearing and land preparation.

These remote river-dwelling populations live at such great distances from non-Agta farmers, that involvement in paid farm labour is impractical and unattractive. For this part of the Agta population, land labour therefore forms no regular part of the livelihood package. The Disabungan Agta, for instance, spent none of their time in land labour activities at all in 2004-2005 (table 5.1). In rare cases, individual households from these western watersheds move to downstream farming settlements where they work as tenants during one or consecutive agricultural seasons. An important reason to do this is to be close to school-going children.

The third group I distinguish here consists of river-dwelling Agta populations living in the lowland interior of the mountain range's Pacific side, and to a lesser extent in the western lowland interior. These Agta groups practice the most intensive forms of agriculture. Their swidden fields are generally located on moderate slopes and flat river terraces. The combination of crops is similar to those planted by the mountain interior groups, but fields tend to be larger in size.

In addition to swidden fields, several of these groups have over the past decade developed irrigated rice fields. This phenomenon has thus far mostly gone unnoticed. An exception is Headland's observation of the Casiguran Agta's involvement in irrigated rice cultivation. However, as the fields were small in size, yielded only one harvest per year and produced less than the average irrigated rice field, Headland (1986:345-6) concluded that they were yet another example of how Agta farming failed rather than succeeded. In contrast, I will argue here that these cases are worth studying as they do teach us something about the variability of Agta agricultural systems. I will therefore address this issue in more detail below, while discussing the case of the Diangu Agta.

An interesting aspect of the Agta's wet rice cultivation is its relation with paid farm labour. Many Agta informants in these areas say they took up permanent cultivation partly because they gained farming skills from their work as paid farm labourers in previous years. Moreover, in the initial stage they often received technical help from non-Agta farmers. Indeed, not only does this third group of Agta farmers practice the most intensive form of agriculture, compared to the rest of the protected area's Agta population they are also most heavily involved in paid farm labour. Living in relatively close proximity to farming communities, engaging in paid labour during the planting and harvesting seasons is a logical income generating opportunity.

Although paid farm labour undeniably takes up much of the Agta's time and energy, it does not inhibit the simultaneous development of their own farms. While the Diangu Agta, for instance, spent over 22% of their time in paid farm labour in 2004-2005 and only just over 8% on their own land¹⁰² (table 5.1), as we will see they did have two rice harvests on their own land each year.

¹⁰² Note that there may be a bias in these data as time allocation studies partly coincided with the harvesting and planting seasons. If the time allocation studies would have taken place a week later, the data likely would have shown a much larger time slot spent on the Agta's own fields.

Different forms of land labour come with different forms of payment. Clearing, land preparation and planting activities are paid on a daily basis. Farm wages for these activities range from PhP60 to PhP100 (US\$1 to US\$1.8), or the equivalent of this in milled rice. In addition, labourers receive lunch and two snacks. In the case of harvesting labour, no food is provided during the work day by the landowner. Payment comes when the harvest is completed and ranges from one-seventh to one-tenth of the rice volume a labourer has produced.

The situation is different in the rare cases that Agta work as tenants. Throughout the park their number is limited to around fifteen households, most of which stay in the interior lowlands on the mountain range's eastern side. Although Agta tenants usually also have land of their own, they tend to focus on their landowner's land for as long as the tenancy arrangement lasts. Depending on who provides the inputs one-third to three-thirds of the total harvest remains with the tenant, while the rest goes to the landowner. This is in line with share-cropping arrangements elsewhere in Isabela (see Romero 2006:147). Some of these agreements are short-lived because either or both parties are dissatisfied with its outcome. They may however also last for years-on-end and even be carried over between generations. The tenant family usually stays outside but not far from the Agta community. They tend to visit their relatives regularly and mostly also engage in hunting, fishing and foraging activities.

In summary, three main groups of Agta farmers were distinguished within the protected area. The first consists of coast-dwelling Agta, who practice very extensive swidden cultivation with a focus on root crops and vegetables. They engage in paid farm labour only during the wet season. The second group consists of the most remote river-dwelling Agta groups living in the western mountain interior. They practice a slightly more intensive form of swidden cultivation than their coast-dwelling counterparts. In addition to root crops and small amounts of vegetables they plant corn and rice. Because of their remoteness, they do generally not find employment as paid farm labourers. Finally, there are river-dwelling Agta living in the lowland interior, mainly on the Pacific side of the mountain range. These Agta practice the most intensive form of swiddening, while many of them also have irrigated rice fields. Interestingly, they combine their farming activities with intensive involvement in paid farm labour. In the remainder of this chapter I will further illustrate this variability of farming practices by contrasting the Disabungan and Diangu cases.

DISABUNGAN

The current paragraph provides a description of the Disabungan Agta's farming system. This remote Agta group lives in the mountain interior of San Mariano on the western side of the mountain range. The Disabungan residential group numbers up to around 60 individuals and fluctuates between nine and 18 households, with a core group of 13 households. In addition to swidden cultivation they engage in hunting, fishing, logging and rattan gathering. Paid farm labour does not provide regular income for the Disabungan Agta as they live at considerable distance from non-Agta farmers. Below I will first provide a general account of the Disabungan Agta's history of land cultivation before turning to the details of their swidden cycle of 2004.

Land cultivation history

The Disabungan Agta's history of displacement has resulted in a movement of settlements and swidden fields in upstream direction. The elderly still remember that their parents cleared land as far downstream as Batag, Dipugpug and Pagbiguen (see map 3.1). As these settlement sites were increasingly occupied by the expanding agricultural population from the 1950s onwards, the fields have long been abandoned by their original claimants. Ponchia Mariano, a woman in her early sixties, sister of three other Disabungan women, recalls the situation as follows:

'My father had land in Pagbiguen, but we left it behind because many people moved in. Then when we were here [Digud], many people came again, but we could not transfer any further because there is no good land for cultivation upstream: it is too steep.'

Although it is likely that the Disabungan Agta have maintained small gardens for much longer than the present-day populations recalls, the clearing of land upstream of Pagbiguen is said to have started just before the LUZMATIM logging operation reached Digud in the early 1970s. The clearings were made by the parents of the eldest current Disabungan residents. As the land was initially cleared manually, only the small trees were cut and gardens remained limited in size. When corporate logging made its entry, Digud became a log pond and a dirt road was laid out stretching east beyond Dipili. River terraces were clear cut while the adjacent slopes were selectively logged. As a result, a large clearing arose at Digud and several smaller ones at Dipili. These were collectively owned by the Agta family that first initiated its clearing.

Through the years, part of this land was cultivated on and off, while new clearings arose along the margins of existing fields. The land was planted with upland rice, corn, sweet potato and cassava. Seeds and cuttings were obtained from early migrants in the village centre of Del Pilar, with whom the Agta had relatively intimate relationships. Not only did they share with the Agta some of their planting material, they also advised the Agta on how to best cultivate their land. Depending on their settlement patterns, the various extended families cultivated additional swiddens in adjacent river valleys if they resided there for a long enough period of time.

Unlike the fields that were situated at Batag, Dipugpug and Pagbiguen, those at Digud and Dipili have so far not been claimed by non-Agta farmers, and for several reasons this is not very likely to happen in the near-future. In 1996, eight Disabungan Agta households¹⁰³ were granted earlier mentioned SIFMA lots.¹⁰⁴ The eight SIFMA lots are situated immediately adjacent to each other along Digud creek and cover as much as around 7.7 ha each. Although the Agta involved seem hardly aware of their SIFMA ownership, theoretically it gives them a stronger position in holding on to their land. There are more important reasons however for the Agta's land in the Disabungan

¹⁰³ These include one couple consisting of a Disabungan Agta woman married to an Ilocano from Del Pilar. The latter died many years ago however, after which his widow remarried an Agta man who also held an adjacent SIFMA lot. This second husband passed away in 2003. It is unclear whether the woman now holds both SIFMA lots.

¹⁰⁴ These were given out by the DENR on the initiative of PLAN International Philippines, which then implemented the Northern Sierra Madre Natural Park Conservation Project (see Chapter VI).

watershed not to be eagerly wanted by others. First, the land is hard to cultivate. As we will shortly see, the most productive land is situated on steep slopes, while the flat land (where all SIFMA lots are situated) regularly floods during the rainy season and has sandy soils. Second, with the departure of the logging company in the early 1990s the Disabungan watershed lost its short-lived farm-to-market connection with the town of San Mariano. The logging roads that were built by the logging company quickly deteriorated, throwing the valley back in its original state of isolation.

Yet, it is on these marginal grounds that the Disabungan Agta, after having been pushed off their former more productive land, try their best at swidden cultivation. Like most Agta, they expect much from farming now and in the future. When asked about the main differences between life in the past and present, they refer to the increased importance of agriculture as one of the major changes. As is clear from the following statement by Mr. Wasing Mariano, who is in his fifties, decreasing returns from hunting and fishing are taken as reasons to give greater emphasis to cultivation:

‘The problem is that the forest gets smaller because logging continues. This will continue and so our children will not be able to depend on the forest anymore. That is why we plant our land and settle in one place. So that our children can still have food.’

Statements like these echo throughout the Northern Sierra Madre Natural Park and they require cautious interpretation. When interviewing people on their livelihood activities, informants often presented a spontaneous laudation of agriculture and boasted about their agricultural performances. This was however partly driven by their expectations of what we wanted to hear. For centuries, colonial as well as domestic governments, missionaries and civil society organizations have attempted to turn the Agta into sedentary farmers (see Chapter VI). The Agta are well aware that these institutions as well as surrounding populations look down upon their foraging lifestyle (see also Rai 1982:223). The usual response is to keep up appearances by exaggerating agricultural involvement. However, when probing, informants consistently say that the good thing about agriculture is that one can ‘just plant and then wait for the harvest’. Meanwhile one can then engage in other activities. These ‘other activities’ often take place as far as across the mountain range: informants from Dinapigue, for instance, told us they would plant their fields there before crossing to the Disabungan watershed, which is a two day hike away. They would return to Dinapigue once they expect their crops to be harvestable. Upon return harvests often turn out to have been (partly) taken by others, damaged by pests or to have altogether failed.

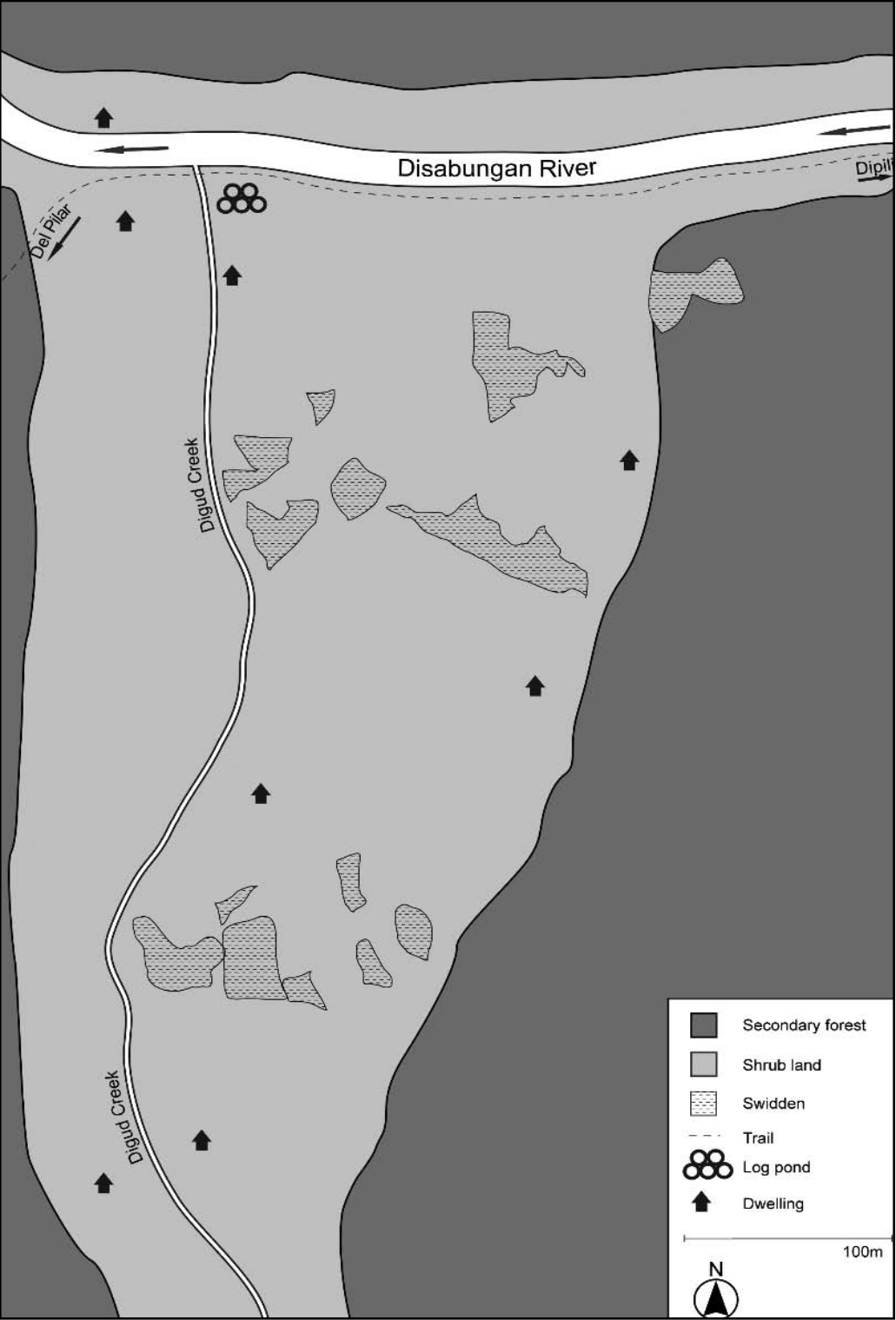
This being said, agriculture is certainly practiced consistently, even if less vigorously than Agta tend to suggest. In 2004 nine out of eighteen households encountered in the Disabungan watershed planted swiddens there. The other nine households had planted swiddens in the adjacent Diguse and Disulap watersheds to which they would return over time, but these are not included in the following analysis which focuses exclusively on the Disabungan swiddens.¹⁰⁵

¹⁰⁵ See the Appendix for a selection of maps and details on area, owners, and the biotope of fields planted by the Disabungan and Diangu Agta in 2004-2005.

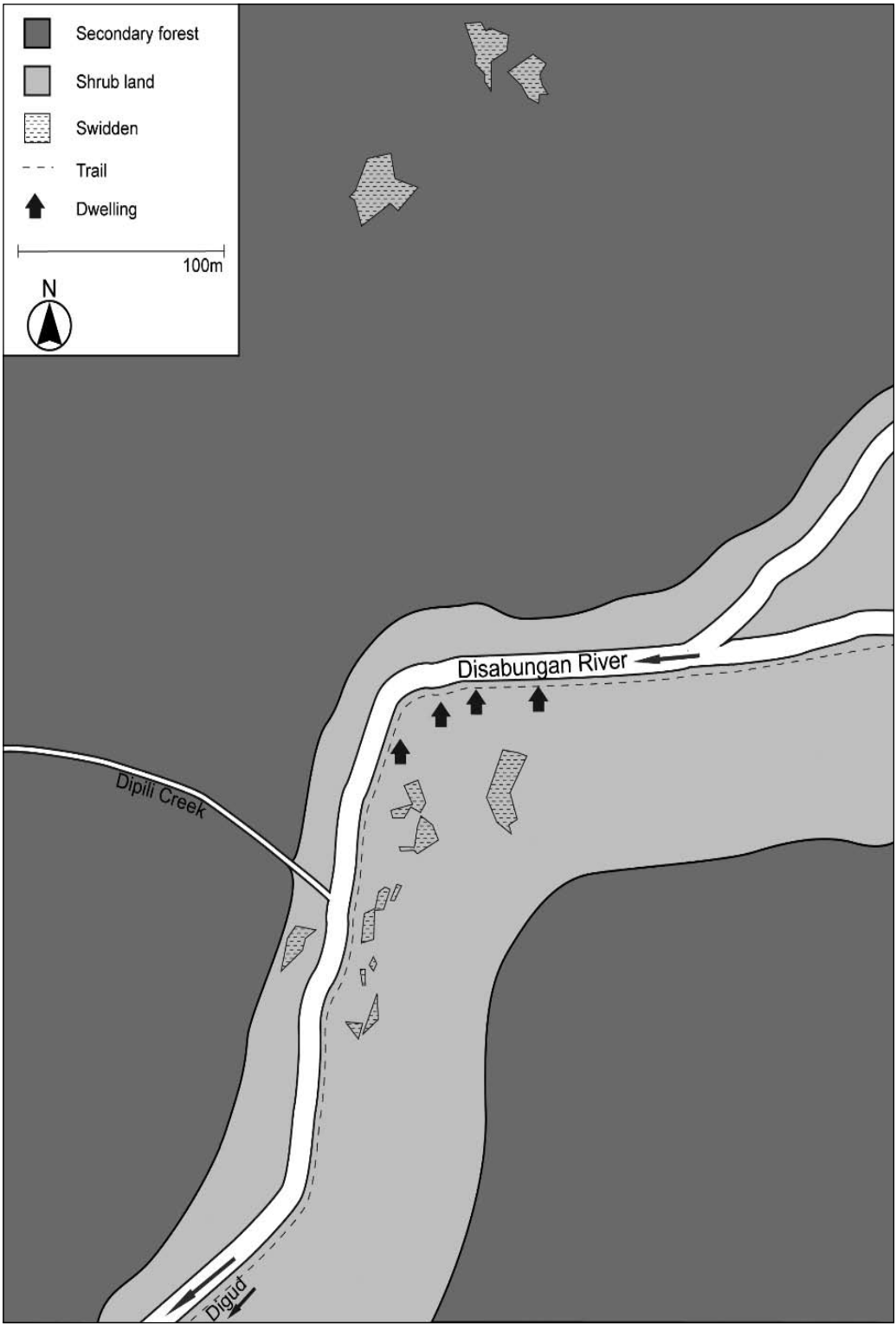
The 2004 Disabungan swiddens together covered 1.8 ha of land, or an average of only 0.2 ha per household. Most of this land (1.1 ha) was situated around the settlement site of Digud. The remaining 0.7 ha were located around the upriver settlement of Dipili (maps 5.1 and 5.2). The field size ranged from a mere two square meters to 0.3 ha. The smaller fields, which are best called home gardens, nucleated immediately around dwellings and were mostly situated on river banks. They were planted with vegetables and sometimes root crops. The larger fields were mostly situated on adjacent hillsides within ten minutes walking distance from the Digud and Dipili settlement sites. These fields were planted with rice, corn, and root crops.

Not all households cultivated equal amounts of land. In 2004 the area owned per household ranged from only 357 m² to over 0.4 ha. Most households had at least one small home garden immediately next to their dwelling and one or several larger fields just outside the camp. In general, younger people tend to cultivate smaller areas than older ones. Thus the smallest area was cultivated by a just married teenage couple, who in the following year considerably expanded their land. Also, widowed spouses and spouses of disabled people tend to cultivate relatively larger areas. This is not surprising since these individuals' opportunities to generate income from other livelihood activities are limited. For instance, one elderly woman who cultivated by far most land in 2004 is married to a crippled man. Since her husband's leg got injured in a hunting accident he has been unable to participate in any other activities than processing rattan poles. As a result the couple relies to a large extent on the woman's farming activities. Another example is an old widower, who cultivated nearly 0.3 ha of land in Dipili in 2004.

As is the general custom in the Philippine uplands, among the Disabungan Agta land is owned by those who first cleared it. As young Agta grow up and establish families of their own they may receive part of their parents' land, while these young couples at the same time also claim and clear their own land. While there is an increasing focus on individual land ownership by nuclear families, members of the same extended family often regard their land as to belong to all. Conflicts over land ownership within one extended family were not observed during this study. However, a conflict over land between the two main extended families residing in the Disabungan watershed flared up several times. These two families, related to each other through marriage ties, both claim that they were the first to clear (SIFMA) land in Digud in the early 1970s. As they can't agree as to who may use which land, one of the two extended families has chosen to claim new swiddens in Dipili. As a result of this conflict no households cultivated land both at Digud and at Dipili in 2004. As we will see later, however, it was the contested land in Digud which was least productive during the 2004 swidden cycle. Despite the unsettled conflicts, the rice harvest from Dipili was therefore partially shared with the extended family in Digud. This considerably eased the tensions and thus, in the clearing season of 2005, several households from Dipili cleared new land in Digud.



Map 5.1 Situation of Digud swiddens in 2004



Map 5.2 Situation of Dipili swiddens in 2004

The swidden cycle

The Disabungan Agta's swiddening activities will be described here as consisting of the successive stages of land selection and preparation, planting, guarding and weeding, and lastly harvesting (see also Headland 1986; Rai 1982; P. Griffin 1989).

Land selection and preparation

Typical of swidden cultivation, previously cultivated land is left fallow for a longer period of time than it has been cultivated (Conklin 1961:27). The Agta usually do not cultivate a certain area for more than one consecutive season. Thus, the cycle starts with the selection and clearing of new land. Close relatives prefer to cluster their swiddens together (see also Rai 1982:167). This allows siblings to easily work together in clearing, planting and harvesting activities. Also, it makes it easier for elderly family members to guard the land while younger family members engage in other activities away from the camp.

Clearing takes place towards the end of the wet season, usually between January and March. Swiddens are preferably cut in brush land vegetation, but may also be cleared from secondary forest. In the Disabungan watershed, two-third of the swidden area cultivated in 2004 was cleared in brush land vegetation situated on river banks. This land was generally flat or moderately sloped and had sandy, greyish or sometimes yellow coloured soils. The remaining 30% of swidden area, was cleared from secondary forest, on moderate slopes. During the following swidden cycle, which started early 2005, 1.8 ha of new swidden land was cleared in secondary forest on much steeper slopes. The reasons for this increased focus on steep forested slopes for cultivation will become clear below.

Clearing is the only male dominated stage of the agricultural process, although women are usually involved as well. Both Headland (1986:335) and Rai (1982:168) remark that Agta swiddeners tend to help each other in clearing in reciprocal exchange groups. This is a practice which seems to disappear in the Disabungan watershed. Older informants lament the decreasing interest in exchange labour by the younger generation, saying that individual households now tend to work for themselves. Indeed, the 2004 and 2005 swiddens were individually cleared by members from within one nuclear family or by the nuclear families of siblings. Depending on the size of the swidden, the type of vegetation and slope, clearing a new field took between four to ten person workdays.

First the underbrush and small trees are cut, usually using axe and machete. Afterwards the big trees are felled. While the Casiguran Agta (Headland 1986:335) hired non-Agta to do this, paying them in cash or labour,¹⁰⁶ the Disabungan Agta today follow a different strategy. Being surrounded by loggers, they either borrow a chainsaw to cut down the big trees themselves, or they ask one of the loggers to do so. Depending on the relationship this may be done for free, or the Agta return the favour by providing logs, wild meat or labour to the chainsaw owners. Both within and outside the Disabungan watershed, Agta tend to completely clear-cut their swiddens.

¹⁰⁶ This is an interesting fact, which shows that in Casiguran the Agta were not only working on non-Agta's land as labourers, but that this also occurred the other way around.

While Rai (1982:168) observed that palms, fruit trees and commercially valuable trees were often saved, today no single tree is left standing. The only exception is the *balete* tree (*Ficus balete*), which cannot be cut down for fear of upsetting the various types of supernatural beings that inhabit it. In addition to being home to malignant nature spirits, the *balete* tree is believed by most Philippine rural people to house a creature called *kapre*, a cigar smoking dwarf which is usually malevolent.

Clearing is followed by burning, which takes place in April or May. The field is prepared for this by cutting off branches of fallen trees and then leaving the vegetation to dry for several weeks. Unlike the Casiguran Agta, who thoroughly clean their cleared fields by re-burning the left over debris (Headland 1986:336), swidden fields observed throughout the Northern Sierra Madre Natural Park are usually less tidy. So many fallen trees and large stumps are left in the field that it is sometimes hardly accessible. Despite the fact that like other Agta communities in the protected area the Disabungan Agta received a pair of *carabao* through earlier mentioned agricultural support program, their fields mostly remain unploughed. This is because most of their larger fields are located on steep hillsides, while the fields in lower and flatter locations are generally planted only with root crops and corn, which does not necessarily require ploughing. Thus, the only swidden plot that was ploughed in 2004 was a patch of eleven square meters planted with beans.

Planting

Agta swiddens are planted with a modest variety of crops (photos 5.1 and 5.2). A total of eighteen different crops were found in the 2004 Disabungan fields (table 5.2). The number of crops per swidden ranged from one to eleven, but nearly three third of all fields contained a maximum of only three crops. Noteworthy is that by far the highest variety of crops was found on the field of an Agta woman married to a non-Agta man.

Table 5.2 Crops in Disabungan swiddens in 2004

Crop (common name)	Crop (scientific name)	% of swiddens in which crop was found (n=35)
1.Upland rice (different varieties)	<i>Oryza sativa</i> L.	29
2.White corn	<i>Zea mays</i>	51
3.Sweet potato	<i>Ipomea batatas</i>	63
4.Cassava	<i>Manihot esculenta</i>	63
5.Yam(<i>Gabi</i>)	<i>Colocasia esculenta</i>	29
6.Peanut	<i>Arachis hypogaea</i>	3
7.Okra	<i>Abelmoschus esculentus</i>	9
8.Eggplant	<i>Solanum melongena</i>	6
9.Pechai	<i>Brassica pekinensis</i>	3
10.Squash	<i>Cucurbita maxima</i>	11
11. String beans	<i>Phaseolus vulgaris</i>	26
12. <i>Mung</i> beans	<i>Vigna radiate</i> L.	3
13.Tomato	<i>Lycopersicum esculentum</i>	6
14.Pineapple	<i>Anana comosus</i>	12
15.Coconut	<i>Cocos nucifera</i>	3
16.Papaya	<i>Carica papaya</i>	6
17.Banana	<i>Musa acuminata</i>	9
18.Pepper	<i>Capsicum annum</i>	3

Root crops, white corn and upland rice were most consistently planted. As much as 97% of the total cultivated area was planted with a combination of these crops¹⁰⁷ (table 5.3). The remaining cultivated land was planted with pineapple, peanut and various types of vegetable. Of the latter beans were most frequently and most densely planted, occurring in 29% of the swiddens.¹⁰⁸ All other crops occurred in very low quantities. For instance, in each of the three swiddens where the vegetable *okra* was found, only one to three plants were present. Similarly, a total number of three eggplant plantings and two tomato plantings were found. This is nothing new. Headland (1986:344) observed that the Casiguran Agta planted certain crops ‘in such an insignificant number’ that he felt it is seemed ‘almost ridiculous.’ Fruit trees were similarly scarce. The low occurrence of banana on the Disabungan Agta’s swiddens (see also Rai 1982:168) is especially interesting given Headland’s observation that the Casiguran Agta planted it on over half of their fields (1986:342). These findings are influenced however by the devastation that super typhoon *Harurot* caused when it hit San Mariano in July 2003. As it destroyed 98% of the banana plantations within the municipality (Huigen and Jens 2006:2124), the typhoon also caused limited availability of new planting material for the 2004 agricultural cycle. In addition, the banana bunchy top virus, which has spread through Cagayan Valley since the 1990s (Masipiqueña 2003:110) has negatively affected the growth of banana in San Mariano in recent years.

Table 5.3 Area per crop on Disabungan swiddens 2004

Crop	Area (ha)	Area (%)
Upland rice	0.77	44.5
Upland rice and corn	0.09	5.2
Upland rice and root crops (sweet potato, cassava, yam)	0.03	1.7
Corn	0.24	13.9
Corn and root crops	0.21	12.1
Root crops	0.33	19.1
Beans	0.02	1.2
Others	0.04	2.3
Total planted area	1.73	100.0

Acquiring planting material is mainly the responsibility of women. The Disabungan swiddeners obtained their seeds and cuttings for the 2004 swidden cycle from a variety of sources. Cassava and sweet potato are the only crops which were successfully replanted from previous swiddens. Rice seed was mostly bought from non-Agta farmers in Dipugpug, Del Pilar and Casala, while some households purchased their seeds from related Agta in the Disulap watershed.¹⁰⁹ As the latter are more heavily involved in paid farm labour than their Disabungan neighbours, they avail over larger rice stocks. Noteworthy is that a Disabungan Agta woman married to an Ilocano

¹⁰⁷ Sweet potato and cassava were planted with a distance ranging from 40 cm to over one meter between plants. The distance between individual corn plants ranged from 50-80 cm on regularly planted fields, while on some fields corn was planted in very small quantities. Rice was planted with an average distance of 15-30 cm between individual plants.

¹⁰⁸ Beans were planted with an average distance of 25 cm between plants.

¹⁰⁹ One can of rice seeds contains 17.5 kg and costs PhP100 (US\$1.8).

received a can of rice seed for free from her parents in law. Corn grain was partly bought and partly obtained for free from non-Agta farmers who shared a few corn cobs or a glass of grains with the Agta. Another crop with which certain Dipugpug farmers eagerly supplied the Disabungan Agta is pineapple. Vegetable seeds were mostly obtained from related Agta within or outside the Disabungan watershed, usually for free. For instance, some of the squash came from as far as Dinapigue, while most of the beans were provided by a Disabungan Agta man who married an Ilocana in Del Pilar.

The moment of planting differs per crop, per area and per year (Rai 1982:169; Headland 1986:336; P. Griffin 1989:64-6), but most of it takes place between April and July. Corn, sweet potato and vegetables are usually planted in April and May, while rice planting takes place from May to July. Root crops are planted year-through. Planting is usually a women's task. While for most crops this is done individually, women have been seen planting root crops or vegetables together with a female relative. This doesn't happen on one particular moment, but is spread out over various days, weeks or even months. The situation is different for rice, which needs to be planted when the conditions are optimal. Moreover, rice planting usually takes place in a group, which either consists of a nuclear family or of members from within an extended family. One person prepares the holes with a dibble stick in which the rice seeds are sown by the other planters. For instance, one of the rice fields in Dipili took half a day to plant with a group of seven adult and adolescent women, one adolescent and one elderly man. Together they planted 15 kg of rice. Extrapolating this to all rice fields in the Disabungan watershed, I estimate that planting these has taken around 40 person work days in 2004.

A remarkable and thus far poorly understood feature of Agta swiddens is their relatively large share of unplanted area. The Casiguran Agta left 18% of their cleared and burnt land unplanted in 1983 (Headland 1986:339), while Rai (1982:169) reported that in each given year 75% of the Disabungan Agta's claimed land remains uncultivated. As Rai has not specified how he arrived at this unlikely high figure, it most likely is an estimate. In my own data, however, the share of unplanted land certainly shows a slight downward distortion. Only larger tracts of unplanted land were recorded, while many of the fields were in fact partly surrounded by narrow strips of cleared and burnt yet unplanted land. This led to a recorded 0.05 ha of unplanted area (3%) out of the 1.8 ha that was cleared by the Disabungan Agta in 2004 (table 5.4). While the real share of unplanted land may be slightly higher than this, it can be safely concluded that it certainly falls far below Rai's presented 75% and even Headland's 18%.

Table 5.4 Planted and unplanted area on Disabungan swiddens in 2004

	Area (ha)	Area (%)
Total cleared area	1.78	100
Planted area	1.73	97.2
Unplanted area	0.05	2.8

How can we explain for this characteristic of Agta swiddens? Headland (1986:339) has extensively searched the literature for this phenomenon, but without success. Both in the current and previous studies, Agta swiddeners consistently answer this question by saying that they ran out of seeds or cuttings before all land was planted. Could it indeed simply be a matter of misjudgement? If so, this may simultaneously explain for the practice's decline and persistence. If the clearing of more land than one can possibly plant has to do with being inexperienced, it is logical that such miscalculations decrease over the years. That it still partly persists, may then be explained by the fact that clearing and planting belong to two separate gender spheres. While men take the lead in clearing, women are mainly responsible for obtaining planting material. As we saw earlier, for this they rely on often unpredictable sources. Thus, the reality of seed availability and resources to buy these may not always match the enthusiasm with which men set out clearing land.

An alternative explanation could be that Agta swiddeners may not so much seek optimal use of their cleared land, but instead wish to establish symbolic ownership over certain areas. Given previously mentioned land ownership traditions in the Philippine uplands which prescribe that land belongs to whoever has cleared it, Agta swiddeners may feel that they need to lay claim to as much land as they can, even if they will be unable to plant all of it that year.¹¹⁰

Guarding and weeding

As mentioned, Agta often proclaim that they consider agriculture an attractive livelihood activity because 'after planting, you can just wait for the harvest.' Indeed, most Agta pay little attention to their swiddens in between planting and harvesting. While most fields are not guarded at all, a few have been seen to contain scare-crows, tin-cans or leaves hanging on rattan strings to scare off birds, while the occasional wild pig that raids fields is shot or killed by burying 'pig bombs' (blasts) around field edges. As discussed in the previous chapter, Agta hunters in the Northern Sierra Madre Natural Park do not use their swiddens to shift to 'garden hunting' (Linares 1976). Instead, most hunting takes place away from swiddens in the forest interior and the killing of game in or near agricultural areas is the exception rather than the rule.

Weeding is hardly done (see also Headland 1986:336; P. Griffin 1989:64). The Disabungan Agta limit weeding to fields cut from brush land as they say weeds grow much slower on fields cut from the forest. Dove (1985:223) has observed the same among Kalimantan Kantu' swiddeners. Disabungan men generally don't engage in weeding at all, while in the 2004 time allocation study women devoted less than 5% of their time to guarding and weeding. It took up 38% of all time spent in agriculture however. Some women spent more time in weeding than others. While those with small children hardly bother, elderly women more actively weed their fields. This difference is mostly explained by the fact that women with small children tend to spend most of their time at home.

¹¹⁰ Pest-management could provide yet another explanation (see Headland 1986:339 and Rai 1982:170), but it would take additional research to collect data that would support it.

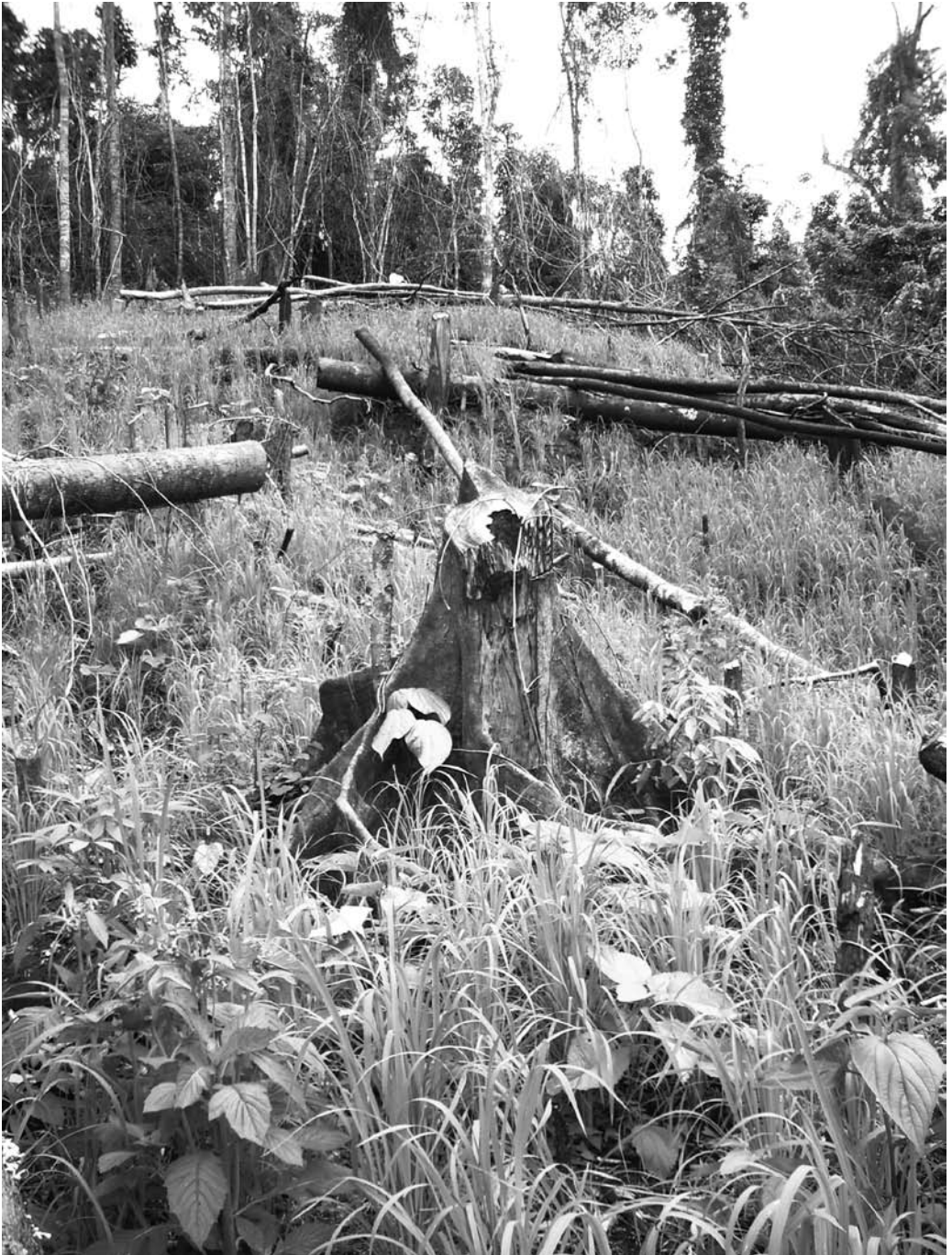


Photo 5.1 Swidden at Dipili, San Mariano, August 2004



Photo 5.2 Carmen Matias weeding her kamote field at Dipili carrying her daughter Jessica, San Mariano, January 2004

Harvesting

Harvesting is often done by children or otherwise by their mothers or grandmothers. This is done bit by bit (see also Rai 1982:171). Sweet potato, cassava, corn and vegetables are all usually gathered in amounts just large enough for one meal. Because of this it is difficult to gain systematic insight in yields. This is a serious limitation of this and other studies on Agta agricultural production that might add to the underestimation of the Agta's agricultural productivity.

Information on the importance of above mentioned crops may however also be obtained from diet records. The Disabungan Agta were observed to consume home-grown vegetables as a side-dish at 30% of 43 recorded meals. If three meals a day would have consistently been taken during the observation period, 51 meals would however been consumed. Thus, eight meals out of a potential 51 (16%) were skipped. The reason for doing so mostly was that no rice was available. Headland (1991:6, 1986:348) has called attention to the importance of especially root crops as 'famine' foods. Indeed two of the skipped meals were later during the day compensated with snacks of cassava, sweet potato or corn. Moreover, during three days on which all three meals were consumed, such snacks were also observed to be taken. All in all, on over 76% of the observed days did these Disabungan households consume home-grown vegetables or root-crops.

The situation is different for rice, which is harvested at once between October and December. As with clearing and planting, harvesting is mostly done by closely related nuclear families, with those who planted the rice on a certain swidden usually also harvesting it. This may take one to several days per swidden depending on the size of the field and the number of harvesters involved. In the case of the 2004 Disabungan rice harvest, fields were harvested by groups of women as all adolescent and adult men engaged in logging activities. For each of their rice fields the swiddeners stated the amounts of rice planted per *ganta* (2.24 kg of rice). As for the harvest, swiddeners recalled their yields per field in the number of rice bundles. The Disabungan swiddeners say that after drying, two such bundles generate one *ganta* of unmilled rice. Thus, in the analysis below each reported harvested bundle of rice represents 1.12 kg.

The resulting impression is that cultivating rice was not very rewarding for the Disabungan Agta in 2004. The total area planted with rice amounted to just under a hectare and generated a mere 169 kg of rice (table 5.5). This was only 50 kg more than the amount of rice that had been planted. This makes the Disabungan rice harvest of 2004 even less successful than it was twenty five years ago. Rai (1982:170) then reported a swidden plot of a hectare to produce one metric ton of upland rice, although he is not clear about how he arrived at this figure. Headland (1986:348, 505) observed that the Casiguran Agta's swiddens produced around 900 kg of unhusked upland rice per hectare. The 2004 Disabungan rice fields yielded not even 20% of those reported by Rai and Headland. The contrast with non-Agta farmers' harvests is even starker. The little available information on upland rice harvests in neighbouring areas suggests that these range from around 1,800 to 2,000 kg per hectare (van der Ploeg and Persoon 2007:105; Romero 2006:115). Like the Agta, most of these farmers do not use fertilizers and pesticides.

Table 5.5 Planting and harvesting ratio of upland rice on the Disabungan swiddens in 2004 (numbers rounded)

	Dipili	Digud	Total Disabungan
Amount planted in kg rice seed	59	61	119
Amount harvested in kg unmilled (and milled ¹) rice	72 (47)	96 (62)	169 (110)

¹ Based on a milling rate of 0.35 (IRRI 2007a:255)

What caused these poor results? The Disabungan swiddeners mention two main reasons, both of which are related to ongoing logging activities in their river-valley. First, as river banks are increasingly logged, fields situated along these rivers frequently flood. Especially the river banks along Digud creek and Disabungan River are vulnerable in this respect. The rice fields at Digud were for this reason completely washed out in the rainy season of 2004. Second, while staying in Digud and Dipili, loggers fail to tie up their water buffalo, which roam the river banks and eat the Disabungan Agta's crops. Although the swiddeners have repeatedly urged the *carabao* owners to either prevent such damage or compensate for it, the problem persists. Some of the smallest swiddens have been fenced with ramshackle bamboo constructions, but neither the *carabao*, nor their owners seem impressed by these.

As mentioned, the swiddens situated along Digud creek account for most of the harvest loss. None of these fields yielded any rice or corn in 2004 due to flooding and destruction by free-roaming *carabao*. And yet these were the swiddens in which most labour was invested in terms of weeding and guarding. For two widowed sisters who together owned and worked this land, this was a slap in the face. One morning in August 2004, when they found their corn and rice eaten by the *carabao* of three Ilocano loggers from San Mariano, one of them cried tears of frustration. When asked whether she had talked to the loggers about the damage, she answered she was *mabain*, ashamed. A third sister, was observed to react quite differently when the same thing happened to her later that year. Outraged, she confronted the responsible loggers and demanded they would compensate her for the damage. Although the loggers agreed at that moment, this never happened.

The only reasonably productive field in this area was situated at a higher elevation and away from the campsite. Because of its location, this swidden was neither damaged by the floods that occurred between August and November, nor by above mentioned *carabao*. In Dipili, all three rice fields were situated on steep slopes and were planted with the same upland variety. However, not all of them were equally productive. While the yields of two of these swiddens did not even compensate the invested rice seed, the third swidden yielded around five times the amount of rice that was planted. The latter, owned by an old widower, was planted first among the three. It was also situated away from the other two, which were said to have been damaged by rats and birds. Interestingly, damage by game animals like wild pig and deer, which has been reported earlier by Rai (1990:101), was not mentioned.

When visiting the Disabungan Agta within a month after they completed their rice harvest, they had entirely consumed their yield. As some households' harvests had

completely failed, they had been given a share of the somewhat more successful swiddeners. This appears to be in line with the often cited ethical obligation of sharing which is typical for hunter-gatherers and which is usually seen as an impediment to their agricultural development. As they cannot escape sharing their harvests with the entire extended family, it is argued, the gains from agriculture do not outweigh the effort invested (Sahlins 1972:32; Bellwood 2005:31-2; Woodburn 1988:57; Headland 1986:349). Indeed, the Disabungan Agta's total yield was distributed among at least nine households. By a milling rate of 0.35 (IRRI 2007a:255), this means that each of these had only around 12 kg of milled rice to consume. The diet records show that the average Disabungan household consumes 1.7 kg of rice each day. With that rate, their home-grown rice of 2004 will have lasted them only one week at the most. Headland (1986:348-9) noted a similar pattern for the Casiguran Agta's 1983 harvest.

The Disabungan Agta initially responded to the crop damage that floods and free roaming *carabao* posed by clearing their swiddens for the following season from secondary forest on even steeper and higher slopes. Yet, upon return to the Disabungan watershed in February 2007, all Digud swiddens were found abandoned and it turned out that most Agta households had moved to one of their previous settlement sites along Jetbag creek, an hour's hike east of Digud (see map 3.1). When visiting them there, they explained that the continued presence of loggers and their *carabao* in Digud had led them to move to this quieter place to settle and cultivate in the rainy season of 2005. Old swiddens had been reopened and planted along the river banks. This time the results had been much more rewarding. One household, for instance, had a rice yield of twenty sacks of unmilled rice (1,000 kg) in 2006. They and the others were however concerned about the future. Meanwhile, an old logging road at Digud leading all the way to Jetbag was being reopened, and it was expected to only take weeks for loggers and their water buffalo to reach the Agta settlement.

DIANGU

The Diangu Agta inhabit a remote river valley in the northern part of Maconacon, around 1 km inland of the Pacific Coast. At its full size, the Diangu population numbers around 60 individuals in 14 households. This paragraph will describe their farming system, which is more intensive than that of the Disabungan Agta. Over the past decade, the Diangu Agta have converted much of their swidden land into permanent wet rice fields. Moreover, they are intensively involved in paid farm labour. At the same time, hunting and fishing remain to be important livelihood components. Below follows a general description of the Diangu Agta's land cultivation history. After that, I will describe their farming activities of 2004 and 2005.

Land cultivation history

Until the late 1960s the Diangu Agta were the only inhabitants of what is today called *barangay* Sta. Marina. However, they were by no means living in isolation from agricultural groups, with whom they traded regularly. Mrs. Anday Cariño, a widow in her sixties, recalls this time as follows:

‘We were scattered during that time [meaning that they settled in numerous places, rather than in just two or three as is the case now]. We just lived from hunting, fishing and wild roots. There were no *Kristyanos* living here. We did not have coffee, sugar or salt. If we wanted to get rice or corn-meal and tobacco we walked all the way to Peñablanca [across the mountain range – a three to four day hike through the forest]. We exchanged dried fish and meat with the *Kristyanos* there.’

Mrs. Cariño’s daughter Begnit Impiel was around six years old when the first immigrants arrived in Sta. Marina. She remembers:

‘At first we were very scared of them, but the *Kristyanos* told us: “Don’t be scared of us, we are not eating you anyway.” Then we started trading with them, we spoke Ilocano with each other. After the *Kristyanos* arrived we did not walk to Peñablanca so often anymore: we only went there when we needed tobacco because that was something they [the immigrants] did not have.’

Thus, after initial suspicion was overcome, both economic and social relationships grew closer. The Diangu Agta still maintain good contact with those early immigrants who are still alive. Mr. Baldo Augustin, who arrived from Ilocos province in 1968, was among these first farming settlers. He recalls what he knew about the Agta prior to his arrival:

‘I thought they were people like my own. When I came here, I realized that they were different. They had different food: they had no rice, only food from the forest, such as wild roots and meat. Also, they had a different culture. They shared whatever they had and they had no quarrels among themselves.’

However, what Mr. Augustin calls ‘food from the forest’ also included root crops grown in small forest clearings. By the time that early migrants set foot on the shores of Sta. Marina, the Diangu Agta followed an extensive swiddening system. They planted small fields with sweet potato and cassava, the cuttings for which they obtained from Peñablanca. The upland rice that was brought in by the migrants provided them with another crop. By assisting the first settlers in their planting activities they learned how to cultivate rice and soon the Agta started to make their forest clearings larger and more numerous.

Accounts by both the Agta and immigrants of how this happened are consistent: in the first half of the 1970s, Mrs. Anday Cariño and her late husband Carlos started clearing the then forested land in Dibulo (map 5.3). They cut both big and small trees manually. In that early stage the land was used extensively and irregularly: the families often moved elsewhere for shorter or longer periods of time, leaving the land

unattended. Because by that time there were still only a handful of immigrants in the area this was not problematic.

The situation changed with the start of the first logging operations. From the late 1960s to the early 1990s commercial logging took place in the Diangu watershed. A coastal logging road was constructed, connecting the concession area with various logging towns. Along with the company came labourers to fill its many vacancies. Part of them (mostly Ilocano and Tingguian) never left again and opened land in Sta. Marina.

It was towards the end of this time of rapid and profound change in the late 1980s, that part of the Agta's land was overtaken. The Cariño family who had first cleared the land had temporarily resided elsewhere. Upon their return the land was planted by the *barangay* captain. According to all Agta and some other villagers this should never have happened as the Agta were and still are the rightful owners. Others, however, perceive the situation differently and claim that the obtained land was a fair exchange for outstanding debts the Cariño family had with the *barangay* captain. The issue remains unsolved up to this day. The Cariño family claim their land back but the former *barangay* captain does not give in unless a sum of PhP50,000 (US\$895) is paid, an amount the Agta family will never be able to afford. At present, a middle of the road solution is followed: Mrs. Anday Cariño's granddaughter and her Ilocano husband are working on the contested land as tenants. In 2004-2005 they cultivated 0.6 ha of irrigated rice.

There are other, less obvious cases in which Diangu Agta have gradually given up land they previously cultivated in favour of non-Agta residents. One family, for instance, has for several generations had friendly relations with an immigrant Tingguian family. Although the Agta family were told that they were welcome to cultivate and settle on land that was claimed by the Tingguian family, they chose instead to cultivate land in Dibulo which is commonly recognized as theirs.

Thus, the past and present of Sta. Marina are clearly not free from issues over land. It must be noted, however, that none of the residents, neither Agta nor non-Agta, hold legal titles to their land. Nonetheless, the Diangu Agta were able to hold on to most of their fields over time. Unlike the Disabungan Agta, the Diangu Agta have not needed to move upstream to avoid conflict with farming settlers. Consequently, the land they have historically occupied is mostly situated in the lower and predominantly flat portions of the Diangu Valley.

In 2004-2005 they together cultivated 3.5 ha of land. For part of this land Certificate of Stewardship Contracts (CSCs) have been given out in 1987. These provide the owners with tenure security for a period of 25 years, after which they can be renewed for another 25 years. However, as is the case in the Disabungan watershed, the importance of these contracts should not be overestimated. Although CSCs have been granted to at least eight Agta individuals, five of these no longer had the accompanying documents at the time of research. The documents of the other three could be traced and they provide each of them with around 0.7 ha of land in Dibulo. Again, as in the Disabungan case, this land is only partly situated in the currently cultivated area. Moreover, part of the CSC land is the contested area that has since years been claimed by the *barangay* captain.

With or without tenurial security, however, the Diangu Agta succeeded in converting most of their swidden land to irrigated rice fields. This intensification of

land use has been a gradual process which was influenced by various factors. Ever since the arrival of new settlers there has been a high demand for farm labour in Sta. Marina. All Agta adults and most adolescents have thus participated in planting and harvesting activities for many years. Through their extensive participation in farm labour, the Diangu Agta gained experience with all aspects of permanent rice cultivation, from land preparation, to planting, to harvesting.

Meanwhile, Mrs. Cariño's oldest daughter married an Ilocano immigrant. She thereby not only got access to additional arable land, she also gained first hand access to farming knowledge. Over the years the Agta-Ilocano couple (household no. 11 from here onwards) passed this knowledge on to the rest of the Agta residential group. The Agta land owners, advised by their Ilocano in-law, started exploring options for the construction of an irrigation system in order to convert their extensively used swiddens to permanent rice terraces. Household no. 11 itself was the first to take this step in the late 1980s. For a decade their relatives' intentions to follow their example did not materialize. Some land was situated in a disadvantageous position in relation to the source of irrigation water. Moreover, there was limited availability of ploughs and draft animals.

Land expansion and agricultural intensification speeded up after PLAN International started a livelihood support project in Sta. Marina in 1999. While this project was implemented among Agta residential groups throughout the Northern Sierra Madre Natural Park, it was nowhere as successful as it was in Sta. Marina. As the Diangu Agta had a real interest in farming, availed over suitable land and had gained extensive experience in agricultural activities as farm labourers, the seeds for success had already been sown.

Thus, agriculture indeed became a more central part of the Diangu Agta's livelihood system. This trend continued even after the project's pull-out in 2003. During regular visits to Sta. Marina between March 2004 and February 2007 all Agta households were observed to be expanding their irrigated rice fields. In some cases new rice fields were developed from existing swiddens, in other cases they were cleared in brush land or secondary forest.

Like the Disabungan Agta, the Diangu Agta are very explicit about their wish to make farming a structural part of their livelihoods. Especially women see the benefits of growing root crops near their houses, rather than having to travel to the forest and spend much energy in digging up wild roots. Both men and women take pride in the farm land they have developed so far and are clear on where they plan to extend their fields in the upcoming season. Yet, again like the Disabungan Agta, the Diangu Agta take their agricultural efforts only as far as is practical. Thus, some of the most committed Diangu farmers move back and forth between their wet rice fields in the Diangu watershed and several settlement sites in the mountain interior of Tumauni (settlements no. 2 and 3 on map 2.2), which is a four day hike away. Meanwhile, the planted land is either left on its own or taken care of by relatives. In their settlement sites across the mountain range, these families find temporary employment in logging activities. They do this mostly to earn money with which outstanding debts back in Sta. Marina can be paid. Mr. Gogai Aluad, a man in his forties and father of five, once explained his choice to leave his rice fields in Diangu behind as follows: 'Why plant

rice if you can buy it?’,¹¹¹ In summary, the Diangu Agta are among the most committed and successful Agta farmers in the Northern Sierra Madre Natural Park. At the same time, farming is only one among several livelihood options they exploit.

We will now take a look at how they do this. The Diangu Agta plant both irrigated rice terraces and swidden fields. In addition, they spend a lot of their time in paid farm labour. In the following the nature and relative importance of each of these activities will be addressed.

Swiddening

During the 2004-2005 agricultural cycle the Diangu Agta together cultivated 3.5 ha of land, which was spread out in Dibulo, Diangu and Uli (map 3.2). This land was owned and tilled by twelve closely related nuclear households, who are part of two extended families. Most of the land tilled by these households (2.5 ha) was in use for wet rice cultivation, while the rest was extensively cultivated as swidden land by a small number of households. I will start with a brief description of the importance of the latter, focusing on the swidden cycle of 2004.

The Diangu swiddens are mainly situated in Ruaran, Diangu and Uli. Ruaran is a brush land area, while Diangu and Uli are riverside locations bordering forest covered hillsides. The swiddens are cut from brush land and secondary forest on river banks and adjacent slopes. As the Diangu swiddens show much resemblance with the Disabungan swidden system in terms of crops and cultivation practices, these will not be repeated here. An important difference is however, that they are more favourably located than the Disabungan fields. As mentioned, the Diangu Agta have not been pushed to marginal farming grounds as the Disabungan Agta have. Their fields are therefore mostly located on flat or moderately sloped land at altitudes below 100 m. Also, the disturbances present in the Disabungan watershed, namely the free roaming water buffalo belonging to loggers, are absent from Diangu.

During the 2004 swidden cycle, twelve Agta households resided in the Diangu Valley. Only six of them maintained swiddens that year. Together they cultivated 0.6 ha of swidden land, of which 0.4 ha was planted with upland rice and another 0.2 ha with root crops, corn and vegetables. Only three households planted upland rice. Rough data on upland rice harvests during the 2004 swidden cycle suggest that the Diangu swiddens were far more productive than their Disabungan counterparts during the same cycle. A total of 0.4 ha yielded 350 kg of unmilled rice, which would be 875 kg for a hectare. This comes close to the figures recorded by Headland (1986) and Rai (1982).

The households that did not plant upland rice on their swiddens said they preferred to put their energy in their wet rice fields. Indeed the three households that did plant upland rice all owned wet rice fields in relatively unfavourable locations with respect to the water source. The households that did not plant swiddens at all said they

¹¹¹ Personal communication Ruud Giebels 2004. Seitz (2004:247) mentions a similar line of reasoning for the Aeta of Zambales, noting: ‘In the eyes of the Aeta it is much easier to acquire rice by trading it with the fruits of other activities than by going through the trouble of taking up wet-rice cultivation themselves.’

could easily obtain vegetables from non-Agta farmers. This has been observed many times. Diangu women and children regularly set out to the village to *agbirok ti makan*, or ‘to look for food’. They visit non-Agta acquaintances from whom they obtain one or two coconuts, a handful of vegetables, a bunch of bananas, or a few mandarins. This does not require payment. The non-Agta farmers themselves say they care to give as long as they can, and that they will be frank with the Agta women if they have nothing to spare that day. At least five out of 105 meals (4.8%) consumed by the Diangu Agta in 2004-2005 contained such ‘opportunistically foraged’ (Benjamin 1973) food.

Wet rice cultivation and paid farm labour

All wet rice fields are situated in Dibulo on the north and south banks of Dibulo creek (map 5.3). Dibulo is a continuous stretch of flat brush land, flanked with forest-covered moderate slopes on the western and northern sides. As explained, the lowland forest that once covered Dibulo was partly cut by commercial logging operations and partly by Agta swiddeners in the 1960s. Most of the now existing rice fields are converted swiddens. The oldest of these were developed in the mid-1980s on the initiative of earlier mentioned Agta-Ilocano couple (household no. 11). The more recently developed north-western set of fields has been directly cut from secondary forest. These were constructed from 2002 onwards.

Map 5.3 Situation of wet rice fields and swiddens in Dibulo in 2004-2005



Irrigation water for the fields north of Dibulo creek is derived from Pahasapas creek and diverted into various narrow canals. These were dug by several Agta and non-Agta men. The canals function reasonably well, although they regularly overflow during the rainy season.¹¹² In 2004, a hose was put up across Dibulo creek which was intended to irrigate the southern fields.¹¹³ This vulnerable system collapsed several times during the research period, which left several of these fields only incidentally watered. A more stable source of water is provided by Manopol creek, which irrigates the southernmost set of fields. While the irrigated rice fields yield two croppings per year, the rain fed fields can only be planted during the wet season.

Land preparation and planting

In October and November, irrigated fields are prepared for next year's dry season cropping. Immediately after the harvest, usually in late May or June, preparation of irrigated and rainfed fields for the rainy season cropping start. In the following, I will discuss the rainy season cropping of 2004 and the dry season cropping of 2005.

Depending on the amount of land they own, Diangu households spend between two and four days to prepare their fields. For cleaning, ploughing and harrowing they use the water buffalo and farming equipment they received through above mentioned agricultural program (photo 5.3). However, despite the fact that one of the Agta men was appointed as band leader by the implementing NGO to ensure that all Diangu households have equal access to the draft animal and farm tools, conflicts regularly arise. Interestingly, several Agta farmers avoid such tension by either borrowing or hiring a *carabao* and plough from neighbouring non-Agta.

When land preparation is completed, irrigation water is allowed to enter the fields and planting can begin. Planting activities for the 2004 rainy season cropping took place in late June and early July, but were interrupted for several days when a typhoon hit North-eastern Luzon. Between Christmas and New Year fields were planted for the 2005 dry season cropping.

The Diangu Agta almost invariably plant their fields with hybrid rice varieties.¹¹⁴ Only three out of ten households that planted rice during the 2004 rainy season cropping replanted seeds they saved from previous harvest. All others either borrowed or bought the seeds from non-Agta farmers. During the 2005 dry season cropping, seven out of twelve households used their own planting material, while the rest again relied on external sources for their seeds. When the planting material is borrowed, it is usually returned just after the following harvest. In case it is bought, it is paid in cash, meat, fish or land labour.

¹¹² As was explained in Chapter III, this irrigation canal also serves as a fishing ground for the Diangu Agta.

¹¹³ The hose was obtained from an Agta member of the Protected Area Management Board from Blos River (Reina Mercedes) who got it from above mentioned agricultural support program.

¹¹⁴ Three main varieties are planted, which are locally called R10, C14 and C18, while IRRI (2007a:168) refers to them as BR10, PSBRC14 and PSBRC18. All three varieties became available in the 1980s and 1990s.

Planting mostly takes place in two stages.¹¹⁵ First, seed beds are created in which the seeding material is allowed to germinate for several weeks. Next, the saplings are transplanted to all other rice fields where they need around four months to mature. With several people helping, planting took the Diangu Agta around one day per field in 2004-2005. Both in land preparation and in planting, the Diangu Agta farmers regularly rely on exchange-labour (*amuyo*). This involves several households working together on the land of one of them, after which the labour is reciprocated on the land of the other household(s) within the same land preparation or planting season. *Amuyo* is most often practiced between closely related households. It also incidentally occurs between Agta and non-Agta families. It is further noteworthy that during the planting seasons of 2004 and 2005, the hiring of labour was limited to the Agta-Ilocano households.

Guarding and weeding

Once planting is completed, the fields are generally left to themselves. Although the water level is regularly checked, little weeding and guarding take place. In the course of the growing season, some fields are overtaken by weeds and dykes are often in bad condition. The use of fertilizer and pesticides differs between households. While some do not use any such inputs, most take an interest-free loan of PhP500 (US\$8.9) from the farmers cooperative in Maconacon town to purchase chemical fertilizers and pesticides.¹¹⁶ Yet others borrow small amounts of these chemicals from non-Agta neighbours or from Agta relatives. Use of these inputs is very limited. The Diangu farmers do not use any form of organic fertilizer, nor do they apply any natural pesticides.¹¹⁷ Pests seriously affect the Diangu harvests however. The largest threat is posed by *cohol*, or golden apple snail (*Pomacea canaliculata*), which eats young and emerging rice plants and can completely destroy a crop.¹¹⁸ The only defence against *cohol* is to remove the snails from each rice sapling before transplanting it from the seed bed to the main rice field. An odour-spreading bug locally called *dangaw* (*Leptocorixa acuta*) poses another problem. It sucks the rice grain contents, resulting in empty panicles (Baltazar and Salazar 1979:55). Some of the applied chemical pesticides provide a remedy. Lastly, birds, especially the chestnut munia (*Lonchura malacca*) are a threat to the rice once it has matured. Sometimes, an ingenious system of cords and tin cans is put up to chase off these little birds.

¹¹⁵ An alternative planting technique that is sometimes practiced by rice farmers in North Luzon is called direct-seeding, and involves sowing the individual seeds throughout the rice field before they have germinated. This practice has not been observed among the Diangu Agta.

¹¹⁶ This cooperative is called Plant Now Pay Later and is operated by the Department of Agriculture. Farmers can get an interest-free loan of maximally PhP1,000 (US\$18) per year. The Diangu Agta usually do not go to town-centre themselves to arrange for this loan, but let the *barangay* captain take care of it on their behalf.

¹¹⁷ One of the most active Diangu farmers did however fruitlessly experiment with planting a certain tree that an acquainted non-Agta farmer used as a pesticide. The tree failed to grow though. Antolin (2000:83) and Garcia and Acay (2002:78) report that Agta plant stalks of *tagbak* (*Alpinia* sp.) around their fields as a natural pesticide.

¹¹⁸ The golden apple snail was introduced into Asia from South America during the 1980s as a potential food source after which it rapidly spread as a pest (IRRI 2007b).



Photo 5.3 Berning Ignacio ploughing his land in Dibulo, Maconacon, March 2004

Harvesting

Around four months after planting is completed, the rice is ready to be harvested. This is usually done by all members of the household that owns the land. If more labour is needed, the help of parents or siblings and their families is called. Below follows a general analysis of the 2004 rainy season cropping, which ran from June to October, and the 2005 dry season cropping, which ran from January to May (table 5.6). Informants stated the amounts planted in ‘cans’, each of which contains 15-16 kg of rice seed. Farmers refer to their harvests in *cavan* (sacks). Each *cavan* contains around 48 kg of rough rice, which after milling results in about 31 kg of rice.¹¹⁹

During the 2004 rainy season cropping, eleven Agta households were present in the Diangu watershed, all of which cultivated land. For nine of these households we have planting and harvesting data. Together, they planted 1.4 ha of irrigated rice fields. The combined yield of these fields was 4 metric tons of unmilled rice, or 2.9 ton per hectare. This is 1.3 metric ton below the irrigated rice yield registered for Isabela Province as a whole during that agricultural season (NEDA 2006:58-9).

Immediately following the 2004 rainy season cropping harvest, three of the Diangu households expanded their irrigated land, resulting in nearly 0.3 ha of new fields. Another household rehabilitated 0.1 ha of previously abandoned non-irrigated fields. Twelve households planted their fields during the 2005 dry season cropping, for all of which planting and harvesting data are available. A total of 2.5 ha of land was planted with 325 kg of rice seed, resulting in a combined yield of 6.1 metric ton of rice or 2.5 metric ton per hectare. This is nearly two metric ton less than the average hectare of irrigated rice in Isabela Province yielded in the same season (NEDA 2006:55-9).

Table 5.6 Planting and harvesting data Diangu 2004 rainy season and 2005 dry season croppings

Household	Planted area (ha)		Harvested rough rice (kg)		Harvested rough rice (kg) / ha	
	2004	2005	2004	2005	2004	2005
Hh 1	²	0.15	800	575	²	3,833
Hh 2	0.11	0.16	300	350	2,727	2,188
Hh 3	0.19	0.17	250	350	1,315	2,059
Hh 4	0.17	0.17	650	575	3,824	3,882
Hh 5	0.57	0.57	1150	1913	2,018	3,356
Hh 6	0.10	0.15	250	200	2,500	1,333
Hh 7	0.12	0.20	200	150	1,667	750
Hh 8, 9, 10 ¹	0.10	0.25	400	625	4,000	2,500
Hh 11	²	0.58	²	1175	²	2,026
Hh 12	³	0.10	³	250	³	2,500
Total	1.36	2.50	4,000	6,163		

¹ Households no. 8, 9 and 10 collectively planted and harvested their land and planting and harvesting data for the individual fields are unknown.

² No data are available for these households.

³ The household did not plant during this cropping.

¹¹⁹ By a milling rate of 0.35 (IRRI 2007a:255).

Households vary considerably in their farming success. During both croppings, yields per hectare ranged from 1.3 to around four metric tons. The least successful farmers harvested around six kg of rice for every kilogram planted, while the most successful farmers got as much as 20 kg of rice for each kilogram invested. The Diangu farmers with most land and the most favourable position with respect to irrigation water had the best harvests. This was especially evident during the 2005 dry season cropping, when water was scarce. For instance, household no. 7 had a low yield as their fields were not reached by the defect irrigation system.

Various additional observations can be made here. Of particular interest is the fact that the two women who married non-Agta farmers (households no. 5 and no. 11) had by far most land as well as the highest yields. Moreover, their returns per kilogram of invested seed were among the best. It is likely that these households' more extensive use of fertilizer and pesticides and their more intensive weeding practices partly explain for this result. The lowest yields were produced by households who only recently developed rice terraces in the Diangu watershed. Even though their land area was not necessarily small, its productivity was (yet) far from optimal. This may partly be explained by problems with the newly constructed irrigation system. Moreover, as mentioned, during the 2005 dry season cropping several of these households moved across the mountain range after planting was completed. Their absence from the Diangu watershed inhibited weeding and guarding. In some cases relatives who stayed behind kept an eye on this land, but most of it was neglected.

Net yields

So far we have focused on the gross harvests the Diangu Agta obtained from their land from the 2004 rainy season and 2005 dry season croppings. However, as can be seen from table 5.7, the average Diangu household's net harvest for the 2004 rainy season cropping amounted to 178 kg of milled rice, or 77% of their average gross harvests. The net 2005 dry season harvest averaged 380 kg of milled rice per household, amounting to 58% of the average gross harvest. How to explain for these differences?

First, the seeds which were in many cases borrowed from non-Agta farmers had to be paid back. This took around 3% of the average Diangu household's gross harvests in 2004 and 2005.¹²⁰ Next, while the Diangu Agta rarely have non-Agta labourers working on their land, they do regularly invite relatives to help in harvesting. The labourers receive one fifth share of the total amount they harvest. This is slightly more than in standard paid labour farm arrangements in the area. Among Diangu farmers who had several of these labourers working on their fields this took up around 17% of their gross yields.

The importance of working on relatives' land varies between croppings and individuals. Some households do not work on relatives' land at all, while for others it generates a major part of their rice stocks. These labour arrangements are not to be confused with sharing mechanisms, an example of which was given above for the Disabungan Agta. The Diangu Agta's labour system does not involve just sharing part of one's harvest. As we have seen, families differ considerably in the amounts of rice

¹²⁰ While unmilled rice is used for planting, for computation purposes in tables 5.7 the amount of rice to be paid back was converted to milled rice.

they produce. Yet the fact that one family produces more than another does not automatically imply that those who produce less (be it because of misfortune or lack of interest) can claim part of the more successful farmers' harvests. Certainly, there usually is willingness to help out needy relatives, as was shown for the Disabungan Agta. And there undoubtedly is considerable social pressure on relatively successful Agta farmers to accept requests to help (and thereby share) in harvesting. Still, the redistribution of rice harvests as described here for the Diangu Agta has much more in common with regular labour than with sharing arrangements. Those who wish to obtain part of someone else's harvest will have to work for it.

Table 5.7 Gross and net Diangu rice harvests 2004 rainy season and 2005 dry season cropping (in kg of milled¹ rice)

Household	Gross harvest		Deducted				Net harvest	
	2004	2005	Seeds		Labour		2004	2005
			2004	2005	2004	2005		
Hh 2	195	228	16	12	0	33	179	183
Hh 3	163	³	8	³	0	³	155	³
Hh 4	423	³	31	³	195	³	197	³
Hh 5	748	1243	0	0	98	268	650	975
Hh 6	163	³	16	³	16	³	131	³
Hh 7	130	³	8	³	0	³	122	³
Hh 8 ²	261	505	18	31	74	0	169	474
Hh 9	²	²	²	²	²	²	²	²
Hh 10	²	²	²	²	²	0	²	²
Hh 11	³	764	³	0	³	114	³	650
Total	2083	2642	97	43	383	415	1603	2282
Average	231	440	11	7	43	69	178	380

¹ Based on a milling rate of 0.35 (IRRI 2007a:255)

² Households 8, 9 and 10 collectively planted and harvested

³ No data

Paid farm labour

The amounts of rice generated from working on Agta relatives' land are relatively limited. Much more substantial volumes are produced from paid farm labour on non-Agta's farms (table 5.8, photos 5.4 and 5.5). During the 2004 rainy season and 2005 dry season harvests, Diangu households averagely obtained nearly 40% and over 30% of their total rice stocks from such labour activities respectively.

When harvesting is about to start farmers either informally notify potential Agta workforce, or Agta labourers approach the farmers to ask for employment opportunities. The rumour of demand for labour spreads fast and attracts related Agta (and non-Agta) labourers from neighbouring areas. Labourers tend to move from farm to farm. Other than the very young and very old, the entire household participates in the activities. Agta labourers often put up lean-tos next to the fields on which they work to take refuge from the sun and to consume lunch and sometimes dinner.



Photo 5.4 Evelyn Aluad cleaning rice for non-Agta neighbours, Dibulo, July 2005



Photo 5.5 Planting rice for non-Agta neighbours, Diangu, April 2005

The cutting, bundling, threshing, cleaning and drying of the rice continues from early morning until dusk. Eventually the dried rice is packed in sacks (*cavan*) of around 48 kg. Payment comes after the harvest has been completed, which may take weeks. Depending on the arrangement, the labourer's share consists of one seventh to one tenth of the produced sacks of unmilled rice.

Table 5.8 Average relative contribution of own harvest, labour on Agta fields, and labour on non-Agta fields to Diangu households' milled rice stocks after 2004 rainy season and 2005 dry season croppings

	Net own harvest		Labour on Agta's land		Labour on non-Agta's land		Total	
	2004	2005	2004	2005	2004	2005	2004	2005
Average (kg)	178	380	34	11	134	172	346	563
Average (%)	51.4	67.5	9.8	2.0	38.7	30.5	100	100

Rice for consumption and as barter product

Summarizing, while on average only around 44% of these two Diangu Agta's home-grown harvests remained within the respective households for consumption, additional rice volume was obtained from paid farm labour on the land of Agta relatives and, more importantly, on the land of non-Agta neighbours. Taken together, the average Diangu Agta household had 346 kg and 563 kg of milled rice for home consumption after the 2004 rainy season and 2005 dry season croppings respectively.

Was this enough? Diet records collected among the Diangu Agta in 2004 and 2005 show that households averagely consume 2.5 kg of rice per day.¹²¹ In that pace, the combined rice stocks of the two harvests would have lasted exactly one year. In reality, however, rice stocks are consumed much faster than this. Out of six households for which data are available, two had already consumed their entire rice stock a month after the 2004 rainy season harvest. The remaining four had consumed between 77% and 94% of their original rice stocks. Roughly a month after the 2005 dry season harvest, three out of six households had no rice left at all, while the other three had consumed between 85% and 88% of their stocks.

Where did all this rice go in just so little time? Most importantly, all Diangu households immediately set aside part of their harvest to pay off debts they had with shop owners in the village centre or with the farmer's cooperative in Maconacon town¹²² (table 5.9). While debts took 18% of the average Diangu Agta households' rice stocks generated from the 2004 rainy season harvest, this figure rose to 35% for the 2005 dry season harvest. Some households' debts were so high, or their rice yields so minimal, that their harvests did not suffice to get even with shop owners. They paid the

¹²¹ The average daily consumption of rice per household was computed by dividing the total amount of milled rice consumed by each household over the total number of observation days (35).

¹²² These debts consist of outstanding payment for household products such as rice, coffee, sugar, salt, sweets, gin and tobacco. No interest is paid.

rest of their debts with rice stocks generated from paid farm labour, or as explained in Chapter IV from income generated in other activities such as logging.

Table 5.9 Rice debts paid by Diangu households after the 2004 and 2005 harvests (in kg milled rice)

Household	2004	2005
Hh 2	85	195
Hh 3	47	¹
Hh 4	98	¹
Hh 5	163	358
Hh 6	33	¹
Hh 7	24	¹
Hh 8	7	41
Hh 9	33	130
Hh 10	66	228
Hh 11	¹	228
Total	556	1180
Average	62	197

¹ No data

Another contributor to the fast consumption of rice stocks is the fact that rice was often mechanically milled, the cost of which was paid with rice. In 2004-2005 the Diangu Agta owned only few sets of mortar and pestle. Women sometimes made use of these but they preferably avoided this laborious task by getting their rice mechanically milled in the village centre. For every eight kilograms of rice they got milled, however, they had to pay up to one kilogram (or 11%).

The quickly shrinking rice supplies are further explained by the Diangu Agta's trading behaviour. Only small shares of rice are stocked for later consumption or for replanting. This is usually not done in Agta dwellings, which are small and not watertight, but in the houses of befriended non-Agta in the village centre. Larger shares of rice are used as barter product to obtain consumer goods from two main stores. According to the Ilocano women who own these shops, Agta come most frequently as long as their rice stocks last, paying for goods with their home grown rice. After this stock has run out, Agta occasionally obtain additional goods in exchange for meat and fish, but most often on credit. Purchasing records for ten Diangu Agta households kept by above mentioned two store-owners between early November 2004 and late April 2005 show that these households together purchased a total of 247 kg of rice over this six months period, amounting to an average of 1 kg of rice per household per week. They thereby built up debts that would again be cleared with next cropping's yield.

CONCLUSION

In the anthropological and archaeological literature on transitions from foraging to farming, the Agta feature as an ultimate example of hunter-gatherer peoples who fail to adopt agriculture. The Agta's poor farming success has so far been interpreted as a sign of lacking transformability. It is argued that the Agta are attempting to turn their hunting-gathering mode of existence into a farming mode of existence, but that they are unsuccessful in making it work for various (mostly external) reasons.

Ethnographic studies have indeed presented the Agta's agricultural system as uniformly marginal. Although it recognized that the Agta's small gardens planted with root crops provide them with necessary famine food (Headland 1991:6, 1986:348), the farming system as a whole is deemed 'desultory' and 'hobbyist'. Two main factors, both related to interactions between Agta and non-Agta, have been forwarded to explain for this marginality. First, non-Agta farmers are stereotyped as purposively preventing the Agta from taking up agriculture by illegitimately taking over their land. Second, the Agta's obligations to engage in agricultural labour are thought to take so much of their time that this negatively affects their possibilities to engage in independent agriculture. This chapter has provided clues which call for a reconsideration of this view. Here, I will structure my argument around four main themes. These are the variability of Agta farming systems, forager-farmer relations, paid farm labour, and the internal characteristics of Agta farming systems.

Variability

The Agta of the Northern Sierra Madre Natural Park considerably vary in their agricultural involvement in terms of farming practices, time investment and returns. Three main groups were distinguished. The first consist of coast-dwelling Agta, who show least involvement in farming. They practice very extensive forms of swidden cultivation, exclusively concentrating on root crops and small amounts of vegetables. They also invest least time in swiddening. The coast-dwelling Dimasalansan Agta, spent only less than 6% of their time on their fields.

A second group is formed by river-dwelling Agta populations who inhabit the remote mountain interior, especially on the mountain range's western side. Their involvement in swidden cultivation is slightly more intensive than that of their coast-dwelling counterparts. In addition to root crops and vegetables, they plant upland rice and corn. The case of the Disabungan Agta was presented as an example of this swidden system. They averagely spent 8.4% of their time in farming activities. Yet, during the year of observation (2004) the Disabungan rice harvest was very poor and not even compensated the seeding material invested. Most rice fields were severely damaged by floods and free-roaming water buffalo belonging to loggers. They yielded only 169 kg per hectare and provided each Disabungan household with only 12 kg of rice to consume. As Disabungan households averagely consume 1.7 kg of rice per day, this lasted them only one week. Thus, the root crops and corn grown on the rest of their land provided important substitutes for rice. Additional rice stocks were mainly generated by engaging in logging activities.

While the 2004 Disabungan rice harvest could easily be taken as yet another confirmation of the marginal character of Agta agriculture, such a conclusion would overlook the specific circumstances of specific places and moments. This particular harvest was unsuccessful due to highly unfavourable conditions, which the Agta actively and successfully sought to avoid in following years. This being said, it cannot be denied that the general conditions for agriculture are poor in these mountain areas.

The third group distinguished here operates under much better conditions. These are river-dwelling Agta populations living in the lowland interior on the Pacific side of the mountain range. Their swiddens are situated on moderate slopes and generate better rice yields. The Diangu Agta's swiddens, for instance, yielded 875 kg of upland rice per hectare in 2004. Moreover, like several other similar groups, the Diangu Agta have over the past decade intensified their agricultural activities by developing shares of their land into wet rice fields. Often these are irrigated fields producing two croppings per year. With an average time investment in agriculture similar to that of the Disabungan Agta (8.1%), the Diangu Agta get higher returns. Instead of one rice harvest each year, the Diangu Agta have two. Moreover, yields are much higher than in the Disabungan watershed. The combined 2004 rainy season and 2005 dry season croppings yielded the average Diangu household a net rice stock of 283 kg to consume on a yearly basis. Given these households' average daily rice consumption of 2.5 kg, this stock could have lasted them a maximum of 113 days. As we have seen, however, in practice rice stocks run out much sooner as they are partly used as barter product to obtain consumer products. Thus, the rice deficit is filled by intensively engaging in paid farm labour during planting and harvesting seasons, obtaining rice on credit, bartering wild meat and fish for rice, and by occasionally engaging in logging activities across the mountain range.

Clearly, not all Agta agricultural activity is uniformly marginal. The Disabungan and Diangu cases have shown how Agta's agricultural histories may develop in diverse directions. It will be argued here that these different directions are to a large extent the result of the way in which relations between Agta and non-Agta develop.

Forager-farmer relations

The nature of forager-farmer relations is much influenced by the local history of deforestation and immigration. While the Disabungan and Diangu watersheds have both undergone industrial logging and immigration between the 1960s and early 1990s, the environmental and social impacts have not been identical.

They have been most overwhelming in the Disabungan watershed. There, the entire forest base on which the resident Agta population previously relied for both settlement and foraging activities disappeared. At the same time, the friendly and mutualistic relations that were previously maintained with resident Kalinga and early Ilocano settlers could not be reproduced with the great numbers of logging migrants of various ethnic backgrounds who settled on the denuded hillsides. For some time the Agta stayed put and held on to extensively used swidden land which they claimed as theirs. As the Agta's land was then situated on moderate slopes, it offered them reasonable prospects for further cultivation. Moreover, the early Ilocano migrants had

been mostly supportive of the Agta's agricultural activities. When additional groups of Ifugao migrants arrived, however, competition over land increased and conflicts arose. Meanwhile, the forest fringe kept on shifting upstream, which increased the distance to productive hunting and fishing grounds. In the end, the entire Agta population left their former land behind and, in several stages, they eventually moved across the ridge to where the forest had retreated. While this regained them easier access to hunting and fishing grounds, it complicated cultivation. In Digud and Dipili, where the Agta mostly settled, conditions are not favourable for agriculture, which also explains why so far no non-Agta have settled there. The Disabungan Agta depend either on extremely steep hillside plots or on flood-prone land that is heavily disturbed by the water buffalo of incoming non-Agta loggers.

The Diangu Agta have not gone through the process of displacement that the Disabungan Agta have experienced. The small numbers of pioneering immigrants that settled in the Diangu watershed in the early 1960s generally maintained friendly relationships with the Agta. Rather than pushing the latter into the mountain interior, the increased presence of non-Agta offered new trade opportunities. Moreover, these early settlers often were supportive of the intensification of the Agta's horticultural practices. When industrial logging reached the Diangu watershed several years later, clear-cutting was limited to a relatively narrow valley, while the surrounding hill-side forest was only selectively harvested. Thus, although hunting and fishing grounds were certainly disturbed, they remained sufficiently productive to continue foraging activities. Moreover, given the area's isolation, relatively few logging employees stayed after the company's pull-out. This has considerably limited pressure on arable land. Although conflicts over land did arise on several occasions, the Diangu Agta have been able to hold on to most of their land. More remarkably, they have succeeded in making it increasingly productive by turning part of their land into irrigated rice fields. This was the result of combined circumstances. First, over the years the Agta had gained extensive experience with wet-rice production through their land labour activities on non-Agta's farms. Second, marriage ties between two Agta women and Ilocano farmers provided the Diangu Agta with additional knowledge, skills and workforce to develop irrigated rice fields. Third, an NGO that wished to uplift the Agta's farming activities provided additional assistance, mainly by distributing draft animals and farming tools. Similar NGO assistance in the Disabungan watershed, where the basic conditions were very unfavourable, have not yielded any results.

Thus, forager-farmer relations can actually take positive forms. With the exception of J. Peterson's much contested work (1987a, b) (see Chapter I), this is hardly accounted for in the literature. Instead, farmers are generally stereotyped as systematically, and by implication intentionally, undermining Agta's efforts to become farmers (Headland 1986). The Agta, in turn, are stereotyped as helpless victims. What this chapter has shown, however, is that interactions between Agta and early settlers were often friendly and mutually beneficial and that they could grow into long-term social and economic relations. It is not difficult to understand how this happened. Small groups of settlers arrived in unfamiliar and rather inhospitable terrain, bringing only minimal provisions to help them through the first meagre years of agricultural pioneering. The Agta were much needed suppliers of fresh meat and fish during this hard time. After initial suspicion was overcome on both sides, for the Agta too the arrival of this handful of newcomers made life easier. First, it offered frequent trade

opportunities. Moreover, the new arrivals possessed valuable farming skills which the Agta were eager to apply. While there surely were negative exceptions, under these circumstances Agta-farmer relations have been relatively good (see also J. Peterson 1978b:64; Angned 2008).

Inter-marriage could furthermore benefit Agta residential groups. In the case of Diangu, we have seen how the marriage between an Agta woman and an Ilocano man marked the start of the development of an irrigation system and wet-rice fields that benefited the entire Agta residential group. Also, in the Disabungan watershed, the women and men who married non-Agta spouses provide much of the seeding materials. Thus, such marriages not only improve the economic position of the Agta directly involved, others share in the benefits as well. T. Headland and J. Headland (1999) have expressed worry that the increasing out-marriage of Agta women to non-Agta men results in a loss of culture and the possible future displacement of Agta populations by a new 'acculturating' population. They have however also suggested that such marriages may strengthen the populations by 'developing new cultural systems that are more in conformity with the states in which they live' (T. Headland and J. Headland 1999:5). I consider the examples presented in this chapter as supportive of the latter option.

What seems to matter in the direction that Agta-farmer relations take is the number of newcomers the Agta need to face up to. In contrast to the first farming settlers, later migrants who worked in the logging industry arrived in much larger groups. Suddenly the ratio Agta - non-Agta reversed and this had consequences. Because of their numbers, the Agta could not maintain personal relationships with each and every one of these migrants and thus interactions generally remained distant. This also implied that there was little ground for building understanding of each other's different lifestyles.

Such lack of understanding is most evident in the context of landownership. Where the early settlers understood or at least respected the Agta's temporary absences from a certain area, later migrants had little regard for such mobility. They primarily considered the Agta to neglect their land; land that in their eyes could and should be made more productive. Thus, the perceived under-exploitation of the Agta's landholdings was regularly taken as justification for taking over such land during the Agta's absences. However, although cases of outright land-theft certainly exist, more often the situation is more complicated than that. In some instances, farmers justify their underpayment or lack of payment of Agta's land by considering it a fair exchange for outstanding debts. In other cases, transfer of land holdings comes after mutually agreed on transactions, which may be initiated by both Agta and non-Agta (see De Jong 2003).

Paid farm labour

Previous studies have always regarded the Agta's involvement in paid farm labour as symptomatic of their subordinate position in rural Filipino society. It has even been claimed that the pressure to engage in land labour results in situations of servitude (Headland 1986; P. Griffin 1991; W. Peterson 1981). This chapter has shown that not

everywhere do Agta engage in paid farm labour. In fact, those living in the western mountain interiors rarely do as there are no such opportunities close at hand. Also, the coast-dwelling Agta, although they occasionally engage in land labour, generally limit this to the rainy season when fishing is difficult.

This leaves the river-dwelling Agta populations in the lowland interior as being most heavily engaged in land labour. Living relatively close to non-Agta farmers they often work on these farmers' land during planting and harvesting seasons. In exceptional cases, Agta work as tenants for one or more seasons. It is important to note here that the Agta residential groups that are most intensively involved in paid farm labour, are also most successful on their own farms. They tend to have more and more productive land than the coast-dwelling Agta and the river-dwelling residential groups in the western mountain interior. Moreover, they work their land more intensively. The Diangu Agta's situation underpins this point. While they spent as much as 20% of their time in paid farm labour in 2004-2005, they are also among the Agta groups who have successfully developed irrigated rice fields, generating two yields per year.

Internal characteristics

So far, like other ethnographers, I have emphasized external socio-political factors to explain for the success or failure of the Agta's farming efforts. Internal characteristics have received much less attention.

An exception is the ethic of sharing (Sahlins 1972; Woodburn 1988; Headland 1986; Bellwood 2005), which is not only often mentioned in relation to the Agta but to hunter-gatherers in general. The obligation to share one's harvest is seen as a major barrier in taking up agriculture. We have seen how this works out differently in the cases of Disabungan and Diangu. The Disabungan Agta do indeed follow a strong sharing ethic. When part of the Disabungan households' 2004 rice harvest failed completely, they shared in the harvest of more successful relatives. However, I have in no respect sensed that this provided a barrier for anybody to engage in agriculture. On the contrary, in the following year all Disabungan households had planted their fields again. Among the Diangu Agta, the ethic of sharing seems of much less importance. Although individual households certainly share resources such as meat and fish with each other, rice production is an individual matter. This doesn't mean that closely related households do not help each other out in times of need. However, one cannot just expect to share in another household's harvest. Receiving a share is primarily based on one's labour contribution.

Other internal characteristics that make Agta farming systems, despite their variation, so 'typically Agta' have received much less attention. These concern the small amounts of time that Agta spend on their fields, and more specifically, the unwillingness to invest time in weeding and guarding. Mobility, which we have seen to persist even if Agta have irrigated rice fields, is another such issue. While these characteristics are mentioned in previous ethnographies they have been considered of secondary importance. Perhaps this is for fear of being politically incorrect. After all, saying that Agta do not work hard enough on their fields to make them productive is easily interpreted as saying that the Agta are incapable of farming. For anthropologists

working with the Agta it is then easier to put the blame on others rather than on the Agta themselves.

There may be an alternative, however. Why do we never ask the Agta what it actually is that they wish to get from farming? What is their standard of success? Could it be that their expectations differ from ours? How inefficient is it really for an Agta household to derive only 5% of their food needs from agriculture if only 6% of their total time is invested in it (Headland 1991:4-6; Rai 1982:170)? Increasing field productivity does not only require better protection of land rights and less aggressive behaviour of neighbouring farmers (Headland 1986). That is not the whole story. Increasing farm productivity to the level of the fields of neighbouring farmers would require a lifestyle, economic system, commitment and settlement pattern similar to that of these neighbouring farmers. But who says the Agta are interested in that? And who says it will benefit them? If they were to spend more time on their land this automatically implies that they can spend less time in other activities that are of equal or even greater economic importance. Moreover, if they would really have to give up on mobility this would come with a social and economic price. Clearly, so far they have not been willing to pay that price.

In other words, what is often regarded as unsuccessful by anthropologists and technocrats alike is not necessarily experienced as such by the Agta. Obviously, there are cases of outright failure. The Disabungan Agta's 2004 rice harvest, for instance, was unsuccessful by anybody's standards, including the Agta's. However, the situation was different for the Diangu Agta's 2004-2005 rice harvests. Although these rated below the provincial average, they were of major importance to the Diangu Agta. Thus, even if agricultural achievements are far from optimal by non-Agta standards, they may still be worthwhile from an Agta point of view.

Conclusion

In conclusion, Agta farming systems are less marginal and more variable than has been suggested. Moreover, withstanding academic opinion, Agta often succeed in combining farming activities with paid farm labour. Agta throughout the Northern Sierra Madre Natural Park are involved in various forms of agriculture. This chapter has shown examples of extensive swiddening systems in the mountain interior as well as more intensive wet-rice cultivation in the lowland interior. Both systems have developed under specific local circumstances.

While it is true that Agta rarely hold legal tenure to their farm land, this worrisome situation applies to many upland farmers just as it applies to the Agta. Moreover, in the rare cases that Agta do enjoy some form of tenurial security, this does not automatically solve their ownership problems. The tenurial status of the Agta's land does not say much about the real extent of their cultivated area. Also, in reality it does not necessarily prevent their land from being claimed by others. The other way around, even without tenurial security, Agta often succeed in holding on to their land. In fact, relations between Agta and non-Agta often are much less grim than has been suggested earlier. The stereotypical image of farmers intentionally blocking Agta's

farming efforts by taking over their land, does therefore not do justice to the more variable and complex realities.

What is crucial for the Agta's ability to intensify their farming activities is the scale of deforestation and immigration they are facing. There where Agta populations have been pushed uphill and upstream into the mountain interior as a consequence of logging operations and large-scale immigration, they indeed depend on relatively marginal land that offers little opportunity for intensive agriculture. In contrast, Agta groups that have undergone less intensive pressures from logging operations and immigration often succeed in staying put in the lowland interior. Here, Agta combine working as land labourers with a gradual intensification and expansion of their own cultivation practices. In several cases this has resulted in the reasonably successful development of permanent wet rice agriculture.

The word 'permanent' should be seen in the context of the Agta's overall socio-economic system however. As the Diangu case has shown, it would be wrong to suggest that once Agta have taken the step to irrigated rice cultivation, they have forever turned into farmers. Some of the most committed rice farmers may decide to go after other opportunities if that turns out to be a wiser thing to do for economic or social reasons, or both. In that sense, farming is simply one out of several options the Agta pick from; an option that is embraced if there is reason to do so, but one that is easily (temporarily) abandoned if circumstances change. Caution should thus be taken in speaking of the Agta's cultivation practices in terms of either successful or failing efforts at switching from foraging to farming. Too often, their farming practices have been considered trivial. By the standards of the average farmer this is understandable. Yet, seeing the Agta's farming practices as part of a wider flexible hunter-gatherer livelihood package may provide a different perspective.

Instead of viewing the Agta's agricultural activities as indicative of their weak transformability, we may see them as indicative of strong adaptability, and therefore as adding to resilience. In other words, if we assume that the Agta are attempting to abandon their hunting-gathering mode of existence in favour of a farming mode of existence, it seems they fail at making the switch. Yet, if we assume that the Agta are attempting to sustain their current mode of existence by using agriculture as complementary rather than alternative livelihood component, we can conclude that they are making sensible adaptations.

VI. INTERVENTIONS

The previous four chapters have discussed the socio-economic situation of the Agta of the Northern Sierra Madre Natural Park. In this chapter, I will address government and non-government perceptions on the Agta, and attempts to improve their condition. It is important to note at the outset that these development interventions mostly aimed for a fundamental transformation that, if successful, would alter the Agta's socio-economic system in its core.

The first paragraph provides an overview of the most important change agents that have targeted the Agta over time, with emphasis on recent developments in the Northern Sierra Madre Natural Park. The succeeding paragraphs will then discuss the main fields of intervention. These are Christianization, health and education, livelihood and sedentarization, sustainable resource use, ancestral land rights, and empowerment. In the final paragraph I will assess the impacts of these interventions and their relevance for the Agta's own concerns.

CHANGE AGENTS AND THEIR INTERVENTIONS OVER TIME

National government

Attempts at development planning directed at the Agta have taken place at least since Spanish rule. The colonial interventionist agenda consistently contained three main elements, namely Christianization, sedentarization and the promotion of permanent agriculture. As with other Southeast Asian hunter-gatherers, this implied a radical breach with the cultural past (Persoon 1994:10). Not much is known about the form such interventions took under Spanish colonial rule, but it is clear that they never resulted in control of the Agta (see also Headland (1986) and the quotes taken from Zaide (1990) that are presented at the beginning of Chapter II).

American efforts towards the same goal were equally unsuccessful. In 1901, the Bureau of Non-Christian Tribes was established, together with an associated system of reserves. In practice, the bureau's policies were ambivalent. They simultaneously aimed at isolation of tribal Filipinos onto reserves in order to protect them from more dominant groups, and at 'advancing' them with the purpose of integrating them into wider Filipino society (Eder and McKenna 2004:61). The bureau's repeated attempts at moving the Agta from the mountains or the beach onto lowland farms failed. Resettled Agta returned to their original settlement areas time and again, without showing any lasting interest in living a sedentary, agricultural existence (Headland 1986:220-3; F. Keesing and M. Keesing 1934:174). Thus, the Agta remained as intangible and uncontrolled as they had always been. In his writings on the Negritos of Northern Luzon, Dean Worcester, zoologist by profession and secretary of the interior in the Philippines from 1901 to 1913, reflects on this situation as follows:

‘Unfortunately, there is little reason to believe that the *Negritos* can ever be civilized. Attempts in this direction heretofore made in the cases of individuals have usually ended in lamentable failure. Even children who have been taken very young and brought up in Christian families have shown a strong tendency to return to a wild life’ (Worcester 1906:812).

Several years later, he blames the ‘wild’ *Negritos*’ presumed low intelligence for such failure:

‘They are wonderful woodsmen and display great skill in taking fish and game and in still-hunting their enemies; but here their proficiency ends. They are good at nothing else, and their intelligence is of an exceptionally low order. [...] they are essentially a wild and nomadic people and every effort thus far put forth, by Spaniards or Americans, to educate them or materially to better their condition in any other way [...] has resulted in complete failure’ (Worcester 1912:841).

Following independence in 1946, integration, rather than isolation became the dominant focus of government programs directed at ‘non-Christians’, as *Negrito* populations were still called. In 1957 the Commission on National Integration (CNI) was established, aiming at ‘the rapid and complete economic, social, moral and political advancement of the Non-Christian Filipinos’. While the commission was authorized to implement a range of development interventions, in practice only a scholarship program for higher education received considerable funding (Eder and McKenna 2004:61). As we will shortly see, this scholarship program has never had any impact on the Agta. The CNI’s relevance for the Agta has thus remained limited to cases of dedicated assistance by individual CNI agents (see Headland 1986:258). The CNI remained a government agency until 1975, but its importance already weaned after 1967 when Manuel Elizalde, a wealthy associate of then President Marcos, was appointed as Presidential Assistant for National Minorities (PANAMIN) (Eder and McKenna 2004:61).

At least on the record, with the establishment of PANAMIN the tone of voice changed from strongly to mildly integrationist, even compassionate. Although PANAMIN was mandated to assist ethnic minorities in their integration into mainstream Filipino society¹²³ it also called it its main task to ‘protect man’s right to choose’. That is, indigenous groups were supposed ‘to be asked what they want instead of being told what they need’ (PANAMIN, undated:10; Development Academy of the Philippines, undated:267). Yet, in reality PANAMIN’s intervention program did not leave much room for choice. It was often tied to military operations against the New People’s Army (NPA) and included forced resettlement. Within the study area PANAMIN mainly targeted the Agta of Palanan, where its activities included a resettlement and livelihood project (see below) and several isolated instances of financial and educational assistance to individual Agta (box 6.3).

PANAMIN increasingly became a vehicle for Elizalde’s personal goals and the government’s political ends, neither of which benefited the welfare of the tribal populations the agency was supposed to serve (Eder and McKenna 2004:61-2). In 1983

¹²³ Presidential Decree No. 1414 ‘Further defining the powers, functions and duties of the Presidential Assistant on National Minorities and for other purposes.’

Elizalde left the country and the malfunctioning agency was dissolved (Headland 1986:259). Under President Aquino, in 1987 PANAMIN was succeeded by three separate organizations: the Office of Muslim Affairs (OMA), the Office of the Southern Cultural Communities (OSCC) and the Office of the Northern Cultural Communities (ONCC) (Persoon, Minter and Visorro 2003:220). The three agencies were lightly staffed, and received little regular funding. A main local-level administrative activity was to establish local tribal 'chieftains' and councils (Eder and McKenna 2004:62), but these have never had a lasting impact on the Agta of the Northern Sierra Madre.

Starting in the late 1980s, two developments increasingly influenced the interventionist agenda (see also Chapter I). First, there was concern over the Philippine's degrading environment. Second, alarm was raised over the loss of land by indigenous peoples. In response, the National Integrated Protected Areas System (NIPAS) was created in 1992. This allowed for the proclamation of protected areas such as the Northern Sierra Madre Natural Park, but on the condition that indigenous peoples cannot be removed from these areas and are granted special use rights over natural resources. In the following year, the Department of Environment and Natural Resources (DENR) issued an administrative order (DAO no. 2), which enabled indigenous peoples' to claim their ancestral land, even within protected areas. The ancestral domain system came forth from a series of community based forest management policies which formed a breach with the punitive approach that was dominant until the late 1970s. Rather than seeing forest dwellers as illegal encroachers on public land, they came to be seen as indispensable partners in sustainable forest management (Aquino 2004:62-4).

Recognition of ancestral domain rights was taken a step further with the enactment of the Indigenous Peoples' Rights Act (IPRA) in 1997. The IPRA allowed for conversion of ancestral land claims into land titles. With that, the primary responsibility for indigenous peoples' affairs came to rest with the newly created National Commission on Indigenous Peoples (NCIP), which replaced the OSCC and the ONCC, while the OMA continued to exist as a separate government agency (Eder and McKenna 2004:62). The commission is mandated to 'protect and promote the interest and well-being of [...] [indigenous peoples] with due regard to their beliefs, customs, traditions and institutions' (NCIP 1997: section 39). Its most important task is to convert existing ancestral domain claims into titles and to process new ancestral domain title applications. The NCIP's operation has however long been hampered by its absence from the field. This was partly due to the debates on IPRA's constitutionality which lasted until 2001 (Ballesteros 2001), and partly to internal budgetary and personnel problems (van Velthoven 2004:52). As a result, it was only in the course of 2005 that the NCIP started to target the Agta of the Northern Sierra Madre (see box 6.1 for the NCIP's descriptions of the Agta as posted on its website).

Not only did the main government body for indigenous affairs make a slow start, the IPRA also hardly had an impact on development planning by line agencies. For instance, in its latest regional development plan, the National Economic Development Authority only briefly mentions the presence of indigenous populations in the Cagayan Valley. It does not specify their ethnic background, numbers, distribution or economic situation. Moreover, only incorrect reference is made to the presence of these

indigenous peoples' ancestral domains within the region (RLUC 2005:36). In regional development planning, indigenous groups thus still hardly are a factor to reckon with.

Box 6.1 Descriptions of the Agta, Aeta and Dumagat on the NCIP website

On its website, the NCIP (2008) provides different ethnographic descriptions for the Agta, Aeta and Dumagat, but in its census and overview of their geographical distribution, these groups are mixed up. As is visible from the following, the commission views all of these groups as primitive tribes, and perceives them to live in close harmony with nature, and even display animal-like instincts and behaviour.

Agta: 'They are dark-skinned, kinky-haired, pug-nosed, and thick-lipped people with a height of less than five feet tall. They generally are bare footed. The men used G-strings but now they wear shorts. The women wear clothes similar to lowlanders. [...] Houses are built in clusters ranging from two to five families for economic and security purposes. They get their food by means of the *kaingin* [swiddening] system. They also work for landlords but receive a very minimal daily wage, not even enough for subsistence. [...] They marry at an early age of fourteen to their chosen partner but since they have no marriage rites, the couple simply live together as husband and wife. They practice polygamy and at present, the Agtas do not subscribe to family planning, believing that marriage is to produce offspring and that only God determines the number of children a couple will have. [...] The Agtas believe in Anitos and the Spirits of the ancestors to whom they offer dances during rituals. Some dances depict animal and hunting movements. There is no organized political leadership. However, the older and more experienced males in the community are consulted for arbitration purposes.'

Aeta: 'These Aetas are nomadic and build only temporary lean-to shelters made of two folded sticks driven to the ground and covered with palm or banana leaves. The more prosperous and modernized Aetas have learned to live in villages on tablelands and mountain clearings. They live in houses made of bamboo and cogon grass. [...] The Aetas senses are highly developed. Their senses of direction and smell are extraordinary. They can tract down a snake by its smell and can identify different kinds of plants and its flowering patterns.'

Dumagat: 'The term Dumagat may have been derived from the word *gubat* (forest) and *hubad* [not translated by the NCIP, but meaning 'naked']. The more logical origin of its name is *taga-dagat* which referred to "sea-gypsies". [...] They have beautifully proportioned bodies, arms, legs, and breasts especially among women. [...] They are peace-loving people.'

Local government

Similar lack of attention for indigenous peoples' concerns exists at the level of local government. The latest development plan for Isabela Province, for instance, holds no reference whatsoever to either indigenous peoples in general or the Agta in particular (PPDO 2000). Within each province, municipalities have to produce so-called Comprehensive Land Use Plans (CLUPs) every five to ten years. These plans contain a profile of the municipality's population as well as a vision of its social and economic

development for the next planning period. A review of the most recent of these CLUPs for all nine municipalities in the Northern Sierra Madre Natural Park shows just how little priority is given to the Agta. Symptomatic of this lack of attention is the inaccurate representation of the Agta in municipal population counts (see also Chapter II). It is poorly known where the Agta live and how many they are.¹²⁴

Further mention of the Agta remains largely limited to brief historical references in several of the municipal development plans' introductions (box 6.2). Much like above presented depictions by the NCIP (box 6.1), these radiate romantic nostalgia and stereotype the Agta either as fierce tribesmen or as peace and nature loving noble savages. The Agta appear to be perceived more as a remnant of the past than as part of contemporary rural populations. Meanwhile the great socio-economic challenges that they face remain unaddressed.

The only exception is the municipality of Divilacan, which mentions 'the needs of the Dumagat minorities' in its top-seven priority list of development issues and concerns (LGU Divilacan 2007:12). Elsewhere, the plan states that '[...] about 50% or more of the population [are] unable to meet the minimum basic needs and most of these are indigenous communities' (LGU Divilacan 2007:8). The municipality therefore resolves 'to render extensively and efficiently basic social services especially to the indigenous communities' (LGU Divilacan 2007:13). Yet, how such 'delivery of basic services' is to take shape, and what it comprises remains unspecified.

In practice, development assistance is usually limited to the ad-hoc distribution of so-called 'relief goods', which follows on periods of extreme weather conditions. As Divilacan's 2005 accomplishment report shows, among its main outputs for that year the municipality listed the distribution of '7 sacks of used clothing, 61 boxes of candies, 2 boxes of Johnson Powder, 75 pairs of sandals/shoes, 13 boxes of noodles and 200 toothbrushes to Agta and other indigent families' (LGU Divilacan 2005:49). The phrase 'other indigent families' deserves elaboration here. It is a general complaint of Agta communities that they are not provided with relief goods that are intended for them, or that they are required to work or pay for benefits that other residents receive for free. Thus, the little support available for the Agta often does not reach them. As the executive assistant of the mayor of Divilacan, Mr. Andres Aggulin, who is a Cordilleran migrant, put it in March 2004:

'[...] it shows from our programs how little we care for them [the Agta]. It is only when NGOs come in that specific programs are set up. But, in those cases [...] it is often people from outside who are benefiting, not the Agta. They are perhaps IPs [indigenous peoples] in the places where they came from, but not here. Here the Agta are the only IPs.'

¹²⁴ Only two municipalities include the Agta in overviews of the ethnic composition of their populations. These are Dinapigue, which reports 202 Agta individuals for 2001 (LGU Dinapigue 2001:22-3), and Divilacan which gives a total of 702 'Dumagats' for 2004 (LGU Divilacan 2007:45).

Box 6.2 Historical references to the Agta in municipal development plans

Maconacon: ‘The name Maconacon was derived from Dimaconacon River. The first syllable ‘Di’ was associated to names of places, rivers and creeks by the Agtas. [...] The Agtas (Filipino pygmies locally called ‘Dumagats’) have long ago inhabited the general area along the eastern foothills of the Sierra Madre mountain range from Cagayan up north to Aurora Province in the south. Living in groups of 5-10 closely related families, these natives depend on riverbanks and forests to hunt and gather food. [...] The Agta communities that largely rely on the river and reef for fishing, collecting, hunting and foraging have gradually adopted swidden farming as their source of livelihood. These farms are mostly planted to lowland rice, banana, root crops, vegetables and some fruit trees. In some areas, the Agta also practice sedentary cultivation with farms devoted to rice, corn, vegetables and pineapples’ (LGU Maconacon undated:2-1, 3-3).

Divilacan: ‘Nomadic tribes of Dumagats populated the area since time immemorial prospering the primeval waters and jungles stocked with fish and wild game. [...] In the native Dumagat dialect, the word ‘Vilican’ is a compound word, which means fish and shell. The word “Di” implies origin. Therefore, Divilacan literally means, “Where fish and shells abound”’ (LGU Divilacan 2007:20).

Palanan: ‘The early tribes are the Negritos and Aetas in the mountains and its shores. [...] Since the place was inhabited by fierce Aetas, the Ibanags from the lowland Isabela used to warn their close friends with the word “Palanammu” which means feeling of apprehension or beware. Similarly, some vagabond Tagalogs who reached the place either as a refuge during rough sailing or by pure adventure named the place “Palatanan” which is suggestive of the nature of the residents. Eventually, the word metamorphosed to its present name “Palanan”’ (LGU Palanan 2000:1-2).

Dinapigue: ‘The municipality [...] boasts of thick and vast forested area which is home not only to indigenous plant and animal species but also to Indigenous Peoples (Dumagats). [...] Dumagats originally inhabited Dinapigue, like other coastal towns in the Cagayan Valley. Derived from the name of the tribe’s leader, the name stuck as migrants started coming in’ (LGU Dinapigue 2001:4).

San Mariano: ‘The [...] Negritos in the area today are not significantly different from the group as Semper [Karl Semper, 1861] described 120 years ago but due to the influx of more civilized/cultured groups of people and the continuing education of these aborigines, some socio-economic changes in their lives are observed and noted. At present there is only a mild trace of this culture in the developing communities especially in the poblacion [town centre] for the original ethnic groups are nomadic in nature. Thus, they reside in remote and forested areas of the municipality’ (LGU San Mariano 2000: no page).

Civil society

This lack of government attention has been noted by several other institutions which have targeted the Agta of the Northern Sierra Madre Natural Park. The most visible of these are missionary and non-government organizations (NGOs). The New People’s

Army (NPA), the armed wing of the communist party, plays a more unobtrusive role but is nonetheless worth mentioning. Finally, private individuals incidentally show an interest in the Agta's plight. I will here briefly introduce each of these actors.

Missionary organizations have one main goal, which is to convert the Agta to Christianity. In addition they engage in other activities, such as the provision of education, medical support and livelihood assistance. The most important missionary organization active within the Northern Sierra Madre Natural Park is the Summer Institute of Linguistics. This Born Again Christian organization has been involved in bible translation in the Philippines for over 50 years. Within the protected area, it is mainly active along the coastal areas around Palanan, where it has a missionary station at Dibungco (settlement no. 59 on map 2.2). A second church-based organization, the Diocese of Ilagan, is mainly active around Dinapigue. In addition to promoting Roman Catholicism among the resident Agta population, it is also engaged in non-formal education and human rights advocacy for the Agta situated in logging and mining concessions.

The various NGOs that have worked in the Northern Sierra Madre since the mid-1990s were all primarily oriented towards nature conservation. They worked on the establishment of the Northern Sierra Madre Natural Park, the drafting of its management plan and the support of local government institutions in its implementation. In doing so, they followed a so-called integrated conservation and development approach (NORDECO and DENR 1998). That is, the eventual goal of conservation was not to be attained by denying people access to the protected area, but by regulating their resource use through information campaigns and poverty alleviation programs. The latter came in the form of alternative livelihood projects and delivery of basic services.

Several of these NGOs specifically targeted the Agta. The most notable are the Danish Nordic Agency for Development and Ecology (NORDECO), PLAN International-Philippines (hereafter PLAN) and the World Wildlife Fund Philippines (hereafter WWF). NORDECO provided technical assistance to the World Bank funded Conservation of Priority Protected Areas Project (CPPAP) until the project ended in 2001. PLAN implemented the first phase of the Dutch funded Northern Sierra Madre Natural Park Conservation and Development Project (NSMNP-CP) from 1996 to 2002. WWF implemented the project's second phase, but following a negative evaluation the donor terminated its operation in late 2004 (Persoon and van Weerd 2006:93).

Of the various NGOs that have been active in the park, PLAN has been most important in terms of interventions directed at the Agta. It is important to emphasize here, however, that conservation was the overall goal, and any activities directed at the Agta were to serve that purpose. Thus, with respect to its indigenous peoples program, PLAN aimed to 'enhance the socio-economic condition of the indigenous cultural communities as a distinct community, which can be promoted for sustained protection and conservation of biodiversity of the NSMNP' (PLAN 2001a: Annex I-59-60). Three main activities took place to attain this goal. First, ethnographic documentation of the Agta's way of life; second, identification, formulation and provisioning of livelihood, health and other support services; and third, providing assistance in the application of ancestral domain titles. The latter activity was partly carried out in cooperation with NORDECO. In return for these projects, 'the Agta [...] beneficiaries

vowed to help protect the Park's resources [...] against destructive extraction activities' (PLAN 1998:10).

After PLAN was succeeded by WWF in 2003, the project's indigenous peoples' component lost in importance. Interventions directed at the Agta were minimal, but will be addressed in the following paragraphs whenever relevant. Since 2004, none of these NGOs are still active within the Northern Sierra Madre and no others have yet taken their place.

A different type of influential factor is the NPA. This communist insurgent group has had significant impact on specific Agta individuals, namely those who were either voluntary or involuntary enlisted. Again, the NPA's own agenda, which is to bring about a communist revolution, does not have much to do with striving for Agta well-being. But as we will see, it has had a spin-off effect in terms of education, health care and empowerment.

Finally, there are isolated private initiatives which are usually limited in scope and set-up, but which do nonetheless have an impact on individual Agta, be it for better or for worse. The most far-reaching of these concerns the (forced) adoption of Agta children (box 6.3). Most private initiatives are however less impactful and mostly involve the financing of Agta children's education (sometimes in return for the child's assistance in household activities) and assistance in reporting local disputes to government authorities. The advocates may be genuinely concerned local residents, business people with an interest in Agta support, and Filipino or foreign anthropologists.

Box 6.3 Adoption

The quote by Worcester (1906:812) which appears at the beginning of this chapter makes mention of Negrito children being taken to live with Christian families, but it is difficult to assess the scale at which such (forced) adoption took place. As far as I know, in the Philippines no (colonial) government programs have existed which aimed at the systematic removal of Agta children from their families in order to 'civilize' them, comparable to the infamous Australian and Canadian programs.

Nonetheless, there have been and still are several private initiatives which have resulted in the (forced) adoption of Agta children by non-Agta Filipino families. T. Headland and J. Headland (1997:84) report that an orphanage in Cagayan Province forcefully takes Agta children from their families in order to rescue them from what is viewed as a primitive and deplorable way of life. During field work I came across two other cases of adoption.

The Divilacan Boy

On August 3 1968 an Agta boy was born in Disokad, Divilacan. Here, we will call him the Divilacan Boy. The child was only three days old when Manuel Elizalde, the chair of PANAMIN, brought him to Manila. As a 12 year old high school student, the Divilacan Boy started wondering where he came from and who his parents were. After he was told that he was an illegitimate child, the Divilacan Boy left the house of his foster family and

started living on the streets of Manila. He was 17 years old when he first began robbing gasoline stations and *jeepney* passengers. Since 1988, he has been in and out of jail, spending a total of ten years in prison. After his last release, he decided he wanted to finally trace his origins. With only his father's name as guiding point, he took the bus to Cagayan Province and set out to look for him. He soon learned that both his parents had passed away.

The Divilacan Boy told me his story during a visit to Disokad in May 2004. He was then part of a campaigning team on behalf of Divilacan's current mayor, who had offered him a room in his house. The Divilacan Boy's long sought encounter with his relatives was visibly confusing. Despite physical commonalities, he remained an outsider among his own people. He seemed shocked at the poverty his relatives were living in, and said he would build proper houses for them if he would be taken in by the next municipal government. This never happened, for after a conflict with his host, the Divilacan Boy returned to Manila. The Disokad Agta, in turn, were equally struggling with this odd mix of familiarity and strangeness. While they were excited about the return of a lost relative, they did not show much eagerness to get close to him. They later told me however that the Divilacan Boy had been lucky to have been adopted by Elizalde, as accordingly, his parents would not have been able to feed him.

The Palanan Boy

In May 2004 I noticed that a young Agta boy was staying in the house of the mayor of Palanan. We will call him the Palanan Boy. The municipal mayor's sister told me he had been adopted as a baby and had lived with the mayor's family ever since. The reason for his adoption was that the mayor had seen the child lying on the beach just south of Palanan town all by himself. She concluded that the parents were unable to take care of him and took him home. Now, I was told, the Palanan Boy showed disorderly behaviour. He was restless and not interested in studying. According to the mayor's sister this was due to the child's Agta origins. No contact existed between the Palanan Boy and his biological parents as his foster family thought this would negatively influence the child. In fact, they had repeatedly told him how badly his parents had been treating him, and so, whenever they would come to Palanan town, he would turn away in disgust and shame.

A year later, I spoke to the Palanan Boy's biological father on the very beach from which his son was taken about a decade earlier. He told me how he had been out hunting while his wife had left their child on the beach unattended. She was drunk, as she was most of the time, which was the reason the couple eventually separated. Upon hearing what had happened the father went to the mayor's house to take his son home. But the mayor refused to give up the child, saying that if it was not for her, the Palanan Boy would have been taken by the tide. The father was left with no other choice than accepting that he had lost his child.

In brief, government and civil society institutions have aimed to bring about socio-economic change among the Agta from colonial times up to the present. While there is subtle variation in change agents' perceptions of the Agta and in their choice of interventions, there has been much continuity through time and between institutions. This will be shown in the remainder of this chapter, which discusses recent interventions.

CHRISTIANIZATION

When missionary activities directed at the Agta first commenced under Spanish colonial rule they were all part of the Roman Catholic mission. They had the double aim of converting the Agta to Christianity and bringing them under government control. More recent attempts at Christianization are mainly part of a Protestant mission, which operates independently from the state and primarily aims at turning Agta into active and hopeful believers. Here I will briefly discuss the impact of these Catholic and Protestant missionary activities.

Despite its long history, the Catholic mission has so far failed at the Agta's widespread conversion (Schebesta 1957:243-7; Headland 1987c:348, 1986:200; P. Griffin and Headland 1994:73). The few Agta individuals who claim to be active Roman Catholics, seem to have been influenced more by non-Agta acquaintances than by missionary efforts. The only Catholic organization that was operating in the Northern Sierra Madre Natural Park during the time of research was the Diocese of Ilagan, which targets the Agta of Dinapigue. As later paragraphs will show, however, their human rights advocacy and literacy programs are more important than their religious activities.

In contrast to the Catholic mission, more recent Protestant missionary activities do have an impact on part of the protected area's Agta population. This mainly concerns several residential groups from the coastal areas of Palanan and southern Divilacan. Under the influence of the Summer Institute of Linguistics (SIL) they have adopted Born Again Christian faith. Together they form a population of some 400 individuals, or 23% of the total Agta population in the protected area.

The centre of this Protestant community is Dibungco (settlement no. 59 on map 2.2), which is situated just outside the town of Palanan. Here, about 30 Agta households from coastal areas to the north and south aggregate around a SIL operated missionary station, which is led by a Filipino-German couple. Several neighbouring residential groups, notably from Diaguan, Dimapnat, Diagu and Kanaipang (settlements no. 49, 51, 66 and 74 on map 2.2) also actively engage in religious activities. These consist of collective bible study sessions, which are led by Agta converts and held in basic church buildings provided by SIL. Depending on the Agta group, these gatherings are held as often as twice daily or less than once a week. They are lively and informal in nature, revolving around song and conversation. Bible study sessions are attended by men, women, adolescents and children.

The impact of Protestantism on the Agta's belief system varies between individuals. For many converts a belief in God cannot co-exist with a belief in ancestor and nature spirits. The latter is regarded with dismay and is denied to hold any truth or value. Others openly combine the two. They seem to have warmly welcomed God as an additional player in their spiritual world. Praying adds to (without necessarily replacing) offering rituals directed at the various spirit classes, and is said to have a healing effect.

Born Again Christian Agta often claim their lives have radically changed since their conversion. They especially mention the ban on using alcohol as a major improvement. The most active practitioners are keen on converting other Agta groups, and regularly set out to preach the gospel to non-believers. This is certainly not always successful and sometimes even leads to exasperation among the target groups. An Agta

man who lives just around the corner from one of the main religious centres, once expressed his irritation as follows:

‘They told us that we would be saved by Christ if we would join in their beliefs. But who are they to say that? Are they God themselves? They are just convinced by this but we are not. You have to take care of your own life and believing in Christ cannot help you.’

The direct impact of both Catholic and Protestant missionary activities has thus been relatively limited. Within the overwhelmingly Roman Catholic Philippine population, the Agta still stand out as non-believers that largely fall outside government control. While the Protestant mission has had some impact locally, this has certainly not (yet) resulted in the Agta’s overall conversion. Indeed, the binary opposition between Christian and non-Christian Filipinos as institutionalized under Spanish rule persists up to this day. This is clear from the fact that many Agta still carry the family name *Impiel* (from *infiel*, infidel) and refer to non-Agta as *Kristyano*. According to a Belgian priest who preached in the church of San Mariano for many years, however, the word *Kristyano* has come to mean multiple things:

‘During Mass I address those people who abuse the Agta. I tell them: “They [the Agta] call you *Kristyanos*. They call you this not because you believe in Christ, but it means those who always abuse us”’ (John le Couvreur 2003).

Indirectly, and on the longer term, the mission’s impact can certainly be felt. While the Agta’s belief system still largely revolves around pre-colonial foundations such as a strong belief in ancestor and nature spirits, it has undoubtedly been modified by Catholic and Protestant influence. This is perhaps most evident from the fact that Agta cosmology is hidden under layers of an apparent spiritual vacuum. Agta have learned over the years that the outside world does not show much regard for their spiritual beliefs and therefore generally opt to keep them silent.

HEALTH AND EDUCATION

The Agta of the Northern Sierra Madre Natural Park find themselves in a highly disadvantaged position in terms of their health condition and educational background. Although this undesirable situation is acknowledged by government and non-government organizations, interventions to address these problems are very limited. The few attempts at the provisioning of health care and education facilities by government and NGOs are unsystematic and remain without lasting impact. Missionary organizations are more active and more successful in this respect, but their geographical scope is limited. With respect to education, the most significant programs have been provided by the NPA.

Health

Chapter II has shown that mortality among Agta is very high, especially among children. The chance for an Agta child to die before its fifth birthday is seven times higher than it is for the average Filipino child. Infectious disease and malnutrition are the main causes of high mortality and morbidity. The situation would much improve if Agta would have better access to basic health care facilities. There is a particular need for them to be structurally included in vaccination programs. Only 18% of Agta children in the protected area are (partly) vaccinated against childhood diseases such as measles, which claim a high number of preventable deaths and many more cases of sickness. In addition, the extension of maternal healthcare could bring maternal and infant death rates down. Another major improvement in the Agta's health situation would arise if they would have access to safe drinking water.

Government institutions generally fail to take any initiative in this direction. This is evident from the lack of attention for health care interventions for the Agta in municipal development plans and resolutions.¹²⁵ When government officials are confronted with the urgent need of delivering these basic services, their standard defence is that they cannot do so given the Agta's 'nomadic' nature and remote settlement locations. In as far as meaningful health assistance is provided to Agta, this is done on an ad-hoc basis: if sick persons are brought to a municipal mayor or *barangay* captain they can occasionally count on financial or logistical assistance. This more regularly occurs in coastal areas than in the western interior.

Noting the low prioritization of the Agta's health needs by municipal governments, the NGO PLAN made the provisioning of health services to the Agta part of its indigenous peoples program in the Northern Sierra Madre Natural Park. It distributed water pumps and plastic toilet bowls to various Agta settlements and included Agta women in health and nutrition campaigns (PLAN 1998:10, 2001a:26, Annex 1-59-60). In a 2002 progress report the NGO claims that as a result of these project interventions, the delivery of health and sanitation services to the Agta has 'greatly improved' (PLAN 2002b:30). If justified at all, this self-declared success was not to last long. Nowhere in the Northern Sierra Madre Natural Park were the distributed toilet bowls or water pumps in use by Agta at the time of research. The only exception is one Agta settlement in Palanan, which in late 2004 still derived water from a pump installed by PLAN. In all other locations where pumps or toilets had been provided they had either never been used or were never repaired after they got out of order.

The most successful health interventions seem to have been provided by SIL. It offers basic preventive and curative healthcare to Agta children and adults. In case an individual falls seriously ill assistance is often provided to arrange hospital treatment for the patient. Interviews with Agta parents show that the relatively small share of Agta children that are vaccinated mostly obtained these vaccinations through SIL, and much less often through municipal or *barangay* clinics. The effect of SIL's health campaign is however limited to the Agta population living in or near the missionary station of Dibungco in Palanan.

¹²⁵ An exception in this respect concerns a request by the municipality of Dinapigue to its municipal hospital to provide 'free medicines for the health of the Dumagat' (Dinapigue, resolution 25-2003).

A small segment of the Agta population benefits from health services provided by the NPA. Agta conscripts are included in the medical missions that target the communist insurgents in their forest-based camps. Given the harsh circumstances in which the NPA operates, such medical interventions probably are unpredictable and very basic in nature.

Education

Educational participation among the Agta of the Northern Sierra Madre Natural Park is very low. Less than 10% of all Agta children of school going age (6-20 years old) were enrolled in formal education at the time of research (photo 6.1). Of these, only four went to secondary school, while all others were in primary education (table 6.1). On top of these low enrolment rates, drop-out rates are extremely high. Of 1,373 Agta individuals whose educational achievements are known, 201 (15%) were once enrolled in primary education. Of these, only 13 individuals (7%) succeeded in finalizing elementary school. Most drop-outs did not make it beyond grade two, by the time of which literacy and numeracy skills have not yet properly developed. As few as two people (1%) are high school graduates. PANAMIN provided secondary education in Manila and Pangasinan to a small number of individuals.¹²⁶ Participation in tertiary education is highly exceptional. A small number of Agta youth from Palanan follow college education through SIL in Bagabag, in the province of Nueva Vizcaya. Also, two women from Maconacon and San Pablo were previously enrolled in college education, but dropped out before graduation.

Table 6.1 Number of Agta children enrolled in primary and secondary education 2003-2005

	No. of children age 6-20	No. and % of children enrolled in primary education		No. and % of children enrolled in secondary education	
San Pablo	8	0	0	0	0
Tumauini	8	0	0	0	0
Ilagan	14	0	0	0	0
San Mariano	74	1	1.4	0	0
Dinapigue	17	3	17.6	0	0
Palanan	273	33	12.1	3	1.1
Divilacan	191	16	8.4	0	0
Maconacon	47	5	10.6	1	2.1
Total	632	58	9.2	4	0.6

Local government officials, especially at the *barangay* level, are well aware of the disadvantages the Agta's low educational background brings them in daily life. They often stress how their illiteracy makes them vulnerable to exploitation in trading activities. Yet, government initiatives to tackle the problem are very limited. Hardly

¹²⁶ When one of these, Estaniel Prado, now a man in his forties, decided to return home after several years his family asked him why he had not stayed, just like his sister. He jokingly answered: 'Because I have curly hair, I make curly decisions.'

any reference to the issue can be found in earlier mentioned municipal development plans and resolutions.¹²⁷ As is the case for the Agta's poor access to medical facilities, local government officials usually blame the Agta's mobility for their low educational enrolment. However, even if households reside in one area for a longer period of time, the nearest schools are usually too far from Agta settlements to travel back and forth daily. This is especially the case in the western mountain interior, where enrolment rates are indeed lowest. While many non-Agta children also face this problem, they tend to solve it by living in with relatives in village centres, usually in exchange for helping out with domestic tasks. To Agta children this option is less frequently available, and certainly less successful. They often experience the village environment as intimidating. Not only is it very different from their home situation, there sadly are many cases of maltreatment and discrimination by class-mates, host-families and teachers. Knowing what difficulties their children can expect outside their own social environment, Agta parents often hesitate to send them to school (box 6.4).

Moreover, many parents consider it emotionally and economically unacceptable to miss their children for extensive periods of time. Agta life is short and most parents have lost one or several children; so why send a healthy child off to a remote and uncomfortable place? In addition, financing a child's education is always problematic. Although tuition is free, Agta parents are unable to pay for books, school supplies, a uniform, meals and travel. In addition, the opportunity cost of sending an economically active child to school is high as boys and girls begin making structural contributions to household tasks and income generating activities from about age six onwards. Moving with their children is only an option if parents know that they can earn a living near the school's location. Such possibilities are generally limited to seasonal land labour. Also, the absence of kin relations make life away from home a sacrifice which only few are willing to make.

Sometimes parents find creative solutions. In 2005 a number of Agta households that previously resided along Abuan River in Ilagan moved downstream to a village centre, where their children went to primary school. Worth noting is that the school chose to teach all Agta pupils together in one classroom, apart from non-Agta students. Their mothers work as land labourers, while the fathers still regularly move upstream to engage in logging activities. Also, a group of children from Didadungan (Palanan) started going to school in 2006. The parents built a basic dwelling for the children to stay in during school days, and took turns in staying with the children and cooking for them.¹²⁸

Responding to the Agta's low enrolment in formal education, several informal literacy programs targeting Agta communities or individuals have been implemented by various non-government actors. Again, the mission-based activities conducted by SIL and the Diocese of Ilagan have been relatively intensive and effective, but like mission-based health interventions, the number of people reached is limited. In contrast, PLAN's literacy classes took place in Agta settlements across the protected area, but as these generally only lasted a week they have not resulted in any long term

¹²⁷ The only exception here is the municipality of Palanan, which in its latest development plan notes that 'Most parents, especially the native ones, are still not inclined to giving priority to education of their children' (LGU Palanan 2000:18). No further reference to the issue is however made.

¹²⁸ Hans Goslinga, personal communication 2006.

learning effect (see also PLAN 2001b:10). Perhaps most successful, although also limited in scope, has been informal education provided by the NPA. Many literate Agta adults gained their skills during previous involvement with the communist insurgents. The skills these individuals gained are often impressive and allow them to read and write basic texts.

Box 6.4 What Agta students need to face up to

A school principal from a rural *barangay* in San Mariano once shared her frustration about the low enrolment rate of Agta pupils. She has heard that the Aeta from Zambales go to school, and wonders why the situation is different in Isabela. This is how she perceives the situation:

‘[...] the *Aetas* here, I think they are of the lazy type. [...] Every time the Agtas come here to buy supplies I tell them that they should come to school, but they tell me they don’t like that because they don’t have food here. [...] Because they are used to getting their food from the forest, they don’t like to live here, they don’t like to mingle. [...] they are the lazy type [...]. They don’t have food here because they do not plant, they just get wild food from the forest, they don’t work hard, they only work a few hours and then they are already contented with what they have. That is why they do not improve, they do not strive. That is why their children die, because they are not educated. But it is high time that they learn to cultivate, it really is high time. [...] I have often said to the Agta that they should come down [from the mountains] and we will make a small house for the children here. I don’t want them to stay in my house because they have these white spots [a fungal infection called ring worm] covering their bodies and it is very contagious.’

A rattan buyer from the same *barangay* once proudly told us how she had invited two teenage Agta girls to stay in her house in the village centre. She had promised to send them to school if the girls would do domestic work in return. To the woman’s disappointment, however, both girls left after a month. The eldest girl’s father, a crippled man in his fifties, told us he had sent a message to his daughter in which he asked her to come home. He said he and his wife really wanted their daughter to go to school, but they missed her terribly. Moreover, they needed her for gathering rattan. The younger girl’s mother, an elderly widow, had sent her daughter a similar message. In fact, their parents’ requests came as a relief to both girls. According to the girl: ‘They [the host family] did not yet send me to school. I was not allowed to go out of the house or to join the family if they went somewhere. They let me take care of the small children, wash the dishes, clean the house, feed the pigs.’ The eldest girl also experienced her stay with her host-family as unpleasant. Her host kept on mentioning to the two girls that they were dirty; but according to her: ‘She is just as dirty as we are. She is just the same as us.’

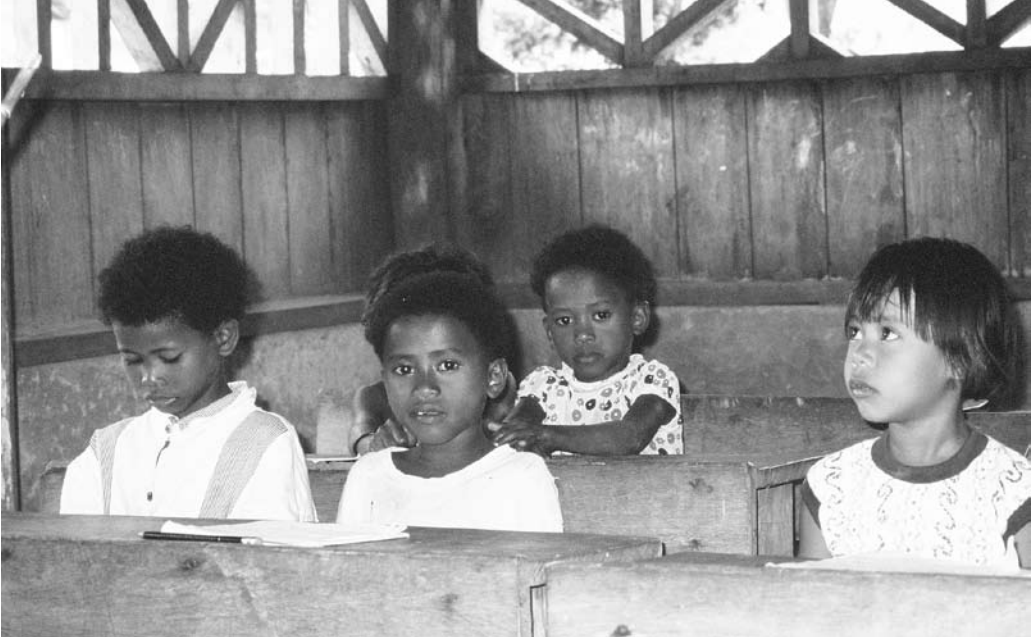


Photo 6.1 Agta children enrolled in elementary school, Sta. Marina, Maconacon, March 2004

LIVELIHOOD AND SEDENTARIZATION

Government and non-government organizations have historically wished for hunting and gathering communities to change their mobile and thereby intangible existence for a settled, agricultural life. This was deemed to be in the interest of the target communities, and would simultaneously allow for government control to be extended in hitherto uncontrolled areas (see Persoon 1989). By focusing on sedentarization and the adoption of agriculture, colonial interventions directed at the Agta thus were a campaign against a hunting and gathering lifestyle (Rai 1982:7). The interventions were to bring about a transformation of the Agta's socio-economic system into a completely different state, rather than sustenance of the existing system (Holling 1973; Walker et al. 2004:2-3). Despite increased official attention for the Agta's right to self-determination, this classic approach definitely does not belong to the past. As we will see, the promotion of sedentary agriculture is as much at the heart of post-colonial and contemporary interventions, as it was of Spanish attempts at bringing the Agta down from the mountains and the American policies of the Bureau of Non-Christian Tribes.

Government

PANAMIN's earlier mentioned official policy of 'protecting man's right to choose' did not work out that way in the Northern Sierra Madre. In the early 1970s the agency was involved in the resettlement of several river-dwelling Agta groups onto two military reserves along Palanan river. The purpose was to prevent the Agta from joining the

NPA. Informants from Palanan remember that the situation was dire as large numbers of resettled families lived together under unhygienic conditions.

PANAMIN's interventions further included the establishment of a farming reserve along Dilaknadinum River, which started in 1968 (see also Bennagen 1976:90-100; Estioko-Griffin and P. Griffin 1981a:68). Dilaknadinum is situated upriver from Diaguan (settlement no. 49 on map 2.2). The resettlement project's main objectives were 'to modify and to eventually eliminate the migratory life ways of the Agta and to resettle them on reserved lands', and 'to improve the economic and social well-being of the Agta through the introduction of modern agricultural and fishing techniques'. All this was envisioned 'to help the Agta, while still respecting their social and cultural differences, to become productive and integrated citizens, thus contributing to national growth and progress' (PANAMIN 1968:103, cited in Bennagen 1976:91-2). Bennagen (1976:93-6) describes how the Agta reacted to PANAMIN's resettlement plans with mixed feelings. They welcomed the material opportunities the agency offered, but were reluctant to move to the selected site as they considered the farm land they were already cultivating much more suitable than the steep terrain at Dilaknadinum. During the current study, which took place almost 40 years after PANAMIN's entry in Palanan, no Agta were permanently settling at Dilaknadinum. Although several households did still cultivate land there, it was just one among several of their settlement sites.

A similar discrepancy between the theory and practice of government policy arises in present day NCIP operations. Despite the IPRA's focus on indigenous peoples' right to self-determine their chosen path of development (NCIP 1997: sections 13, 17), in practice the NCIP clearly prefers the Agta to adopt sedentary agriculture and a matching lifestyle. This shows, for instance, from an attempt by the NCIP provincial office to resettle several Agta households from San Mariano in 2004. The chosen site was a grassland area with no water source and no nearby river. Much to the NCIP's frustration, the targeted households stayed in the resettlement area for only a number of weeks, after which they returned to their original settlements. Also, in her speech to an Agta audience from the Northern Sierra Madre Natural Park in 2005, NCIP commissioner Espino recognized the Agta's tendency to 'move around', but urged them to settle down in a *barangay* where government can easily reach them to provide training and support for their agricultural activities (Minter et al. 2005:70-1).

Municipal and *barangay* governments have a similar preference for the Agta to settle down. Most initiatives to bring about such sedentarization are however relatively passive and unsystematic. *Barangay* officials occasionally approach specific Agta households with whom they maintain trade relations and stimulate them to start a permanent settlement together with the other members of the residential group, preferably close to the village centre. A small number of coastal *barangays* have allotted specific 'farming reserves' for the Agta. As these never cover more than a few hectares, and are usually located away from the Agta's original settlement areas, they are in practice rarely tilled by the targeted Agta. In some cases, Agta are given additional incentives to take up farming by promising them that they will be supplied with what are locally called 'farm implements' (farm tools and inputs). As local

governments never provide these from their own budget, however, they direct their requests for such ‘implements’ to other agencies.¹²⁹ Also, promises at the construction of a school or rural health centre are usually included in the offer. In practice, the Agta’s settlement patterns are hardly influenced by such promises. While they react willingly at first sight, in many cases the targeted Agta are sceptical of the benefits that sedentarization would bring them, or even doubt the local governments’ sincerity.

In addition to facilitation of agricultural development and easier delivery of basic services, governments’ attempts at resettlement also partly stem from concerns over the Agta’s housing conditions. This shows from the following examples from Divilacan. In its latest management plan the municipality mentions that ‘especially the Dumagats [...] [are] suffering from housing problems. [...] Unacceptable housing units exist [...] made of mixed and light materials’ (LGU Divilacan 2007:7). In line with this observation, during an interview in 2005 the municipal mayor, Mr. Ben Bulan, explained his plans to provide several Dimasalansan Agta households with a concrete and galvanized iron shelter, since:

‘[...] their situation is very pathetic. The houses they live in are not fit for them, especially during this *amihan* [rainy] season.’

During a visit to these particular Agta households in early 2007, the planned shelter had indeed been built, but the Agta continued to live in their rattan and bamboo dwellings a few hundred meters away. In 2002 the same fate befell a resettlement and housing project in *barangay* Dicaroyan (Divilacan). The original plan was to provide the local Agta population with farmland. However, the proposed area was already claimed by a non-Agta farmer. Thus the eight households were resettled to a small lot in the village centre where a basic house was built for each of them. According to a *barangay* councillor, Mrs. Gamongan, in the absence of available farmland the purpose of the resettlement project became to:

‘[...] teach them [the Agta] how to live as *Kristyanos*: how to keep their houses and environment clean.’

The families returned to their river-site dwellings and adjacent swiddens within two months. In retrospect the councillor concluded that:

‘[...] the Agta don’t like to stay in the *barrio* [village], they prefer to stay along the river. [...] Their future will only be better if they take the advice of some educated people who can help them improve their lives. But so far they have not taken this advice.’

¹²⁹ For instance, in 1994 the municipality of Divilacan requested the provincial office of the ONCC for ‘the allocation of funds to provide livelihood assistance [in the form of] swine dispersal to the members of the cultural tribes’ (LGU Divilacan, resolution no. 019-1994). Likewise, in 2000, the municipality of Dinapigue asked PLAN ‘to kindly donate ten (10) female carabaos, ten (10) plows and ten (10) harrows to the agtas/dumagats in this municipality’ (LGU Dinapigue, resolution no. 052-2000).

Civil society

In comparison to government attempts to sedentarize the Agta, similar efforts by the Protestant mission have been relatively successful. In several locations along the Palanan coast SIL purchased farmland for the Agta. In addition, basic but permanent housing and sanitary facilities were provided. This resulted in the formation of several relatively permanent settlements, the largest of which is Dibungco, where about 30 Agta households reside. Although these households still regularly move to neighbouring settlements, they show a clear orientation towards the larger missionary settlements. Yet, earlier mentioned effective extension of education and medical services in the missionary stations, as well as the incidental employment opportunities they offer, are probably much more significant in explaining this relative sedentarization than the available farm land and housing facilities. The history of another SIL station at *barangay* Reina Mercedes (Maconacon) is illustrative in this respect. A large number of Agta households used to aggregate there until the early 1990s, but dispersed again in northward and southward direction after the missionaries' departure.

The most extensive livelihood support program was implemented by PLAN. It was already mentioned that PLAN's overall goal was the conservation of the Northern Sierra Madre Natural Park and therefore all of its livelihood interventions are to be seen in that context. PLAN's 1997 Annual Budget Plan states that the Agta '[...] should be actively involved in non-forest-based livelihood activities in order to significantly reduce their dependence on forest resources' (PLAN 1996: no page). Again, the chosen alternative livelihood program focused mainly on agricultural development, albeit in a much more proactive and comprehensive way than similar programs implemented by government and missionary organizations.

PLAN's agricultural program consisted of a combination of distribution of farm tools and inputs, training, and community organizing. Between June 1996 and October 2002 the project provided a total of 84 sets of farm tools and inputs to Agta communities in Palanan, Maconacon, Divilacan, San Mariano and Dinapigue. These consisted of *carabaos* (usually a male and a female), a plough, harrow and shovel, and several machetes, sharpening stones, and planting materials (PLAN 2002a:69-70). In San Mariano, Agta also received pull-carts to facilitate transportation of their agricultural produce to the public market, and in Maconacon two residential groups were given PVC pipes for the construction of an irrigation system (PLAN 2001a:18, 2002b:29).

Trainings and exchange visits were offered in which 50 to 60 Agta participated at a time. These were held on demo-farms in the various coastal municipalities and at farmers' cooperatives elsewhere in North Luzon. Rice and corn production, *carabao* care, organic fertilizer production and agro-forestry techniques were the main topics addressed. The aim was to 'provide additional knowledge and skill as supplement to [...] traditional knowledge and practices' (PLAN 1999:31, 2000:36, 2001a: annex 7-I). To ensure that the acquired skills were put into practice, so-called Community Development Facilitators (CDF) were appointed to provide technical on-farm support. In San Mariano, where the project heavily promoted cash crop production, the CDF also assisted the Agta in marketing their produce (PLAN 2001a:18, 2001b:9). Like

government, PLAN promoted sedentarization as part of its agricultural program. The main argument put forward in this case was that the Agta would only be able to effectively protect their farmland from encroachment by non-Agta farmers if they were permanently based near their fields. A less explicitly expressed but nonetheless important argument was that sedentarization would serve forest conservation. As Mr. Aboy Almonte, a man in his forties from the Disulap watershed in San Mariano recalls:

‘They [PLAN] told us to stay in one place and not migrate to other places like birds.’

Although the emphasis of PLAN’s livelihood support program was on agricultural development, it also included two other components. First, it was recognized that the coast-dwelling Agta were to benefit more from fisheries support than from agricultural programs. Although some of the coastal groups did receive sets of ‘farm implements’, they were also provided with fishing equipment: 14 sets of outrigger boats (part of which were motorized), fishing nets, lines, hooks and lamps for lobster collection were given out to Agta groups in Maconacon, Palanan and Divilacan (PLAN 2002a:70). Second, some effort has been put in improving the Agta’s returns from commercial rattan collection, by assisting them in applications for rattan collection permits.

PLAN’s livelihood support program in retrospect

What has been the impact of this comprehensive livelihood support program? According to PLAN (2001a:25) itself ‘Presently, the Agtas are very proud on their developing ancestral lands and their crop harvests [...]. Their once-idle lands are now slowly developing into productive lands, contributing much to their food security. Most of the provided female *carabaos* gave birth already, increasing the number of their working animal force and ensuring the sustainability of the *carabao* assistance.’ The NGO further concludes that ‘The farming and fishing assistance extended [...] are culturally adopted and are operational and functional. Involvement in illegal activities is now minimized for they are now preoccupied in their [alternative] livelihood activities’ (PLAN 2002b:28).

PLAN withdrew from the project sites at the end of 2002, just when field work for this study started. There are many clues to suggest that PLAN’s positive self-evaluation needs some qualification. It leaves no doubt that the provided trainings have added to the participating Agta’s farming skills. Also, the regular presence of community organizers within Agta residential groups has in most cases benefited and empowered them. Many of these are remembered fondly by their Agta hosts and were trusted representatives during the project’s duration. However, the overall aim of bringing about a shift from forest-based to non-forest-based livelihoods clearly was not met. As previous chapters have shown, wildlife, timber, and non-timber-forest products still form a major source of Agta livelihood.

The investment in agricultural development appears to have only had substantial impact in a small number of project sites. These were the locations where Agta’s involvement in farming predated the arrival of PLAN. As Chapter V has demonstrated, such involvement was present where Agta had already gained extensive farming experience by working as tenants or seasonal labourers on non-Agta farms and where they faced relatively favourable circumstances in terms of land availability. Here,

PLAN's agricultural assistance has had a consolidating and stimulating effect, while in all other project sites its impact has been very limited and short-lived. But even for the most successful sites, there is no measurable evidence that an increase in food security was realized, as PLAN claims. Nowhere has agricultural production increased to such an extent that it can sustain Agta household needs.

Moreover, the impact of PLAN's emphasis on the importance of sedentarization has been insignificant. All Agta households met during this study regularly shifted residence between settlement sites, even if they were relatively structurally engaged in agriculture. As mentioned, PLAN's main argument for promoting a sedentary lifestyle was that it would enable the Agta to protect their land from encroachment. In some areas PLAN has indeed effectively mediated in conflicts over land, most notably in Maconacon where Tingguian migrants had illegitimately taken over land of the Blos residential group at Samientu (settlement no. 29 on map 2.2). In coordination with the *barangay* captain the conflict was resolved in favour of the Agta. However, not always was PLAN's approach constructive as it often depicted non-Agta farmers as unscrupulous land grabbers who should be kept at a distance. The project staff rightly observed that Agta and non-Agta regularly come into conflict over land, but overlooked the fact that relations between them are not always strained. Indeed, Agta often appreciate and benefit from the presence of non-Agta. Such was the case with an Agta group from San Mariano who had invited an Ifugao family to join them in their residential shift from Kameronasitan to Camalacacan (settlements no. 11 and no. 10 on map 2.2). PLAN opposed the Ifugao's presence in Camalacacan for two reasons. One was the risk of them clearing protected forest for agriculture. The other was the risk of the Ifugao eventually taking over the Agta's land. As Camalacacan resident Mr. Rudy Almonte explained, his residential group did not agree with this risk analysis:

'PLAN wanted to chase away the Ifugao, but we refused because we see no problem. We want them to stay because they can teach us how to work on the land when [...] [the Community Development Facilitator] is not around.'

Among the Disabungan residential group PLAN has addressed the need for individual tenurial security by assisting in the awarding of a number of Socialized Integrated Forest Management Agreement (SIFMA) contracts to Agta households. However, as we have seen in Chapter V, these are of limited relevance, for not only are the Agta contract holders unaware of their rights to these SIFMA lots, the allotted land is also situated outside the areas that they actually cultivate.

The effectiveness of the material support provided has also been meagre. Many *carabaos* died, fell ill, were used for illegal logging or were sold to farmers. In as far as the *carabaos* were successfully kept they often became a source of conflict within and between residential groups. The egalitarian nature of Agta society had led project personnel to trust all individuals would naturally share in the use of the farm animals. In reality only certain people claimed ownership of the animals, while others were excluded from their use. This ownership problem likewise arose with respect to the other farm tools as well as the fishing equipment that was distributed among coastal Agta groups. Nearly all of these were defect or sold within a short period of time. Despite concern raised regarding the effectiveness of the distribution of farm tools in a mid-term project evaluation (van Bodegom et al. 1999:36-7), the material support

program continued until 2002. Although PLAN (2002a:69-70) noted that ‘some of the *carabaos* died from sickness’ and that ‘most [...] fishing implements were already worn out’, it was never properly evaluated why this happened and how better alternatives could have been found.

In addition, both the farming and fishing support programs raise serious sustainability questions. As mentioned above, PLAN’s overall aim was to reduce the Agta’s involvement in forest-based livelihoods by providing them with sustainable livelihood alternatives. How compatible were the promotion of agriculture and the intensification of previously generally extensive marine fishing practices with this aim? With respect to agricultural intensification, the Agta have been stimulated to intensify and expand their farming activities. The fact that the dispersed *carabaos* have in many cases facilitated illegal logging more than agricultural development has already been mentioned. Moreover, especially on the western side of the mountain range, where the Agta settle in extremely steep terrain, possibilities for permanent agriculture are very limited. Thus, an increased focus on agriculture would imply a focus on shifting cultivation, and therefore unavoidably result in forest clearance. Given that these particular Agta groups all reside close to or within the park’s strict protection zone, such an approach is hard to justify in the context of a conservation project.

With respect to the intensification of fisheries, several observations can be made. Although the distribution of fishing equipment among coast-dwelling Agta groups is arguably compatible with the promotion of non-forest-based livelihoods, it is inconsistent with general sustainability goals. Chapter III has suggested that, with the exception of intensive lobster exploitation, the Agta’s contemporary fishing practices have a relatively low environmental impact considering their capital extensive and small scale character. These are favourable circumstances within a protected area. It is therefore surprising that a conservation project chooses to promote the use of nets, hooks, boats and lamps to intensify marine resource extraction. Ironically, the Agta themselves have shown hardly any interest in these materials. The only reported ‘success’ in this regard is that certain coast-dwelling Agta groups were using the motorized outrigger boats for lobster capture (PLAN 2002b:29). Again, project strategies remained unchanged despite the alarm that was raised over the potentially negative environmental effects of this project component as early as 1999 (van Bodegom et al. 1999:36-7; see also Magaña 2005:384).

Finally, and most importantly, it should be questioned how justifiable and consistent PLAN’s overall goal of bringing about a shift from forest to non-forest based livelihoods was in the first place. There is little reason to answer this question positively. To begin with, the approach contradicts with another of PLAN’s main goals: the preservation of the Agta’s distinct culture, of which forest-based livelihoods form a fundamental part. Moreover, as the next paragraph will show, it is at odds with the IPRA, the NIPAS law, the NSMNP Act and the park management plan, all of which stipulate that the establishment of a protected area should not compromise the Agta’s ability to continue their hunting and fishing livelihoods. Thus, PLAN’s livelihood program was in effect a repetition of the classic approach of sedentarization and agricultural adoption, rather than the innovative program for uplifting indigenous peoples’ standard of living that it intended to be.

After PLAN withdrew from the NSMNP-CP in late 2002, WWF took over until the project’s early termination in 2004. With respect to livelihood support programs for

the Agta, WWF's activities could have provided an alternative to the classic approach followed by PLAN. However, they remained limited to an inventory of options. A small enterprises specialist was looking into the possibility of assisting the Agta with the sustainable exploitation and marketing of rattan, swiftlet nests and agricultural products, but these activities never took off.

In summary, contemporary interventions with respect to the Agta's settlement and livelihood behaviour, whether initiated by government or non-government organizations, have much in common with the classic approach followed by the colonial and post-colonial state. That is, despite talk of self-determination, development planners still wish to replace a mobile hunting and gathering way of life by a sedentary, agricultural existence. Because this approach represents a radical breach with the Agta's cultural past, it currently is as unsuccessful as it always has been. From a resilience perspective, the above discussion could be taken to indicate that the Agta's socio-cultural system displays considerable resistance (Walker et al. 2004: 2-3) against fundamental change of its core components such as mobility and a hunter-gatherer mode of production.

SUSTAINABLE RESOURCE USE

Many of the above described livelihood interventions, especially those extended by NGOs, were implemented as part of programs intended at conservation in general, and protected area management in particular. The establishment of the Northern Sierra Madre Natural Park is not an intervention specifically directed at the Agta. Yet, it is interesting because of its potential impact on the Agta. Here, I will concentrate on two main elements of the park management plan. These are first the Agta's settlement and resource use rights within the park; and second their position within the Protected Area Management Board. As previous chapters have repeatedly demonstrated, the park management plan is poorly implemented as a result of lack of law enforcement. It must therefore be noted at the outset that a discussion of its implications for the Agta is bound to be mainly theoretical in nature.

The Agta's rights and responsibilities in the Northern Sierra Madre Natural Park

The NIPAS law (1992) stipulates that people who have inhabited or cultivated land in a protected area for at least five years prior to its establishment, cannot be relocated against their will. In line with this law, the NSMNP Act (2001) and the park management plan (2001) provide for a zoning system with respect to settlement and resource use within the Northern Sierra Madre Natural Park. Areas that were known to be permanently inhabited by farming communities were declared sustainable use zones and multiple use zones (map 1.3). Both these zones are open to most forms of resource extraction by all park residents. In contrast, the strict protection zone, which covers over 240,000 ha (67% of the total protected area), is only open for resource use and settlement by the Agta (see also Persoon and van Weerd 2006:93).

The Agta are thus granted more extensive resource use and settlement rights within the park than non-Agta. Two arguments underlie this policy. The first is the Agta's indigenous status. Under the IPRA (section 58) no indigenous community may ever be displaced or relocated from a protected area against their will. When the park's management plan was drafted in 2001, a population distribution map was prepared which included around 60 Agta settlements with an estimated population of some 1,800 individuals (DENR 2001a:31, 149). This map was later improved based on an extensive ethnographic survey conducted by PLAN's development anthropologist (see Magaña 2000), but excludes the Agta populations of the municipalities of San Pablo, Tumauni and Ilagan. These were not targeted by PLAN's indigenous peoples program, despite the fact that they are situated either along or within the park's strict protection zone.

The second reason is the Agta's reputation as environmental stewards, which is evident from the following opening statement in PLAN's ethnographic report: 'Like other indigenous peoples, the Agta are considered as "ecosystem people" since they possess a culture that makes them part of nature living in harmonious interrelationships with all living things in the ecosystem. Thus, [...] one of the major steps to the sustainable management of the natural resources is by involving the indigenous peoples in resource protection' (Magaña 2000:1).

The Agta's special position within the park is limited in two important ways. First, the park management plan prescribes that within the strict protection zone the Agta are only allowed to engage in traditional resource utilization (DENR 2001a:73), but without providing an unambiguous definition of 'traditional'.¹³⁰ According to the NSMNP Act (DENR 2001b: section 31) it refers to resource extraction in which 'no power machinery' is used and which is consistent with 'historically customary techniques of production'. While the former logically implies a prohibition of the use of chainsaws, the latter condition is much less clearly understood.

A further limitation to the Agta's special position within the park concerns the harvesting of endangered species, which is prohibited by national and international law. The discussion mainly centres on two species of sea turtle, namely the green turtle (*Chelonia mydas*) and the logger head turtle (*Caretta caretta*) (van Lavieren 1999:14, 17; IUCN 2007). The Agta do not sympathize with prohibitions on turtle exploitation. They claim that, in contrast to non-Agta, who commercially catch turtles year-round, they exclusively hunt turtles for subsistence purposes during the lean rainy months (see also Magaña 2003:255-6).

While these concerns may become of importance in a situation where law enforcement improves, they are only of marginal relevance under the current circumstances. Cases in which people are apprehended for illegal activities are extremely rare and the park's impact on the Agta's (and non-Agta's) daily lives is therefore insignificant. This is clearest from the fact that, despite NGOs' information campaigns, Agta are poorly aware of the park's existence, its zoning system and the rules and regulations (table 6.2).

¹³⁰ Note that under the NSMNP Act (DENR 2001b: section 3jj), the Agta's resource rights in the strict protection zone are even much more narrowly defined as resource extraction for 'ceremonial and religious use' only.

Especially women are badly informed. In the course of the study period, 53 Agta adults throughout the protected area were asked what they knew about the Northern Sierra Madre Natural Park. The majority of these (55%) did not recall they had ever been informed on the park's existence, not even after they were provided with basic information to refresh their memories. Many female respondents indicated that they knew nothing about these issues since only men attended trainings and meetings. Another 13% of the respondents were only vaguely aware of the park's existence. They knew they were living inside or close to it, but could not explain what its protected status implied. Nearly one-third of all respondents had more detailed knowledge of the park. They not only knew of its existence and protected status, but could also specify the most important prohibitions. Logging, electro-fishing and the hunting of pregnant pigs and deer were the most frequently cited illegal activities. However, no respondents, not even the best informed ones, were able to specify which hunting methods were prohibited or to explain the park's zoning system.

Table 6.2 Awareness on the Northern Sierra Madre Natural Park (NSMNP)

	Male	Female	Total
Not aware	13	16	29 (55%)
Aware of NSMNP's existence, but not of implications	7	0	7 (13%)
Aware of NSMNP's existence and main prohibitions	14	3	17 (32%)
Aware of NSMNP's existence, detailed prohibitions and zoning system	0	0	0 (0%)
Total	34	19	53 (100%)

The Agta's position in the Protected Area Management Board

The Agta's limited awareness of the Northern Sierra Madre Natural Park should not be misunderstood for an absence of interest in sustainable resource use. As previous chapters have demonstrated, Agta throughout the protected area voice concern that over-exploitation of wildlife and timber is negatively affecting their livelihood options and food security. While in theory the park's management board is the appropriate body to address these matters to, reality is different. This will be illustrated here.

In line with the NIPAS law, the Northern Sierra Madre Natural Park is governed by a Protected Area Management Board (PAMB). The PAMB General Assembly, which is chaired by the Regional Director of the DENR, meets twice a year¹³¹ in rotating locations in the park. Twelve Agta representatives take seat in this board, along with representatives of the DENR, the provincial government, the municipal governments of the nine towns covered by the park, NGOs and several other stakeholder groups.

The Agta members were selected by the DENR on the basis of their 'leadership trait, commitment to serve, and familiarization with NSMNP and PAMB matters' (PLAN 2001a:24-5). This selection shows a gender and geographical bias. All Agta

¹³¹ The PAMB Executive Committee, in which one Agta representative holds a seat, also meets twice-yearly.

PAMB representatives are men. Moreover, they only represent populations from Palanan, Divilacan, Maconacon, San Mariano and Dinapigue, while for unclear reasons no representatives were selected from San Pablo, Tumauni and Ilagan. Within the selected municipalities PAMB representatives are unevenly distributed. For instance, all three representatives coming from San Mariano are members of only two residential groups that are situated closely together.

In addition to these representation problems, there are serious participation problems. Making up nearly one-third of all board members, the Agta representatives theoretically form a significant party within the PAMB. In reality, however, their participation and leverage remain weak. Only few Agta PAMB members ever attend PAMB meetings, and these are usually the same individuals.¹³² Moreover, in as far as they are present, Agta PAMB members have no influence on the formulation of the agenda and their participation in decision making is marginal. The reasons are multiple. First, the Agta's physical presence at PAMB meetings is hampered by the fact that announcements for meetings and notifications on changes in the schedule often do not reach them on time, if at all. Second, no financial mechanism is in place to support the Agta's travel to and from meetings. This is despite the fact that the NSMNP Act (DENR 2001b: section 11) states that PAMB members are entitled to compensation for travelling and subsistence expenses and should receive a honorarium and insurance coverage whenever they attend PAMB meetings. Third, the Agta's socio-economic disadvantages restrain their active participation. In spite of the agreement that Tagalog or Ilocano are to be spoken during meetings, English, which is not understood by most Agta, is often used. In addition, the Agta's illiteracy excludes them from understanding the minutes, the agenda and any other written documents that provide a background to the meeting's process and contents. Finally, being unfamiliar with the aim, setting and structure of meetings like these, Agta PAMB members are unable to use them to their advantage.

Taken together, the Agta face a situation in which they are not given a realistic chance to actively participate in park management. And yet, they are forced into a role of substitute park guards. Both government and non-government organizations regularly turn to the Agta for help in environmental protection. As box 6.5¹³³ shows, Agta are told that, given their 'closeness to nature', they are the ultimate environmental stewards. As mentioned, earlier discussed livelihood support programs were provided in exchange for the Agta's loyalty in environmental protection. In fact, the motorized outrigger boats distributed to the Agta by PLAN and other NGOs were partly meant for monitoring the coast. While Agta throughout the park tend to take their role of

¹³² There are only three Agta PAMB members who attend meetings on a relatively regular basis and whose understanding of the meeting process is reasonably good. These are Agta men from the coastal towns of Maconacon, Divilacan and Palanan. One of them is probably the best educated Agta from Northeast Luzon, as he studied at the SIL high school in Bagabag and worked for the missionary organization as translator. Another was educated during his involvement with the NPA. The third is an uneducated, but exceptionally vocal and well-respected elderly man. Nonetheless, as table 6.2 shows, even these relatively well-informed individuals do not have complete knowledge of park rules.

¹³³ Box 6.5 shows excerpts of government officials' speeches directed at the Agta of the Northern Sierra Madre Natural Park. These speeches came as a response to a petition signed by 111 adult Agta men and women calling, among other things, for stricter environmental law enforcement. The petition was one of the outputs of the workshop *Ako ay Agta, Ako ay Pilipino (I am Agta, I am Filipino)*, held in Cabagan in August 2005. See the Appendix and Minter et al. 2005 for further details.

environmental guards rather seriously, it leads to much frustration. Whenever they address people on their environmentally destructive behaviour they are usually met with mockery, or even violent reactions. Standard replies include ‘Is it you who planted the trees?’, ‘Is it you who feeds the fish?’, ‘We will stop cutting trees if you give us money’, or ‘All things created by God can be used by people’.

Box 6.5 Excerpts from government speeches directed at the Agta of the Northern Sierra Madre Natural Park (Minter et al. 2005:48-9, 72-3, 81).

‘The Agta are at the forefront of the fight against the destruction of the Sierra Madre. Your ancestral land is one of the two places in the Philippines with full natural resources that are useful not only to the Filipinos but to the whole world. You will not destroy your mountain home because any threat to the mountain is a threat to your home.’ (Regional Director of the Department of Social Welfare and Development)

‘The Agta people are the guards of the mountain range because they live in the area. They are the major stakeholders of the Northern Sierra Madre Natural Park. [...] The Agta people are active protectors of the forest. You should be serious in this undertaking because whatever happens in the mountain range will also affect the lowlands. You should not just be followers; you should join hands with government agencies in protecting the natural resources [...]. Although there are DENR forest guards, their area of coverage is quite large so they cannot do the job alone. They need assistance from the Agta communities.’ (Regional Director Region 02 of the Department of Environment and Natural Resources)

‘The Agta live in harmony with nature: your role is to guard and protect nature.’ (Protected Area Superintendant of the Northern Sierra Madre Natural Park, Department of Environment and Natural Resources)

‘[...] it is not only the Agta people who need outside help but the people living in the lowlands also need the Agta’s help as protectors of the Northern Sierra Madre Natural Park.’ (Provincial Governor of Isabela)

‘I hope that you [...] now understand better why you need to continue protecting the watershed of the Sierra Madre so that farmers in the lowlands can continue their farming activities. With the Agta people protecting the forests in the Sierra Madre, the people in the lowlands are able to grow crops.’ (Municipal Mayor of Cabagan)

A number of things go wrong here. Although the PAMB is authorized to deputize individuals for enforcement of rules and regulations within the protected area through the Protected Area Superintendent (DENR 2001b: section 10f), Agta are currently pushed to stand up against illegal activities without such formal deputisation.¹³⁴ This

¹³⁴ An exception is a deputization letter given out by the Office of the PASU in March 2006 to an Agta PAMB member from Palanan.

means that while they confront trespassers, they are unable to prove that they are authorized to do so. On top of this, while the IPRA states that indigenous communities ‘shall be given the responsibility to maintain, develop, protect and conserve [protected areas]’, it also prescribes that this should be done ‘with the full and effective assistance of government agencies’ (NCIP 1997: section 58). The Agta’s greatest frustration arises from the absence of such assistance. Examples abound in which Agta’s reports to *barangay* captains, municipal mayors, the local DENR, or police are never followed up. To name just one, when an Agta PAMB member informed the local DENR of Palanan on the presence of a boat loading illegally cut timber, the DENR official replied he could not do anything about the problem as his wife was campaigning to become municipal councillor in the upcoming elections.

This response is typical of the law enforcement situation in the Northern Sierra Madre Natural Park. As was extensively shown in Chapter IV, there is no political will to implement the park management plan. Local, regional and national government officials’ private interests in illegal and unsustainable resource extraction are the sole reason for such failure. The poverty of rural communities is used as an excuse for this mismanagement, even when these rural poor indicate that they suffer from it and wish it to stop.

ANCESTRAL LAND RIGHTS

The Agta’s concern with environmental degradation is closely linked to their relations with non-Agta. In March 2004, Dicaroyan (Divilacan) Mr. Rolando Cabaldo characterized the situation as follows:

‘We wish to protect the forest for our children because we depend on it. We have the right to protect the area from *Kristyanos* [under the IPRA], but at present we cannot do anything because they are already abusing the forest. [...] We can not do very much because the *Kristyanos* have the power. This is because they are all staying in one place, unlike us. We are all spread out, a few houses here and there. There is not much cooperation between us. The *Kristyanos* do cooperate.’

This is the very situation for which the DENR’s ancestral domain claim system (DAO no.2 of 1993) and the NCIP’s ancestral domain titling system (IPRA of 1997) were called into life. These legal instruments enable indigenous peoples like the Agta to own and regulate access to their ancestral domains. The underlying idea is that this will serve two main purposes. First, it is intended to improve indigenous peoples’ plight by granting them the control over their ancestral domains after centuries of intrusion into these territories. Second, assuming that these indigenous populations are nature’s best stewards, it is expected to lead to better environmental management. I will here discuss the implementation of these legal instruments in the Northern Sierra Madre Natural Park.

The history of awarding ancestral domain rights to the Agta in the protected area dates back over ten years. As we will see, however, it is characterized by institutional conflict and misunderstanding, lack of results, and ultimately, confusion and frustration among both Agta and non-Agta. Between 1993 and 1998, the DENR (under DAO

no.2) issued a total of 181 ancestral domain claims to indigenous peoples nationwide. Together these covered 2.5 million ha of land (van Velthoven 2004:30; Aquino 2004:73). Three such claims were granted to Agta groups in the Northern Sierra Madre, covering over 45,000 ha. They were situated in Palanan (28,376 ha), Maconacon (3,309 ha) and San Mariano (13,591 ha). The claims' real-life value has however been insignificant. The respective Agta groups were very poorly involved in the application process and were therefore hardly aware of the claims' existence and implications (Magaña 2003:249-51; van der Schaaf 2000:2, 119; van Velthoven 2004:113).

With the IPRA's enactment in 1997, responsibility for ancestral domain issues moved from the DENR to the newly formed NCIP. The commission was expected to convert the three ancestral domain claims issued by the DENR into ancestral domain titles. In addition, new title applications were supposedly filed. However, of the 38 ancestral domain titles the commission gave out nationwide between 2002 and 2005, covering over 841,000 ha of land, none were issued to the Agta of Northeast Luzon (NCIP 2005:7-8).

NGOs' efforts at ancestral domain titling

Within the Northern Sierra Madre Natural Park, the NCIP's problematic take-off phase coincided with the presence of NORDECO and PLAN. In spite of the NCIP's inaction, these NGOs initiated the application process for ancestral domain titles throughout the protected area. They considered the three existing ancestral domain claims that were previously granted by the DENR 'glaringly erroneous' and strongly advocated for their re-delineation before turning them into titles (Magaña 2000:115; van der Schaaf 2000:1). The Palanan claim was criticized for its exclusion of marine areas on which coast-dwelling Agta directly rely for their sustenance. The San Mariano claim was deemed inauthentic as several of the claimants were non-Agta immigrants. The Maconacon claim was considered problematic as it overlapped with a communal forest which had earlier been granted a Community Based Forest Management Agreement (CBFMA) (Magaña 2003:249-251).¹³⁵ In addition to working on the conversion of these existing claims into titles, PLAN and NORDECO concentrated on the filing of title applications for a large number of relatively small ancestral domains.

In response to the DENR's previous lack of involvement of both Agta and non-Agta in the application process, an indigenous peoples' task force was installed, consisting of Agta representatives, PLAN, NORDECO, the NCIP, the DENR, the office of the Protected Area Superintendent and municipal governments (PLAN 2001a: annex 1-60; Magaña 2003:251-4). The taskforce was responsible for the delineation and mapping of ancestral domains and the formulation of so-called Ancestral Domain Sustainable Development and Protection Plans (hereafter ancestral domain plans). In

¹³⁵ This problem was on 6 February 2004 resolved in favour of the Agta's ancestral domain claim, by the signing of a Memorandum of Agreement between the CBFMA holder, the principal Agta ancestral domain claimant and several witnesses, among whom the mayor of Maconacon and the Protected Area Superintendent of the Northern Sierra Madre Natural Park.

addition, it had to present the plans to *barangay* officials, the relevant municipal government and the PAMB for approval. In order to facilitate the realistic integration of the proposed ancestral domain titles in the management of the Northern Sierra Madre Natural Park, the taskforce wrote a manual. In line with this manual and with the park's zoning system, each ancestral domain plan specified resource management for a multiple use zone, a sustainable use zone and a strict protection zone (Magaña 2003:253; van Velthoven 2004:69-70). Following this process, 15 ancestral domain maps and ancestral domain management plans were drafted in the course of 2001 and 2002 (PLAN 2002c:18). From reviewing these plans and from interviews with Agta throughout the park, several observations can be made.

First, despite the Agta's representation in above mentioned indigenous peoples' task force it can be questioned to what extent the intentions at making them the principal decision makers in the mapping and planning process have succeeded. By this I do not refer to the fact that all plans have obviously been written by the initiating NGOs instead of by Agta. This is presently unavoidable given the Agta's low educational background, and can only be tackled over time. Instead, I am referring to the Agta's poor understanding of the ancestral domain titling system. PLAN itself also noted the limited knowledge of the system among its target groups in a 2002 evaluation, and therefore concluded that a 'massive Information and Education Campaign for both Indigenous Peoples and migrants is necessary' (PLAN 2002c:19).

From interviews with members of the targeted Agta groups, it shows that many informants are indeed unfamiliar with the ancestral domain claim concept, while not even the best educated and informed individuals comprehend the claims' details (table 6.3). As was demonstrated for the Agta's awareness of the Northern Sierra Madre Natural Park, especially women are badly informed. Of 53 Agta adult informants from settlements all over the protected area, almost half were unable to explain the meaning of either 'CADC' (Certificate of Ancestral Domain Claim) or 'CADT' (Certificate of Ancestral Domain Title). While some of them had heard of these concepts but forgotten about their meaning, for most the terms did not ring any bell. The other half of respondents were vaguely familiar with the concepts. Almost one third mentioned 'protection from non-Agta' as the primary function of ancestral domain claims and titles, while the remaining respondents specifically mentioned the protection of natural resources as a primary function.

Table 6.3 Awareness on ancestral domain claims and titles

	Male	Female	Total
Not aware	15	11	26 (49%)
Ancestral domains to be protected from non-Agta	15	2	17 (32%)
Ancestral domains to be protected for conservation purposes	8	2	10 (19%)
Aware of functions, situation and implications of claims and titles	0	0	0 (0%)
Total	38	15	53 (100%)

Second, the proposed plans contain several technical limitations. One of these is the selection of proposed management options. Above outlined problems with the definition of traditional resource utilization in the park management plan (DENR 2001a:73) once again arise in the design of ancestral domain management plans. The plans mainly revolve around the supposedly traditional activities of hunting and fishing, while other important contemporary livelihood activities remain mostly unmentioned. The commercial collection of rattan and swiftlet nests, and even timber extraction, may have sustainable harvesting potential within ancestral domains, but these opportunities are not explored.

Third, the drafted plans lack operational detail (PLAN 2002c:18). Most management plans speak of sustainable resource use without specifying the implications for resource extraction procedures, methods and quantities. Also, the plans do not offer tools for actual enforcement on the ground. No specifications are given on how the title owners are supposed to protect their ancestral domain from further encroachment, or how to deal with free riders. The silent, but ungrounded assumption is that the issuance of the title alone will suffice in offering the needed protection. The plans further lack specifications on the role of outsiders (both Agta and non-Agta) in the management and marketing of natural resources within the ancestral domain.

These imperfections aside, the 15 proposed ancestral domain claims and drafted management plans are unquestionably the best result so far. Unlike earlier efforts by the DENR, they are based on real field surveys carried out within the Agta's ancestral domains. Moreover, the plans cover relatively small areas which correspond with the claimants' actual hunting and fishing grounds. The chosen management unit, which the NGOs refer to as 'bands', largely correspond with the Agta's residential group. This is indeed a tightly knit social unit, covering a more or less bounded geographical area, which therefore offers relatively good potential for ancestral domain management.

In spite of these strengths, the NCIP has not approved a single one of the drafted ancestral domain plans. Moreover, throughout the process, the commission has been reluctant to cooperate with the various NGOs. Frustrated about this problematic cooperation, PLAN writes that the formulation of ancestral domain plans is hampered by the '[...] inadequate support [...], slow action and bureaucratic set-up of the NCIP provincial and regional offices. [...] NCIP, which plays a great role in the processing and awarding of the CADT, is quite unsupportive' (PLAN 2001a:24, 26).

NCIP's ongoing ancestral domain titling activities

After a long period of inaction, in the course of 2005 NCIP took up its own ancestral domain titling activities in the Northern Sierra Madre Natural Park. As the commission's approach differs significantly from above described earlier efforts by the DENR as well as PLAN and NORDECO, these were not used as point of departure. Instead, the NCIP argues that the Agta have inhabited the entire Sierra Madre Mountain Range since what is called time immemorial.¹³⁶ It is therefore considered the

¹³⁶ The IPRA (NCIP 1997: section 3p) defines 'time immemorial' as 'a period of time when as far back as memory can go, certain ICCs/IPs [Indigenous Cultural Communities/Indigenous Peoples] are known to

Agta's right to legally own this entire territory, rather than isolated patches within it. Thus, the NCIP provincial office proposes to have the entire Northern Sierra Madre Natural Park titled as Agta ancestral domain. In its current proposal, the NCIP envisions having an estimated 250,000 ha, or 2,500 km², of unbroken land and marine area included in the ancestral domain title.¹³⁷

In 2006 the NCIP has conducted baseline surveys in the targeted communities, which involves the collection of census data, the tracing of genealogies and the collection of evidence of long-term Agta occupation. In 2007 boundary delineation activities in several municipalities within the protected area were carried out. At the moment of writing, the NCIP works on the preparation of a so-called claim book, in which proof of the Agta's historical occupation of their ancestral domains is compiled.

While it pursues this plan the commission meets resistance from the DENR, and more specifically the Office of the Protected Area Superintendent (PASU), as well as from municipal and *barangay* governments. They accuse the NCIP of rushing the titling process without informing and consulting other stakeholders. Feeling by-passed, the DENR and Office of the PASU regularly refer to the fact that under the NSMNP Act the PAMB is the only policy-making and permit-granting body in deciding on management issues in the protected area. They resist the idea of having the entire protected area turned into a single ancestral domain title, as they fear this will be irreconcilable with park management goals.

The municipal and *barangay* governments likewise feel left-out. They are suspicious of the NCIP's haste, fearing that non-Agta constituents risk being expelled from the land they consider theirs. In 2006, the municipality of Palanan officially protested against the continuation of the NCIP's ancestral domain delineation activities within its jurisdiction, and demanded a new round of consultations with local communities (Office of the PASU 2006; LGU Palanan 2006). Since then, several such consultations did take place, but they have not taken away the feeling of discomfort. Both non-Agta and Agta throughout the protected area express fear that an explosive situation may arise unless all parties' concerns are more carefully taken into account. On various occasions, Agta have suggested to exclude certain portions of land from the proposed title as they do not wish to get into conflict with non-Agta claimants. Non-Agta express their resistance to existing plans as follows:

'If the CADT comes, the Agta should only be allowed to cultivate land that is not yet in use by *Kristyanos*.' (A man from *barangay* San Jose, San Mariano); 'There will be a problem for the next generation if this will be pushed through because there will be not enough land for everyone if we (non-Agta) cannot extend our land.' (A woman from *barangay* Sapinit, Divilacan); 'Why is it that the Agtas will receive a title while we *Kristyanos* do not have any titles to the land here?' (Another woman from *barangay* Sapinit, Divilacan); 'It is not good that *Kristyanos* are not allowed to do the same things in the areas as Agta, because they will be jealous.' (A man from *barangay* Flores, Maconacon); 'Just as the Agta can enter our territories, we should be able to enter theirs.' (*Barangay* captain of Dipudo, Divilacan)

have occupied, possessed in the concept of owner, and utilized a defined territory devolved to them, by operation of customary law or inherited from their ancestors, in accordance with their customs and traditions.'

¹³⁷ Barbara Garcia, Provincial Head NCIP Isabela, personal communication 2007.

Not knowing how to solve these problems, the DENR, the NCIP and municipal governments tend to conclude that the two main legal frameworks that come together in the context of the Northern Sierra Madre, the IPRA and the NIPAS law, are incompatible (van Velthoven 2004:112). This is despite the fact that the NSMNP Act provides an important bridge between these legal instruments. For instance, it states that the Agta's rights to their ancestral lands and domains within the Northern Sierra Madre Natural Park will be fully recognized. It also states that the provisions of the NSMNP Act will be 'construed liberally' in favour of the Agta and in accordance with the NSMNP's conservation objectives. With respect to settlement rights of non-Agta, it prescribes that migrants who have been living within the NSMNP five years prior to the park's establishment will be provided with tenurial rights over their habitation sites (DENR 2001b: sections 16, 17). This would imply that the Agta would not have the right to drive these so-called 'tenured migrants' from their ancestral domains, as is feared by local governments.

Local officials nonetheless feel that the NSMNP Act does not provide sufficient guidance in solving specific dilemmas and say they cannot properly implement these laws without their 'harmonization' at a higher legal level. As there are more Philippine protected areas which are inhabited by indigenous peoples, this is an issue of wider concern (see Perez and Minter 2004). A national joint DENR-NCIP technical working group has therefore worked on the harmonization of the IPRA and NIPAS law since 2003 (DENR-NCIP 2003; van Velthoven 2004:109, 112). In May 2007 it issued a joint DENR-NCIP memorandum regarding the 'Management of overlapping protected areas and/or their buffer zones and ancestral domains/lands' (DENR-NCIP 2007).

Clinging on to this memorandum, in July of the same year, the Office of the PASU of the Northern Sierra Madre Natural Park and the regional and provincial offices of the NCIP had a first joint meeting. The objective was to form a provincial working group in Isabela, which has the function of drafting a harmonized plan for the management of ancestral domains within the Northern Sierra Madre Natural Park. This implies that another bureaucratic trajectory commences before ancestral domain titling will materialize. Thus, over a decade after the IPRA's enactment, ancestral domain titling in the Northern Sierra Madre is still pending. Neither the socio-economic, nor the environmental benefits of the new legislation have come about.

EMPOWERMENT

The Agta's weak political organization is perhaps their greatest handicap in facing the pressing problems that have been addressed in this and previous chapters. Living together in small groups and being only in regular contact with a relatively limited number of people outside these groups, they are not in a good position to collectively act on common problems.

In addition to this lack of internal coordination, the Agta are barely part of the political structures that govern the world around them. This is most evident in the western interior, where they generally fall completely outside local political life. In the coastal areas, Agta are slightly better informed and involved in local governance. In some *barangays*, for instance, they have been appointed as *barangay* police. Their role in that capacity is mainly to guard their areas from illegal resource extraction, most

notably electro-fishing and logging. Yet, even here, Agta rarely vote in local and supra-local elections and only attend *barangay* or municipal meetings in exceptional cases. They are hardly represented in *barangay*, municipal and provincial governments, and are completely absent from regional and national politics.¹³⁸ Moreover, unlike other Philippine indigenous peoples, notably various Cordilleran ethnic groups (see Perez 2005; Hilhorst 2003; Prill-Brett 1994), the Agta do not show a tendency towards displaying their cultural identity, and using it as a tool for political empowerment. Thus, lacking home-grown representatives and expressive symbols of cultural identity, the Agta depend on self-proclaimed advocates from outside, such as missionaries, NGO personnel or anthropologists. Here I will discuss interventions directed at 'organizing' the Agta.

NGOs

Like the ONCC's earlier mentioned policy to appoint local 'chieftains', PLAN has attempted to address the Agta's lack of political organization by appointing what it called 'band leaders' throughout the Northern Sierra Madre Natural Park. All of these were men. It was envisioned that indigenous peoples' organizations would eventually arise which could speak on behalf of the Agta population with respect to ancestral domain and park management issues. However, it soon turned out that the appointed leaders did neither attend public meetings, nor contact other appointed leaders for co-ordination and exchange of shared interests. No coherent organization ever arose. Several Agta informants have expressed disappointment over their leader's lack of performance. The appointed leaders themselves were often equally frustrated, and regularly confided they felt burdened with responsibilities they could not take on. After PLAN's withdrawal, WWF has not actively continued these attempts at political organization. It did however organize several educational and cultural activities which were to benefit the Agta's empowerment as a culturally distinct group (box 6.5).

Government

A different sort of political organization was initiated by the NCIP in 2003. This concerned the formation of so-called 'indigenous consultative bodies' at the provincial, regional and national level. These bodies are to advise the NCIP on the problems, aspirations and interests of indigenous peoples (NCIP 1997: section 50; NCIP 2003: section 2, 14; NCIP 2004:25). In the provincial consultative body for Isabela, five Agta representatives were supposed to take seat along with, among others, five representatives of so-called resettled indigenous communities. The latter are defined as indigenous peoples that live outside their ancestral domains due to displacement or resettlement (NCIP 2003: section 4f). The first preparations for the formation of Isabela's consultative body took place in December 2004, while a follow-up meeting

¹³⁸ Exceptions are an Agta man from *barangay* Dilakit, who acted as *barangay* councillor in 2004, and an Agta woman from Reina Mercedes (Maconacon), who was elected as *barangay* councillor in 2007. It is further worth noting that one of the Agta PAMB members has in 2005 been hired as staff member of the NCIP's provincial office of Isabela.

was held in January 2005 to complete the consultative body's formation. As box 6.6 shows, this did not lead to the Agta's sustained participation as a result of poor communication, prejudice and the dominance of other indigenous representatives.

More recently, the NCIP has further focused on a potentially powerful instrument to maximize the Agta's participation in decision making. This is their right to 'free and prior informed consent' (FPIC). Under the IPRA (section 3g) this is defined as 'the consensus of all members of the ICCs/IPs [indigenous people] in accordance with their respective customary laws and practices free from any external manipulation, interference and coercion, and obtained after fully disclosing the intent and scope of the activity, in a language and process understandable to the community.' The NCIP is mandated to ensure that no interventions take place within the Agta's ancestral domains unless they have given such FPIC (NCIP 2006).

One FPIC application has been successfully filed by a Manila based company called Platinum Group Metals Corporation, which now operates a nickel mine within an Agta ancestral domain in Dinapigue, just bordering the Northern Sierra Madre Natural Park. In April 2006 the NCIP issued the company its compliance certificate¹³⁹ on various conditions, the most important of which are the following. The mining company is obliged to pay 1% of its annual revenues as royalties to the affected Agta community. The NCIP will be the holder in trust of 30% of this amount, which will be allocated for 'development projects and social services'. The remaining 70% of the royalties are to be spent on 'construction of permanent houses, purchase of fishing boats, farm machineries and other basic needs'. However, during the first year of its operation, the company has to allocate part of the royalties (PhP30,000 or US\$537 monthly) 'for the purchase of rice, coffee, sugar and other necessities'. The company is further obliged to 'answer for all damages to the [Agta's] ancestral domain and burial grounds [...]' Additional conditions include the prioritization of the Agta in employment opportunities in mining operations and in the establishment of a grocery shop within the company's premises.

Various observations can be made with respect to the application process and its outcome. First, the process followed by the NCIP to issue this compliance certificate is questionable. It has caused frustration and friction within the Agta population of Dinapigue, who were internally divided with respect to the proposed mining operation. The population consists of two main residential groups. One is based in Ango (settlement no. 22 on map 2.2), which falls within the proposed mining concession, while it has also been surrounded by logging concessions for several decades. This group sharply opposed mining operations as they saw it as a further threat to their resource base. Moreover, they were disillusioned by previous unfulfilled promises made by logging companies. The second group resides in Dibulo, which falls outside the mining and logging concessions (and outside the study area). This group was in favour of the proposed mining as they expected it to bring them employment opportunities, while they were less pessimistic about the potential environmental damage.

During a consultation with these Agta groups concerning their FPIC in May 2005, the Ango Agta felt pressured by the NCIP to comply with the mining operation

¹³⁹ Compliance certificate No. 00RII-06-04-034. Signed 21 April 2006 by Jannette Cansing Serrano, NCIP Chairperson.

against their will. They were left with the feeling that regardless of their opinion, the decision to let the mining company start its operations had already been made. Several people expressed frustration over the fact that their rights as stipulated under the IPRA were being violated. According to the NCIP, however, during the final consultation held, which took place on 19 August 2005, all Agta gave their consent and thus the compliance certificate was released to the mining company. The Diocese of Ilagan fiercely criticized the process. In a public statement it has accused the NCIP of improper consultation of the affected Agta communities and of manipulation of their consent by holding the final consultation in the absence of the mining opponents.

Aside from the FPIC compliance certificate's legitimacy, the conditions on which the NCIP has given it out are far from satisfactory. While royalties amounting to 1% of a mining company's annual revenues may sound impressive, it is doubtful whether the Agta will benefit from them at all. The reason the Ango residential group were opposed to the mining operation was that they feared for the destruction of their hunting and fishing grounds. Limitation of this damage is not at all guaranteed. Moreover, the compensation offered consists of the familiar set of ad-hoc material support. The FPIC compliance certificate states that as much as 70% of the royalties will be spent on relief goods in the form of rice, coffee and sugar. The remaining 30% are to be allocated for development projects and services, namely permanent houses, fishing boats and farm tools. As has been demonstrated in the foregoing, such material assistance has so far never structurally benefited the Agta, and is unlikely to do so this time.

New People's Army (NPA)

There appears to be a link between individual Agta's empowerment and their (previous) involvement with the NPA. The fact that most NPA conscripts gained valuable literacy skills during their recruitment was already mentioned. In addition, the psychological impact of the NPA's rhetoric seems significant. A commonly heard remark by former Agta conscripts is that the NPA taught them dignity by telling them that they are no less than anyone else, and that they should not accept intimidation or disdainful treatment by non-Agta. Throughout the Northern Sierra Madre Natural Park, those Agta individuals that were once enlisted with the NPA are among the most vocal and articulate informants to this study. They are also better capable than other Agta individuals of publicly expressing the Agta's collective interests.

Box 6.5 Agta empowerment activities by WWF

As part of National Indigenous Peoples Week, in October 2004 WWF organised a series of educational and cultural activities in Palanan. One of these was a meeting on the IPRA, which was held at the SIL missionary station in Dibungco. While watching the participants arrive at the venue, WWF's communication specialist, a woman in her late forties, remarked:

'Unat [non-Agta] are the ones abusing the [natural] resources. If we would all live like the Agta there would be no abuse. They live a very simple life; they just live under a shelter. But they also die early and I think that's in their culture. [...] My heart aches for them if I look at the people here. We were supposed to start [the program] but they are not strict in their time, they have not taken their breakfast yet. Look at those men, just sitting there, doing nothing, waiting for the guava to fall from the tree. You need desires and aspirations in life, without that, where is the challenge? Someone once told me: "If you are born poor, it is not your fault. But if you die poor, it is your fault. Then you have done nothing to improve." But they seem so happy!'

The program lasted nearly four hours without break. One local DENR official was there to answer questions, but despite repeated invitations to partake in the activity no NCIP personnel were present. WWF staff members held a series of lectures, the first of which was lively and interactive. The two following lectures were full of English abbreviations and technical terms, while schematic flipcharts were used as visual aids. The meeting began with an audience of some 25 adults, with men sitting in front and women and children at the back. Within one hour the first participants left the room, while several others fell asleep on their chairs. Towards the end of the meeting only a handful of men were still present. One of them expressed his frustration regarding the NCIP's absence during the meeting:

'Before IPRA came, I had peace of mind. But since then I can sometimes not sleep at night because I am thinking about all the work for the next day. I am also often going out for meetings. These should not be held in English but in a language which we understand. [...] We know that NCIP is responsible and now they are not here. They are the ones supposed to explain this law. They are creating a law without following it up, without doing their part as responsible agency.'

Later that week WWF organised an Agta cultural manifestation. Agta households from all over the municipality were invited to attend the event. During the preparations a young female WWF employee joked she had 'Agta blood' and was therefore to be forgiven for any 'uncivilized behaviour'. WWF's communication specialist encouraged her to 'act as primitively' as she liked during next day's celebrations, saying that she 'might as well perform topless and in g-string'. The day started with a parade through Palanan town, headed by several elderly men holding a banner saying, in English: 'National Indigenous People's Week Celebration October 25-30, 2004'. About a hundred Agta adults and children shuffled behind the banner. To the disappointment of the WWF organisers, most of them were dressed in shorts and T-shirts, despite instructions to wear traditional attire. A few town's people watched on as the parade silently passed by. Meanwhile, a loud boy- and girl-scouts parade, which was held a few streets away, attracted more attention. After lunch and the distribution of sacks of rice to each of the households, a games program started, consisting of competitions in archery, mat-weaving, fire-making, rice-cooking, and g-string dressing. The evening program consisted of Agta and religious songs and was attended by several local politicians.

Box 6.6 The formation of the Provincial Consultative Body of Isabela, December 2004

For the formation of the Provincial Consultative Body of Isabela, the NCIP invited indigenous representatives from throughout the province to discuss the appointment of its members. Of five invited Agta representatives, only one was present. In hindsight this turned out to be due to the poor communication strategy used. The written invitations never reached some of the invitees and they were unclear in contents, contained many abbreviations and English terms and did not specify if and how travel costs would be compensated. The only Agta representative who was present, a young man from Dinapigue, felt he was barely part of the meeting's process. Frustrated, he complained:

‘They [NCIP] don’t mind the Agta, even though they said yesterday that they really wanted to involve the Agta.’

The meeting itself was dominated by the NCIP and representatives of Ifugao and Gaddang ethnic groups. As the former originate from the Cordillera Mountains in north-west Luzon, they were for purposes of this meeting considered a ‘resettled indigenous community’. Together with other such communities, they are entitled to a maximum of five representatives in the provincial consultative body. Nonetheless, they asked for a larger number of representatives, claiming that they formed the majority of indigenous people in Isabela. The Gaddang’s indigenous status is equally debatable. Although they have historically inhabited the Cagayan Valley, today they form a largely urban, highly assimilated community. Their main spokesperson was a well educated doctor who had been living in the US for several years. When I expressed my concern at the Agta’s poor representation during the formation procedure, an Ifugao participant stated that:

‘All IPs [indigenous peoples] are equal and all have the same chances, but it is up to the person to help himself. You should not always wait for the government to come to you. You should not be lazy.’

CONCLUSION

This chapter has provided insight in the interventions that government, non-government and church-based institutions have directed at the Agta since colonial rule, with a focus on contemporary developments in the Northern Sierra Madre Natural Park. It was demonstrated that interventions took place, with varying intensity, in the fields of Christianization, health and education, livelihood and sedentarization, sustainable resource use, ancestral land rights, and empowerment. In this concluding paragraph I will draw parallels between these various change agents and their interventions. I will also discuss the interventions’ impact on the Agta’s socio-economic situation and the underlying reasons for their general failure. Finally, I will reflect on their relevance for the Agta’s own development agenda.

Historical continuity

Change agents' perceptions of the Agta, and the interventions resulting from these perceptions, show remarkable historical continuity. Although the wording and tone of official government and non-government policies have evolved over time, the underlying ideas and especially the practical implications have remained almost unchanged in many respects.

Along with other ethnic groups that resisted colonization, the Agta were labelled 'infidel' and 'untamed' by Spanish, and 'non-Christians' and 'wild' by American colonizers. Of all peoples falling under these categories, it was widely agreed that the Agta were, and were bound to remain, the least 'civilized'. The term 'non-Christian' was maintained until well after independence, and then changed into more politically correct terms such as 'national minorities', 'cultural communities' and eventually 'indigenous peoples'.

Yet, despite the introduction of these more neutral terms, stereotyped, prejudiced and racist perceptions of the Agta persist among government and non-government agencies alike. More than being either negative or positive in the extreme, such stereotypes tend to contain a confusing mix of elements. Agta are on the one hand seen as uncivil, according to some more animal than human. They are further considered to have no aspirations, to be lazy and incapable, even unwilling, of making a descent living. Moreover, their assumed habit of wandering through the entire Sierra Madre makes them a problematic and intangible group for change agents to deal with. On the other hand, they are seen as peace-loving noble savages, which are intimately connected with their natural environment, and capable of living the simple life that presumably more civilized peoples have forgotten about.

While colonial and post-independence policies officially revolved around forced resettlement, subordination and integration, contemporary policies formally depart from the principles of 'choice' and 'self-determination'. Despite the considerate tone of the latter, they leave much less room for cultural variation than is suggested. Even though change agents' official strategies claim otherwise, the actual interventions directed at the Agta still are consistently built on two main pillars: sedentarization and the adoption of agriculture. The campaign against the Agta's hunting and gathering way of life is thereby continued.

In addition to these classic elements of sedentarization and agricultural development, each of the change agents has its own specific agenda. Missionary organizations are primarily preoccupied with the Agta's conversion, but as a sideline also provide medical and educational support. The various NGOs that until recently targeted the Agta of the Northern Sierra Madre Natural Park were officially primarily focused on conservation of natural resources. As means to this end, they also invested in livelihood support, educational and medical assistance, the filing of ancestral domain title applications, and political and cultural empowerment. Government organizations target the Agta of the Northern Sierra Madre Natural Park each in their own way. For village, municipal and provincial administrations the Agta's plight appears to be the least of priorities. In as far as they pay attention to the Agta, they merely provide ad-hoc medical support and relief aid. The DENR is officially mandated to address issues of natural resource management. The NCIP, finally,

focuses on the processing of ancestral domain title applications and the Agta's political empowerment.

Interventions and their impacts

Small successes aside, one cannot avoid concluding that the development agenda has so far failed to benefit the Agta of the Northern Sierra Madre Natural Park. Health and education problems stay unaddressed, except by missionary organizations, and to some extent by the NPA. Livelihood support and sedentarization programs continue to be as unsuccessful as they were under colonial rule. Conservation measures abound on paper, but, in the absence of law enforcement remain invisible in reality. The Northern Sierra Madre Natural Park thus essentially is a 'paper park', which does not offer the Agta any support in their struggle over natural resource use. The same applies to interventions regarding the Agta's ownership of their ancestral domains. A decade of institutional competition and conflict has brought the Agta nothing but confusion and disillusion in this respect. Again with the possible exception of the NPA's empowering influence, the few efforts which have been taken to politically and culturally strengthen the Agta have yielded no success at all. Worse, the case of the FPIC compliance certificate, which allows for mining operations to take place within an Agta ancestral domain, suggests that not all efforts at empowering the Agta are necessarily genuine.

The consequences are serious. Most importantly, the situation leaves the Agta to stand alone. They get increasingly frustrated about the unfulfilled promises and contradictory messages and begin to fear that even a highly progressive law as the IPRA holds no guarantee for respect for their rights. Indeed, thus far, IPRA has served the cultural groups that already are politically empowered such as the Gaddang, Ibanag and Ifugao, while the Agta have not yet seen any of its benefits. On the contrary, as the situation is now, the IPRA merely results in increased tension between Agta and non-Agta, with potentially dangerous outcomes.

An additional adverse feature of the contemporary interventionist agenda is its almost exclusive focus on Agta men. The mission's impact in this respect seems most intense. While Agta women throughout the protected area were usually eager to speak out on their concerns during interviews, this was not the case among Born Again Christian Agta groups. Here, we were requested to conduct interviews with men only, as these were considered to be the household heads. Government agencies and NGOs are almost equally male-biased in their activities. Men were appointed as 'band leaders' and PAMB members, men were targeted in education campaigns on the NSMNP Act and the IPRA, and men were the main participants in agricultural trainings. This approach not only ignores Agta women's concerns and their important role in natural resource use, everyday economic activities and interactions with non-Agta, it also sidelines them in decision making processes that may be crucial for the Agta future.

Another consequence of the failing programs is the waste of material resources and social capital. This is most striking with respect to the NGOs' interventions, which have focused on the free dispersal of farming and fishing equipment. Yet, this assistance has turned out to be far from effective as was evident from the fast pace in

which the distributed materials got displaced, damaged and discarded. Moreover, it has certainly not benefited social relations within and between Agta residential groups, given the conflicts that have arisen over *carabao* care and the alleged improper use of ploughs and fishing boats.

What are the causes of such all-encompassing failure? First, intervention programs lack internal coherence. This problem already arose under American colonial rule, during which the agenda of isolating the 'non-Christian' tribes for purposes of cultural preservation was combined with sedentarization programs for purposes of national integration. This ambivalence persists in the contemporary development agenda. For instance, the IPRA's focus on self-determination and choice of development paths does not withhold its main implementer, the NCIP, to actively promote a sedentary, agricultural lifestyle. PLAN's indigenous peoples' program was similarly ambiguous. On the one hand, it aspired to preserve and document the Agta's distinct culture (Magaña 2000). On the other hand, it aimed at bringing about a shift from forest-based to non-forest based livelihoods through the promotion of agricultural development, sedentarization, and introduced fishing methods.

Second, despite the considerable overlap between different change agents' intervention agendas, relations between them are characterized by institutional competition and even conflict. Government feels pressured by NGOs, which tend to work at a much faster pace and with much larger budgets. NGOs are highly critical of missionary organizations and deliberately work around, rather than with these. PLAN's ethnographic report on the Agta, for instance, argues that SIL's Christianization activities have had a detrimental effect on the Agta's cultural distinctiveness and that it has caused emotional distance between converted and non-converted Agta groups. It therefore recommends against channelling project activities through SIL or any other religious organization (Magaña 2000:44, 117). Institutional competition is however greatest between government agencies (Persoon 1994:xiii). This shows from the rising tensions between the DENR, the NCIP and municipal governments with respect to ancestral domain titling activities within the Northern Sierra Madre Natural Park. Legal disharmony between the IPRA and NIPAS is perceived as an insurmountable obstacle, solutions for which are thought to be only available at higher political levels. Until these are offered, local policy implementers cling on to their own interests, instead of seeking common ground.

Lack of continuity and genuine commitment forms a third problem. With the exception of missionary organizations, which show remarkable long-term commitment, all other change agents have relatively short attention spans. Government programs tend to be redirected with every change of administration. Worse, even within one term a change of staff may lead to turnarounds in policy interpretation and implementation. NGOs generally do not stay on longer than four or five years, within which they usually aim at achieving highly ambitious targets. In all cases, Agta tend to be much less familiar with the purposes of different agencies and their programs than with individual representatives of these agencies. Interventions therefore get a highly personalized character, which causes their impacts to fade as soon as these specific individuals disappear from the interventionist stage. Moreover, while some of these individuals do feel genuinely committed to work for the Agta's well-being, the institutions of which they are part are never primarily geared towards that goal (Persoon 1994:8).

Few, and perhaps none of the interventions that were ever directed at the Agta, were thus solely intended to serve them. There are always other, sometimes hidden, agendas from which development interventions result. As was shown in this chapter, these include Christianization, extension of government control over uncontrolled areas and conservation of natural resources. Even when programs are officially intended primarily for the Agta, such as ancestral domain titling, institutional interests tend to take precedence over the Agta's interest. This is exacerbated by the fact that the Agta lack home-grown representatives. They depend on outside advocates to make their concerns known to the world, and these advocates do not necessarily represent the Agta's best interest.

Cliché as it may sound, the final and most important weakness of interventions directed at the Agta is their lack of cultural sensitivity (see also Persoon 1994:16; Headland 1985). Rather than building on already existing elements, they have focused on bringing about a complete transformation of the Agta's socio-cultural system. More precisely, they have aimed to eliminate those aspects of the Agta's mode of existence that render it relatively resilient: mobility and livelihood diversification (Folke, Colding and Berkes 2003:362). Planned intervention, had it been successful, would thus have resulted in increased vulnerability, not increased resilience.

Interestingly, as early as in the 1930s, scholars incidentally wondered whether planned interventions regarding 'the Negrito' and other 'non-Christians' were of real value to them at all (F. Keesing and M. Keesing 1934:260-1). Also, as mentioned, PANAMIN officially opted for an approach in which indigenous groups would be asked what they want, rather than being told what they need. And yet, the good intention of listening instead of preaching has until this day not been put into practice, as earlier cited executive assistant of Divilacan's mayor acknowledged in March 2004:

'We *Kristyanos* here in the Philippines are forgetting what the Spaniards did to us before, and now we are colonizing the Dumagats! We are taking their resources and they are losing their culture, their land, their autonomy. We are forcing on them our own questionable beliefs. That is not development! A people can only develop along their own culture, we should respect their culture.'

It is this lack of respect for and understanding of the Agta's culture and their aspirations that leads to patronizing quick fix solutions which do not address the real issues at stake. It is rarely acknowledged that the reality is much more complicated than such solutions suggest. Only few are willing to admit that they simply don't know what goes on in the Agta mind, such as Mr. Wan-ol, son of a *barangay* captain from San Mariano:

'They [the Agta] almost never come here [the village centre]. Sometimes they don't show up for one month. [...] They don't like to come here, I don't know why. They like to stay up there in the mountains. Maybe they are ashamed of themselves. They do not have anything. They are so different. [...] I don't know what is in their minds, it is difficult to communicate with them. They should not be ashamed of themselves, but it is very hard to change it.'

Agta aspirations

The ultimate question thus still remains unanswered. What do the Agta want? There are many clues to suggest that Agta aspirations deviate in important ways from what change agents have in mind for them. As final activity of field work for this study a five-day workshop titled *Ako ay Agta, ako ay Pilipino* (I am Agta, I am Filipino), was organized at Isabela State University Cagayan in August 2005 (Minter et al. 2005). The workshop was attended by 68 Agta households from all over the Northern Sierra Madre Natural Park. One of the program components was for the participants to identify and analyze challenges they face in their daily lives and to think of responses to these challenges. The participants presented the outcome to government officials that were invited for the workshop's last day. They came up with three main problem fields which they felt needed urgent attention from government. These were, not in order of importance, health and education; environmental degradation and livelihood; and relations with government and others (Minter et al. 2005:82).

With respect to health and education, the participants stressed the problem of high mortality, in particular among children, and the fact that very few children go to school (photo 6.2). They called on government to address these problems by ensuring increased availability of medical and educational facilities in Agta living areas (Minter et al. 2005:60). As we have seen, Agta do not benefit from medical and educational services for a combination of logistical, financial, cultural and emotional reasons. Even if it may be unrealistic to demand from government that it provides medical and educational facilities to each and every remote Agta settlement, there are other ways in which it can and should take on its responsibility to serve its Agta constituency in these respects. There is an urgent need to create a more welcoming environment for Agta in schools and hospitals. Both latent and open racism as well as ignorance regarding Agta culture and living conditions present among teachers and medical personnel are a problem that is seldom acknowledged and never addressed. Only when government and non-government personnel are willing to critically reflect on their own perceptions of the Agta and make an effort to think 'out of the box', will the emotional gap between Agta and non-Agta communities be bridged. Tolerance and openness, more than anything else, may prove the crucial step forward in effective extension of basic services to Agta individuals.

Regarding environmental degradation and livelihood, the participants emphasized the negative effects of logging, over-hunting and over-fishing on their income generating activities. They primarily focused on the depletion of their hunting and fishing grounds and the threats this poses to food security. As solution to this problem, they called for strict enforcement of existing environmental laws by the DENR (Minter et al. 2005:50, 82). This problem and the proposed intervention features high on the Agta's agenda, while it has proved to be among the least of governments' real concerns, despite the existence of elaborate environmental legislation. Of further interest is the Agta's primary focus on hunting and fishing when they speak of livelihood, while they only mention agriculture as a secondary concern. Never during the workshop did the participants express a wish to settle down in one place and permanently take up farming, as all interventions directed at livelihood support have so far aimed at.

Finally, the Agta's relations with government and other non-Agta were identified as an important problem area. In this context, the unsustainable extraction of natural resources by non-Agta was again mentioned as a priority issue to be addressed. Moreover, the participants called for support from government to ensure that Agta receive a fair price for their hunting, fishing and gathering produce. Frustration was expressed at the non-implementation of government programs intended for the Agta, notably the ancestral domain titling program (Minter et al. 2005:64).



Photo 6.2 Fidela Impiel presenting a problem analysis on health issues, Agta Workshop, August 2005, Cabagan

The workshop's outcomes have confirmed the concerns voiced by Agta informants that were met throughout this study and throughout the Northern Sierra Madre Natural Park. This suggests that Agta are first and foremost preoccupied with safeguarding favourable conditions for the continuation of a mixed economy of which hunting, fishing and gathering form a major part. At the same time, many Agta are certainly interested in increasing their agricultural activities as component of, but not as alternative for this mixed economy and only in as far as this is compatible with other economic and social interests.

In brief, Agta ask respect for their specific needs. These are in many ways similar and in other ways different from the needs of all other rural Filipinos. For change agents this is a complex reality to deal with, especially under circumstances of general poverty. Indeed, to borrow J. Scott's words, the Agta are 'a tough case for development' (Scott 1998:188). Yet, the only possible way forward is to finally do justice to earlier intentions of genuinely asking what it is that the Agta want. This will help in shifting aside biased assumptions on what is in their interest. Certainly, it will remove the condescending, but very common, idea that the Agta have no aspirations at all.

VII. CONCLUSIONS

If one thing stands out from the preceding chapters, it is that the Agta are much more resilient as a cultural group than they have been given credit for. This contradicts alarming forecasts which have dominated academic and public writing over the past century. It was predicted that by now both North Luzon's rain forest and, with that, the Agta's distinct culture would be gone. Fortunately, neither is the case. I argue that the Agta do not owe their cultural survival to legislative measures or any other intervention. They owe it to themselves. The flexible nature of their hunter-gatherer mode of production has enabled them to deal with change constructively. And yet, there is reason for concern. Most importantly, the resource base on which the Agta depend economically and culturally continues to be under pressure. At the same time, mechanisms that were designed to ensure the Agta's increased control over this resource base fail to bear fruit. In this concluding chapter I will reflect on the Agta's resilience by getting back to several theoretical concepts that were introduced in Chapter I, while I will simultaneously address the greatest challenges to this resilience.

THE AGTA IN THE FORAGING SPECTRUM

In the introductory chapter I chose an open and non-static definition of hunter-gatherers. It emphasizes that while hunter-gatherers procure most of their food from hunting, gathering or fishing they may also engage in agriculture, trade or wage labour (Kelly 1995:3). In addition to their foraging mode of production, hunter-gatherers usually are further characterized by residential mobility and a relatively simple and egalitarian social organisation. By this definition, the nearly 1,800 Agta inhabiting the Northern Sierra Madre Natural Park still fully qualify as hunter-gatherers, and, in my view, show no signs of turning into something radically different. While they adapt to ongoing social, economic and environmental change by integrating new elements into their existing socio-economic system, this adaptability allows them to maintain continuity in fundamental respects (M. Griffin 1996:15, 58-9; Endicott 2007:xi).

At this point we can more precisely define the concept of resilience in relation to the Agta's socio-economic system. How capable is it 'to absorb disturbance and reorganize while undergoing change, so as to still retain *essentially* the same *function, structure, identity and feedbacks*' (Walker et al. 2004:2, emphasis added)?

Despite outside pressures, in terms of its *function* the Agta's socio-economic system still succeeds in sustaining a population that depends on a mixed livelihood package consisting of hunting, fishing, (commercial) gathering, barter, logging, farming and paid labour. With respect to its *structure*, contemporary Agta society continues to display typical hunter-gatherer characteristics such as a relatively egalitarian social organisation, with high emphasis on kin structures and cognatic descent as well as a strong sharing ethic. An important additional feature is the existence of socio-economic ties with non-Agta. The Agta's *identity* is also still clearly recognizable and includes the persistent importance of mobility, a distinct language

and belief system, the use of body decorations and bow and arrow as identity markers, and a strong orientation towards forests and coasts. *Feedback*, finally, can be defined as the result of any behaviour which may reinforce (positive feedback) or modify (negative feedback) subsequent behaviour (Berkes and Folke 1998:6). In the Agta's context it could be illustrated by the still important mechanism that economic opportunity, resource fluctuations, social tension and spiritual needs induce mobility. Also, new opportunities (economic and otherwise) are either adopted or rejected based on their compatibility with function, structure and identity.

I have argued that the Agta's socio-economic system is indeed resilient in that it essentially retains its core characteristics, despite the many changes it is undergoing and incorporating. However, as outlined in Chapter I, there are four aspects that together determine resilience, namely *latitude*, *resistance*, *precariousness* and *panarchy* (Walker et al. 2004:2-3). What can we say about these aspects in relation to the Agta's situation as I have described it in this study?

The Agta's socio-economic system's *latitude*, or the amount a system can be changed before losing its ability to recover, appears considerable. This shows from the fact that the system persists despite the arrival of large numbers of non-Agta, the dominant presence of logging and mining companies in some areas and major environmental change. The main contributors to this latitude are the Agta's flexible livelihood strategy, their mobility and their kinship structures. Diversification provides them with a buffer to changing circumstances.

Agta society also shows substantial *resistance*. This is not meant in the sense of collective action and organisation, which the Agta obviously lack (see *panarchy* below). Instead, resistance refers to the ease with which core socio-economic features are changed. Agta seem little susceptible to forced change where it affects their mobility, hunting-gathering mode of production, resource extraction methods and belief system. This was most evident from Chapter VI, which described how interventions directed at transforming the Agta's hunting-gathering lifestyle to a sedentary and agricultural mode of existence have repeatedly failed.

Precariousness, which refers to how close the current state of the system is to a limit (which when breached will lead to the system's disintegration) differs per location. The coast-dwelling Agta's situation is least precarious, as was shown in the foregoing. The river-dwelling groups inhabiting (previous) logging concession areas are closer to a threshold as environmental pressure is highest there. As shown above, however, even the presence of logging operations does not imply the threshold is necessarily breached. Moreover, if and how a system will change following a threshold breach is rarely predictable (Berkes, Colding and Folke 2003:5).

In terms of *panarchy*, or the extent to which a focal level is influenced by other levels, there certainly is reason for concern. In all chapters we have seen how Agta territory is increasingly overwhelmed by influence from outside, whether these are large extractive industries, conservation agents or non-Agta residents. Agta are obviously weak in terms of their ability to effectively negotiate with those outside forces, which is why empowerment related interventions have been part of planned development in recent years (Chapter VI). And yet, I have argued against an image of the Agta as passive victims of outside change. While they unquestionably lack the collective strength to counter undesirable influence, they do deal with it by either walking off or by making use of whatever opportunity it brings.

Reflecting on the Agta's resilience in this manner provides insight in where their strengths and weaknesses are. Just as Holling (1973) observed for natural systems, for its survival the Agta's socio-economic system is not dependent on just one equilibrium state of optimal conditions. Instead, it can persist under a range of circumstances. This does not mean that all circumstances are equally desirable, however (Walker et al. 2004:3; Folke 2006:254). For instance, while the Agta so far persist in concession areas, many of them will agree that life is better in many respects without logging operations. Nor does it imply that the Agta's way of life is unbreakable: while the Agta's system may be resilient in terms of latitude and resistance, depending on the location it scores variably in terms of precariousness and it is outright vulnerable with respect to panarchy.

Subsistence and settlement

The Agta's livelihood strategy is one of diversification. The Agta subsist on a mixed economy which changes according to the specific social, environmental and economic circumstances. Their strength is their capability to take opportunities as they come along. Like other foraging peoples (see Endicott and Bellwood 1991:154; Endicott 1979a:15; Sellato and Sercombe 2007:26, 46-8; Kelly 1995:111-5), they combine economic and residential flexibility. As freedom of movement is a central value among hunter-gatherers (Sahlins 1972:12-4; Kelly 1995:152-3; Lye 2002:178), mobility plays an interesting role in the selection of the Agta's livelihood package. On the one hand it facilitates regular shifts between activities and locations, thereby increasing the total range of subsistence options. On the other hand, livelihood opportunities are only taken as long as they do not inhibit mobility, for this would have social, spiritual and economic consequences. It is the mutually reinforcing combination of livelihood diversification (Chambers and Conway 1991:11; Scoones 1998:6) and residential flexibility that accounts for most of the Agta's resilience. It ensures that they spread risks, create buffers and do not put all eggs in one basket (Folke, Colding and Berkes 2003:362).

Flexibility

Rai (1982:153) sees a dichotomy between the Agta's 'traditional system' and a 'transitional system', the latter of which includes the 'non-foraging strategies' of horticulture, wage labour and trade. In contrast, I do not view the Agta's engagement in 'non-foraging' activities as proof of their movement away from hunting and gathering. Instead, I suggest that they adapt them to fit the needs of their foraging mode of existence. I will illustrate this here.

As Chapter V showed, the Agta's farming activities have without exception been described as highly unsuccessful. If we assume that Agta aspire becoming full time farmers we can indeed hardly avoid concluding that they have a long way to go. But if we would conversely assume that Agta develop a farming system that fits their mixed economy we might arrive at a different conclusion (see also Ngo 2007:166). From that perspective, the Diangu Agta's involvement in irrigated rice cultivation does not

represent a 'lucky escape' from a situation of developing encapsulation (Bellwood 2005:34), but an opportunity, which is combined with other opportunities. This may then explain why Agta invest only little time in agriculture; why it can be a central livelihood component one year, and be of minimal importance the next; and why they may decide to abandon their fields to engage in other activities across the mountain range in between planting and harvesting. It also shows that, contrary to the idea that the Agta's increased interest in farming will cause them to become sedentary (Rai 1982:224; P. Griffin 1989:60), hunter-gatherer involvement in cultivation does not necessarily lead to sedentism (Biesbrouck 1999:190, 206; Eder 1984:849). In other words, from a resilience perspective Agta farming signifies strong adaptability, rather than weak transformability.

Viewing the Agta's adaptability as a central principle may similarly shed new light on their involvement in paid farm labour. I argued in Chapter V that instead of seeing this merely as symptomatic of the Agta's assumed state of near-servitude, we might alternatively view it as an opportunity which is taken when available and rejected when impractical. Some residential groups can flexibly engage in land labour without necessarily giving up on core foraging activities. The Diangu Agta, for instance, have such labour opportunities close at hand and shift between the land of neighbouring farmers, their own fields and the forest. The coast-dwelling Dimasalansan Agta use land labour as an option only when other, more attractive alternatives are limited; namely in the wet season when fishing, the core livelihood activity is difficult. The Disabungan Agta, however, do not engage in land labour at all. Living at considerable distance from non-Agta farms, engaging in land labour would require complete sedentism in unfamiliar areas with limited other options: a scenario which they avoid.

Trade, finally, is another means through which Agta have ensured the continuity of their foraging economy. The proto-Agta's engagement in trade of forest products has enabled them to maintain a hunter-gatherer mode of production despite the fact that their richest foraging grounds were converted into farmland by expanding Austronesian populations. This adaptation has earned them the label of 'commercial hunter-gatherers' (Hayden 1981; Headland 1986) and it still serves them today in responding to changing socio-economic situations. Indeed, the Agta widely engage in trade of both non-timber and timber products. I have suggested that a shift is taking place from what may be called 'supply driven' to 'demand driven' trade. In the former case Agta only trade whatever saleable surplus they generate from a foraging trip aimed at satisfaction of subsistence needs. In the latter case Agta trade all of their produce generated from a foraging trip aimed at satisfying a market demand. While supply driven trade is usually associated with long standing trade relationships with local residents (see Peterson 1978b), demand driven trade mostly takes place with partners from outside the local community.

Many authors have stressed the exploitative character of the resulting trade relations, emphasizing that Agta end up in debt spirals which tie them to their buyers, thereby increasing dependency. Exploitation and debt-bondage certainly occur, as we have seen in the context of demand driven trade of lobster, rattan and timber. At the same time, Agta deliberately maintain such relations in order to have access to credit and other forms of support. They select the most lenient trade partners, and if a relationship truly fails them they use what J. Scott (1985) has called the 'weapons of

the weak': they simply walk off. Similar strategies have been noted for the Cameroonian Bagyeli by Bahuchet (1992:241).

A remarkable aspect of trade is its relation with mobility. As Eder (1984:850) has pointed out for the Batak of Palawan, much mobility is in fact trade related. Obviously, the collection of trade produce from the forest or the sea requires considerable 'logistical mobility', that is, movements of individuals or small task-specific groups out from and back to a residential camp (Binford 1980:10, 18; Kelly 1995:117). But trade related mobility does not end here. While traders may visit Agta settlements to pick up the gathered produce, the Agta usually deliver their products to a selling point. Moreover, they often make separate trips to collect the payment or to obtain credit. We have seen that the latter is very often done by women.

Summarizing, Agta incorporate agriculture, land labour and trade into a flexible livelihood package in ways which conform to the needs of their foraging mode of production. In the process, they do not only maintain continuity despite ongoing change; they also show an ability to make the best of situations which are beyond their control. As described in Chapter III, among the most telling examples of this is the collection of scrap-metal, which has been left behind by logging companies. The Agta collect and trade this non-renewable resource as long as it is available, thus making part of their living from cleaning up the forest.

Kinship and internal variation

In choosing their livelihood package and the geographical range within which they shift between economic opportunities, Agta are both limited and facilitated by kinship. As M. Griffin (1996:3) points out, the Agta base their exploitation of resources on the availability and quality of social connections. With whom the Agta work is more important to them than what they do. They work as kinfolk and residing with non-kin is considered highly unattractive, and even potentially threatening (see also Headland 1987b:266). In other words, while Agta flexibly pick from a range of livelihood opportunities, they do so within the geographical bounds of their kinship network. Such regulation of access to resources through kinship or other social defence mechanisms is known to occur among virtually all documented foraging groups (Kuhn and Stiner 2001:106-7).

Agta recognize kinship bilaterally and through cognatic descent phrased groups, (M. Griffin 1996:187), which are largely synonymous to residential groups. As individuals can claim membership to more than one descent group, they can likewise reside with more than one residential group through their lifetime. As I outlined in Chapter II, I consider three larger kinship networks to exist within the Northern Sierra Madre Natural Park, each of which consists of several residential groups. These are the coast-dwelling kinship network, which covers around 700 people and includes the Dimasalansan residential group; the northern river-dwelling kinship network, which covers only about 220 people within the Northern Sierra Madre Natural Park, but extends north into Cagayan Province, and which includes the Diangu residential group; and the southern river-dwelling kinship network, which covers some 850 people and includes the Disabungan residential group (map 2.2). I demonstrated that although the boundaries between these kinship networks are permeable, in practice most residential shifts, most marriage and most economic activity take place within these boundaries.

This means that while each household first focuses on livelihood options available within the domain of the own residential group, it may also seek additional economic opportunities in the domains of other residential groups belonging to the same kinship network. We have seen that specific livelihood packages considerably vary between residential groups, depending on the local environmental, social and economic conditions. Some residential groups are better off than others: their range of choice is wider, or the options within the range are more attractive. But by flexibly moving between economic opportunities available within the kinship network's domain, Agta may offset limitations in one location by taking opportunities in another. This diversification of income generating activities through mobility and kin structures works as a risk reducing mechanism and thereby adds to resilience and adaptability.

Because of this, analysis of Agta subsistence strategies should take the geographical domain of the residential group as point of departure, but livelihood options within the larger kinship network's domain need to be taken into account as well. The three residential groups that featured centrally in the preceding chapters represent different economic situations. For instance, Chapter III demonstrated that returns from hunting and fishing vary between residential groups. A similar analysis of returns per hour can be made for other livelihood activities, albeit based on informed estimates and not on quantified observations. Table 7.1 gives the returns per activity in terms of monetary value per hour for each residential group. This is either based on a wage that is paid (in the cases of land labour and corporate logging) or on the payment Agta would receive if they were to trade a product (in the cases of meat, fish, timber, rattan, scrap metal or bird nests). Table 7.1 further distinguishes between core activities, which are carried out within one residential group's domain throughout the year; and additional activities which are only engaged in during part of the year, and/or by moving to a related residential group's domain within the larger kinship network.

While being unable to provide quantitative precision, this exercise reveals several general patterns. Clearly, the coast-dwelling Dimasalansan Agta avail over a larger number of subsistence options with relatively high returns per hour than their river-dwelling counterparts. Marine fishing, including commercial lobster fishing, gives much better returns than freshwater fishing. Moreover, the Dimasalansan Agta have a relatively wide range of additional options, some of which give exceptionally high returns per hour, notably the collection of bird nests. As Dimasalansan Agta have to travel for about an hour if they wish to perform farm labour, their returns from this activity are a little lower than they are among the Diangu Agta, who live adjacent to non-Agta farmers.

The most important commonality between the two river-dwelling residential groups rests in their low returns from freshwater fishing, with returns being lowest among the Disabungan Agta. With respect to hunting, in which they engage much more often than the coast-dwelling group, they get comparable returns, although the Diangu Agta exclusively engage in trapping, while the Disabungan Agta emphasize bow and arrow hunting. Both groups engage in non-corporate logging and rattan gathering, although these are core options for the Disabungan Agta and additional options for the Diangu Agta. Moreover, returns for both these activities are slightly lower among the Disabungan Agta, as they have to travel longer to deliver their products than the Diangu Agta.

In addition, the two river-dwelling groups differentially exploit a number of other livelihood options. While land labour forms a core activity for the Diangu Agta, this is no option for the Disabungan Agta. They, however sometimes find employment in corporate logging by moving to their relatives' watershed across the mountain range. This gives a steady monthly income which is comparable to land labour. Interestingly, it gives lower returns than non-corporate (illegal) logging. Moreover, the environmental degradation in corporate logging concessions results in extremely low returns from hunting and fishing. Some Disabungan individuals incidentally travel across the mountain range to collect bird nest, but this lucrative opportunity is not widely engaged in (see Chapter III). As table 7.1 shows, their returns from this activity are lower than they are among the Dimasalansan Agta, as the Disabungan Agta have to travel further to collect and trade their nests.

Table 7.1 Returns of livelihood options¹ per residential group in Philippine Peso (PhP) per hour

	Dimasalansan		Diangu		Disabungan	
	Core	Additional	Core	Additional	Core	Additional
Hunting	-	100 ²	12.5	-	14	-
Freshwater fishing	-	-	12	-	8	-
Marine fishing	18	-	-	-	-	-
Lobster	19	-	-	-	-	-
Commercial gathering						
- Bird nests	-	100	-	-	-	90
- Rattan	11	-	-	10	9	-
- Scrap metal	11	-	-	10	-	-
Corporate logging	-	-	-	-	-	12.5
Non-corporate logging	-	-	-	17	15	-
Farm labour	-	10	12	-	-	-
Average returns per hour in PhP	15	70	12	12	11.5	51

¹ Table 7.1 excludes subsistence gathering and farming for which returns per hour cannot be computed.

² As I explained in Chapter III, this figure is based on a small sample of hunting trips, and therefore probably shows an upward distortion.

In sum, comparison of the three residential groups' livelihood options shows the highest average overall returns per hour for the coast-dwelling Dimasalansan Agta, both with respect to their core livelihood activities and their additional activities. The two river-dwelling groups get similar average returns per hour from their core livelihood activities, but the Disabungan Agta may get higher returns from additional activities than the Diangu Agta. The Diangu Agta have one important advantage, however, which does not show from the analysis. This is farming. Although it is difficult to quantify returns per hour, Chapter V showed that the Diangu Agta get much better returns from farming activities than the Disabungan Agta.

How do these observations relate to the three residential groups' nutritional situation? The most important conclusion to be drawn here is that the coast-dwelling Dimasalansan Agta's diet is richest in animal protein, while the river-dwelling Disabungan Agta's is poorest in that sense. The Dimasalansan Agta ate animal protein at 79% of their recorded meals (n=90), the Diangu Agta at 41% (n=102) and the Disabungan Agta at only 26% (n=51). I suggest this is to be attributed mainly to the Dimasalansan Agta's better returns from fishing: they ate fish over 2.5 times as often as the Diangu Agta and nearly three times as often as the Disabungan Agta.

At the same time, the Dimasalansan Agta ate rice much less often, namely at only 18% of their recorded meals, in comparison to 58% for the Diangu Agta and 74% for the Disabungan Agta. This last observation suggests that the Disabungan Agta's permanent involvement in logging provides more regular availability of rice than the Diangu Agta's involvement in farming and land labour. Indeed, Chapter V showed that the Diangu Agta use much of their rice stocks as barter products in exchange for coffee, sugar and other commodities. Thus, their involvement in agriculture and land labour does not necessarily lead to more regular rice consumption. They don't stock their agricultural produce but use it the hunter-gatherer way: for immediate return purposes.

Can we relate variety in livelihood packages and diet to the Agta's health situation? The only available indicator we have in this respect is child mortality. Chapter II showed that of all Agta children born alive in the Northern Sierra Madre Natural Park, almost one third die before they reach puberty. This confirms Kelly's (1995:252-3) observation that child mortality among hunter-gatherer populations generally is very high. It is also in line with Baer (1999:3-4, 29-30), who finds that on Peninsular Malaysia mortality rates among indigenous children are much higher than among non-indigenous children. Indeed, based on national child mortality figures (Unicef 2007b), I demonstrated that an Agta child's chance to die before its fifth birthday is seven times higher than that of an average Filipino child.

If we recalculate these figures for coast-dwelling and river-dwelling Agta separately a clear picture emerges: child mortality rates among river-dwelling Agta (37%) are significantly higher than they are among coast-dwelling Agta (29%) (table 7.2). This raises questions regarding the relation between hunter-gatherer health, and forest and marine eco-systems (see Colfer 2008). Do the coast-dwelling Agta's better subsistence opportunities, and especially their higher intake of animal protein in the form of fresh fish, form an explanation for their lower child mortality figure? Is it to be attributed to their better access to medical facilities, most importantly their more frequent inclusion in vaccination programs through missionary organizations? Or is it the forest environment's widely dispersed resources, damp climate and high occurrence of certain forest-related diseases (Butler 2008:16-23; Persoon 2008:337; Bailey et al. 1989:61) that matter most? These questions deserve future attention.

Table 7.2 Child mortality among river-dwelling and coast-dwelling Agta in the NSMNP

	Total live births	Deceased children per age group					Total deceased
		<1	1-5	6-10	11-15	16-20	
River-dwelling	371	66	54	8	6	3	137 (37%)¹
Coast-dwelling	462	48	68	8	6	4	134 (29%)¹
Total	833	114	122	16	12	7	271 (33%)

¹ Differences significant at the 0.1 level (chi square).

Responding to social and environmental change

The three residential groups that featured centrally in this thesis are no isolated cases. From observations throughout the Northern Sierra Madre Natural Park it can be inferred that each of them is roughly representative of a larger Agta population. The Dimasalansan Agta fairly well represent the situation of the entire coast-dwelling Agta population in the protected area. The Diangu Agta's situation is comparable to that of most northern river-dwelling Agta residential groups, especially those on the eastern slopes of the mountain range. The Disabungan Agta, finally, have much in common with most southern river-dwelling residential groups, and especially those on the mountain range's western interior.

We have seen that each of these three residential groups, and the broader Agta populations which they represent, are differently affected by recent environmental and social change. As I have repeatedly demonstrated, the Agta residential groups on the mountain range's western interior have been most deeply affected by the combination of immigration and environmental disruption. Here, immigration has been most overwhelming and the impact of logging operations most irreversible and drastic. As a result, Agta populations have in the course of the past century abandoned their original living areas in lowland dipterocarp forests and shifted in uphill direction, into increasingly marginal foraging (and farming) grounds.

For river-dwelling residential groups on the eastern side of the mountain range the impacts of immigration and environmental disruption have been great as well, but less so than on the western flanks. On the eastern side logging has left considerable foraging space for the Agta. Moreover, it has created agricultural land which the Agta exploit alongside non-Agta. Also, fewer immigrants have stayed behind after the termination of logging operations than in the western interior.

The coast-dwelling Agta, finally, appear to be least affected by immigration and environmental degradation, although they too, have had to face numerous outsiders, and have allegedly almost abandoned hunting because of increased game scarcity. At the same time, however, they have been able to maintain relatively good returns from marine fishing and they have gained an important income generating activity: lobster

fishing. As Rai (1982:38) notes, coast-dwelling Agta are in that sense less dependent on forest resources than their river-dwelling counterparts and are therefore also less affected by their degradation. More generally, Adger (2000:353, 361) notes that communities that depend on coastal resources are considered relatively resilient because of the ecological resilience and diversity of coastal areas. It is however indeterminate whether these communities are inherently more resilient.

Continued expansion of non-Agta rural populations in combination with environmental disturbance have been central elements in previous alarming predictions of the Agta's cultural, or even physical disappearance. These elements are still present and will remain of great importance in the near future. Projections suggest that the non-Agta population in and around the Northern Sierra Madre Natural Park will continue to grow rapidly (table 2.6). In contrast, the Agta population, with its high mortality levels, is likely to grow only very slowly at best. The imbalance between Agta and non-Agta populations in and around the Northern Sierra Madre Natural Park will therefore further increase in years to come.

But even when immigration is overwhelming, it does not automatically follow that relations between Agta and non-Agta are problematic, and that Agta are reduced to mere servant hood as has been suggested (Headland 1986; P. Griffin 1991). This interpretation underestimates variability in hunter-gatherers' interactions with non-foraging peoples (Kent 1992:55). Chapter V demonstrated that relations between Agta and non-Agta may take various forms, ranging from strained and exploitative to pleasant, even intimate and mutually beneficial. Following Rupp (2003:38-9), I argued that the prevailing stereotyped images of such relations in the ethnographic literature on the Agta need to be replaced by more careful analysis of the nuances and variation that exist in these relations.

There is a similar lack of attention for micro-processes with respect to inter-ethnic marriage. Previous alarm raised over the increase of Agta women's marriage to non-Agta men has overemphasized the detrimental effects this has for the survival of Agta culture. It has been argued that such inter-ethnic unions result in the accelerated assimilation of Agta into mainstream Filipino culture, and therefore mean a decrease of the Agta population as a distinct cultural group. I have shown that the occurrence of inter-ethnic marriage in the Northern Sierra Madre Natural Park is relatively low: only 4% of Agta adults are married to non-Agta. Moreover, while these unions indeed most often involve marriage of Agta women to non-Agta men, the reverse certainly occurs as well. Most importantly, in contrast to general assumptions, most of these couples maintain close relations with the Agta population, many of them even permanently reside within it. They thereby provide important bridges between Agta and non-Agta communities and cultures. We have seen several instances in which Agta residential groups as a whole benefit from the opportunities that inter-ethnic marriage of one of their members brings them. These may include access to knowledge, materials and connections which can actually strengthen rather than weaken the Agta's cultural system by adding adaptability.

My emphasis on the Agta's resilience and adaptability is not to be misunderstood for naive optimism. The fact that the Agta are still here, does not mean that they are doing well. Quite the opposite: they face great problems. While I have shown that the Agta population of the Northern Sierra Madre Natural Park as a whole does not decrease, I also stressed that their demographic situation is far from

reassuring. Levels of malnutrition and mortality, especially among children, are very high. Furthermore, the Agta are a discriminated group, who largely fall outside Philippine society, as shows for instance from their low participation in formal education, and their complete absence from the local and supra-local political arena.

A problem that deserves particular attention is the fact that the Agta no longer are the main occupants of the commercial foraging niche, as is also the case for many Bornean hunter-gatherers (Endicott 2007:xiv). Not only do foraging grounds, especially among river-dwelling Agta, continue to become smaller; they are also exploited by increasingly large numbers of people. The Agta therefore increasingly compete with non-Agta, who may be busy farming most of their time, but engage in hunting, fishing, logging and the commercial collection of rattan, bird nests, and other commodities too. Thus, while competition between Agta and non-Agta is usually considered greatest with respect to arable land (Headland 1986:435), it is at least as important in relation to the exploitation of wildlife. As I will further discuss below, this problem persists despite legislative measures which were designed to counter it. Here the concept of panarchy is again useful. The Agta are much influenced by developments in the rural areas surrounding them and, as mentioned, because of their social organisation they are not well equipped to collectively act upon such influences.

THE AGTA AS INDIGENOUS RESOURCE MANAGERS

In what I called the tribal extinction paradigm in Chapter I, the combined effects of non-Agta population expansion and deforestation are held responsible for the Agta's predicted disappearance as a distinct cultural group. In this view, the only possible remedy is to end deforestation and simultaneously grant land rights to the Agta. While legislation has been put into place to respond to these needs, we have seen that it has thus far not had the desired effect. Despite the creation of the National Integrated Protected Areas System (NIPAS) in 1992, and consequently the establishment of the Northern Sierra Madre Natural Park in 1997, logging and other illegal forms of resource extraction are still widespread within park boundaries. Also, over a decade after the enactment of the Indigenous Peoples' Rights Act (IPRA) (1997) the Agta still do not legally own their ancestral domains. Not only have the NIPAS and IPRA failed to improve the situation, their weak implementation has given rise to additional problems and exacerbated existing ones.

The noble ecological savage's burden

The establishment of the Northern Sierra Madre Natural Park has so far not provided the nearly 1,800 Agta living within its boundaries with an improved natural environment. Being dependent on forest and aquatic resources for their sustenance, they are directly affected by resource degradation. They are worried about ongoing environmental destruction and have repeatedly called for environmental law enforcement (see Minter et al. 2005:50, 82). At the same time, government and non-government agencies use the Agta's concern with the environment to push them into a

role of conservationists for which they are not equipped. This puts the Agta in a predicament.

The idea that indigenous people are natural conservationists, which is a central element of the international indigenous rights discourse, is very much alive in the Northern Sierra Madre. Chapter VI provided examples of perceptions of the Agta as noble ecological savages held by the government and civil society. These perceptions are certainly partly justified. The Agta's concern with the natural environment on which they depend was already mentioned. This sometimes results in deliberate avoidance of destructive resource practices, such as the rejection of snare trapping by the Disabungan Agta. More generally, the Agta's present resource extraction methods often are relatively extensive and small in scale. Also, Agta have detailed knowledge of their environment, and are well aware of the relationships between human action and disruption of ecological functions and resource depletion. Moreover, their cosmology poses ideological restrictions on their resource exploitation practices, most notably with respect to game and fish. Greediness in terms of environmental exploitation is explicitly disapproved of (see Doornbos 2008:47-56; Minter, Goslinga and Persoon 2007:14; Rai 1985:40).

Valuable as these traits are, they do not make the Agta conservationists. As Kelly (1995:156-9) and Hames (2007:180-6) note, the tendency to read a conservation ethic in indigenous culture sometimes leads to misinterpretation of cultural practices. This applies to the Agta as well. An example is the *gaygay*, which involves temporary closure of a watershed area for resource extraction. This practice has been described as a conservation measure, and NGOs have recommended for its revival for conservation purposes (Magaña 2000:53-4; Antolin 2000:85, 98). But as Chapter II has demonstrated, the *gaygay* is an institution primarily related to death and burial. The resource restrictions it poses can be evaded by paying fines to the bereaved family and therefore any effects the *gaygay* may have on resource conservation are likely limited.

Even when Agta cultural values explicitly favour careful resource use, in the absence of real social sanctions against overexploitation, they are not synonymous to conservation measures (Eder 2005:300; Rai 1985:38-9). Pragmatism generally prevails over ideology. This is most clearly illustrated by river-dwelling Agta's involvement in logging. Similar observations can be made in relation to the coast-dwelling Agta's overexploitation of lobster, unsustainable trapping practices by some river-dwelling residential groups, the over-harvesting of rattan, and possibly of bird nests too. Especially under circumstances of increasing resource pressure and competition with non-Agta, Agta prefer to get their share of the pie before it is too late.

But these complex realities are ignored by policy implementers in the Northern Sierra Madre. The image of the Agta as stewards of nature is reproduced time and again. Behind this image is the assumption that the Agta live a 'simple' life; simple meaning 'backward' in the negative sense and 'close to nature' in the positive sense. Ellingson (2001:354) rightly warns us that the creation of exaggerated images of indigenous peoples, be they negative or positive, may have political repercussions. The noble ecological savage stereotype definitely is not as naive as it seems. It serves those who are responsible for environmental law enforcement. By pushing the Agta into a role of forest guardians, government agencies, most notably the Department of Environment and Natural Resources (DENR), put the weight of their own responsibilities on the Agta's shoulders. They thereby burden the Agta with tasks for

which they are not equipped, not trained, not authorized, and not compensated. By continuously emphasizing the Agta's role in stopping illegal logging and other forms of resource destruction, government bodies mask their own lack of political will to enforce the law.

The malfunctioning Protected Area Management Board (PAMB) is a case in point. While the Agta members to this board theoretically have a large say in what happens within the Northern Sierra Madre Natural Park, in practice their voices are not heard. This is partly due to the logistical and communicative difficulties associated with effective participation of an uneducated, discriminated, indigenous stakeholder group. These are difficulties that may be overcome if there is willingness to do so. But it also reflects the lack of political will to seriously implement the park management plan. So far, the Agta's repeated efforts at putting law enforcement issues on the agenda of PAMB meetings have been effectively ignored by more powerful entities. It is simply made impossible to speak about these issues. However, as Alcorn et al. (2003:300) point out: '[...] if the political system is closed to participants who want to modify institutions in response to negative ecological feedback, then, during crises, ecological resilience will diminish until the system flips. Resilience depends on a vibrant political life in which multiple interests participate.'

The Agta's plea for strict environmental law enforcement raises both insights and dilemmas with respect to indigenous people's position within protected areas. The most important insight is that rather than opposing it, indigenous people may actually wish for and benefit from such law enforcement. The dilemma, then, is what this legislation should entail. I will here illustrate these points.

There has been widespread and legitimate criticism of the injustice done to indigenous populations in the context of top-down, centralistic conservation schemes (see Colchester 2003; Chapin 2004). Participatory planning, co-management and social fencing are the most often cited alternative conservation strategies. And yet, the case of the Northern Sierra Madre Natural Park shows that the Philippines' 'people first' approach in conservation has not yielded the desired results. The many livelihood programs, awareness campaigns and capacity building projects that NGOs and government carried out over the past decade have not succeeded in countering environmental threats. Elsewhere in the Sierra Madre, community-based resource management programs have likewise failed. Most notorious are community-based logging schemes, which are sometimes part of ancestral domain management plans. For instance, Aquino (2004) has documented how selective logging in the Bugkalot ancestral domain in Quirino Province failed both ecologically and socially (see also Tarun-Acay 2003; Leemoon 2002). In early 2004, all Community Based Forest Management Agreements were suspended because of their unsustainable management.

At least two problems underlie this failure. First, proposed management schemes, well-intended as they may be, are often highly complicated and therefore incomprehensible for park residents, and often for park managers too. This shows from the Agta's lack of awareness and understanding of park rules and regulations, the zoning system in particular, as presented in Chapter VI. Second, these management schemes are not implemented (van der Ploeg, van Weerd and Masipiqueña forthcoming). Chapter IV showed that local officials justify this lack of law enforcement by calling it 'humanizing the law'.

Only recently has awareness begun to grow among some segments of government that ‘humanizing the law’ may actually harm rather than benefit local livelihoods. I have suggested in the foregoing that there may be a direct link between the Agta’s health and demographic situation on the one hand and the state of forest and aquatic ecosystems on the other hand. There are wider humanitarian risks. Thousands of people on Luzon and in the Visayas have been buried alive in recent years as logged-over hillsides collapsed after heavy rainfall. In response, the provincial government of Isabela has in mid-2008 started a campaign against illegal logging in the Northern Sierra Madre Natural Park, which attracted broad attention from national and international media.¹⁴⁰ Interestingly, the campaign only concentrates on the confiscation of illegally cut timber and the capture of timber buyers and logging financiers. The rural workforce that produces the timber, which as we have seen includes Agta, faces no charges.

All this suggests that local populations in general and the Agta in particular, may actually benefit from strict environmental law enforcement, provided that the law is a legitimate one. And here is the dilemma. For how fair are the Northern Sierra Madre Natural Park Act and the park’s management plan? Certainly, strict law enforcement will bring the Agta an improved environment. But, being poorly aware of the park rules, what the Agta do not foresee is that it will also considerably curtail their economic freedom. All Agta settlements on the western side of the mountain range, and many on the eastern side are situated in the park’s strict protection zone. Within this zone Agta are allowed to extract resources, but on the important condition that they limit themselves to ‘traditional’ resource practices (DENR 2001a:73). This restriction raises operational and ethical concerns (Layton 2001:311; Persoon and Minter forthcoming).

No culture is historically static and the Agta have added new wildlife exploitation methods to existing ones. These include the use of shot guns, snare traps, fykes, nets and in exceptional cases blasts. Moreover, ‘traditional’ hunting and fishing tools continue to develop as well and contain a mix of elements in which it is usually impossible to discern traditional from non-traditional ones. Examples are the introduction of goggles and torches, which widen fishing possibilities and increase fishing success. Also, although the Agta have been historically involved in the trade of forest and marine products, their commercial extraction is often misinterpreted as ‘non-traditional’ by NGOs and government agencies. Thus depending on how the law is interpreted, in the worst case scenario, it could pose unethical restrictions on the Agta’s ability to self-determine the direction in which their socio-economic system will develop in the future. I will get back to this issue below as I will relate the Agta’s situation to that of other indigenous peoples inhabiting protected areas.

Failing ancestral domain policy

In addition to halting deforestation, a second central recommendation emanating from the ‘tribal extinction paradigm’ has been to secure the Agta’s land rights. While the IPRA was designed towards this end, over a decade after its enactment the Agta still

¹⁴⁰ For an overview of media reports on this subject see www.illegal-logging.info.

hold no legal ownership over their ancestral domains. The institutional and practical problems affecting the IPRA's implementation in the Northern Sierra Madre were already discussed in Chapter VI. Here I wish to raise several additional concerns which will be of future importance should implementation of the law eventually occur. These are the NCIP's choice of ancestral domain boundaries and its disregard of the importance of relations between Agta and non-Agta.

In the NCIP's most recent proposal the Agta of the Northern Sierra Madre Natural Park will be granted one large title, covering an estimated 250,000 ha of continuous land and marine area (NCIP 2007). This would be twice the size of the largest ancestral domain title issued so far, that of the Bugkalot of Nagtipunan in Quirino Province (NCIP 2005:8). As I briefly mentioned above, however, the Bugkalot domain suffers from severe mismanagement and has so far failed to provide its claimants with social and economic benefits, let alone that the environmental objectives were met. The main reasons for this failure are the great size of the area covered by the awarded domain title and the lack of a coherent social unit to properly manage that area (Aquino 2004:323-5). Covering an area twice the size of the Bugkalot domain, the proposed domain title for the Agta will certainly generate similar problems.

To begin with, the selected area does not reflect the Agta's real ancestral domain and therefore no social unit is in place to manage it. The NCIP's argumentation for selecting this area is unconvincing. On the one hand, the commission states that the Agta use the entire Sierra Madre Mountain Range as their hunting and fishing grounds. On the other hand, it limits the boundaries of the ancestral domain title to the Northern Sierra Madre Natural Park, which only covers a fragment of this mountain range. This inconsistency underscores how the NCIP is caught between complex local realities and the pressure to meet national targets, with limited financial and personnel resources (van Velthoven 2004).

The NCIP claims that it is not the commission itself, but the Agta who have proposed for this approach (NCIP 2007:3). In contrast, Agta throughout the protected area say that the NCIP has convinced them of the advantages of a large title, as the processing of several smaller title applications would cost too much time and money. Having been promised formal ownership of their ancestral domains for over a decade now, the Agta would rather take this opportunity, for no other may arise. At the same time they are concerned about the implications, particularly about their ability to manage such a large domain and about the need to work together with Agta groups whom they don't know.

This last issue pinpoints the main problem underlying the NCIP's proposal: it is based on misconceptions regarding the Agta's settlement patterns, kinship system and resource use. Contrary to popular opinion, the Agta do not have free access to hunting and fishing grounds everywhere in the Sierra Madre. Instead, access to resources is granted based on kinship connections. Based on these observations, it is unadvisable to choose the boundaries of the Northern Sierra Madre Natural Park as ancestral domain boundaries, as the NCIP proposes. This large area covers the domains of three wider Agta kinship networks, relations between which are not only limited but also strained. Moreover, Agta have little interest in defending territories that are beyond the own kinship boundaries, for they are unlikely to gain access to it anyway. The Agta

population of the Northern Sierra Madre Natural Park can therefore not form a viable management unit.

The largest possible area suitable for ancestral domain delineation would be the area covered by one kinship network. It is within this area that individual Agta hold resource use and settlement rights, and they therefore have a collective interest in managing it. Such an approach would allow for mobility, while it also makes use of a social structure larger than the residential group alone. Obviously, these domains' boundaries would not run parallel to the protected area's boundaries, or to any other administrative boundaries. Instead, they would partly overlap with and partly fall outside the Northern Sierra Madre Natural Park and Isabela province. Such a domain could then be managed based on detailed, small-scale management plans, much like those earlier proposed by the NGOs PLAN and NORDECO (Chapter VI). The importance of micro-level planning is especially great where relations and arrangements with non-Agta residents are concerned.

This brings us to another weakness of the NCIP's approach: its disregard of the wider societal context. Chapter VI demonstrated that municipal administrations, their non-Agta constituents, and as a consequence their Agta constituents too, are increasingly uncomfortable with the NCIP's way of work. This lack of support will evidently be detrimental to the final outcome. Each Agta residential group is in daily contact with a local non-Agta population. Not only do they maintain trade relations, the area that is included in the envisaged ancestral domain title is inhabited and exploited by large numbers of non-Agta. A thorough and unbiased analysis of relations between Agta and non-Agta should be at the heart of any ancestral domain management plan for at least three reasons.

First, interactions with non-Agta are important in understanding the Agta's trading and marketing opportunities. Seeing the Agta as living in isolation from such market channels will not benefit ancestral domain management. Making similar observations for the Batak and Tagbanua of Palawan, McDermott (2005:325) argues that these indigenous communities are not helped by merely emphasizing the boundaries of their domains. The pathways of exchange crosscutting these boundaries matter as well.

Second, understanding these inter-ethnic relations is crucial for effectively managing access of non-Agta to Agta ancestral domains. At present, no such regulation mechanisms are specified. Like other government agencies, the NCIP assumes that the Agta themselves will effectively arrange for such regulation. As previous chapters have demonstrated however, the Agta are generally unsuccessful in convincing trespassers to withdraw. Having a title to show might be of help here, but without being backed up by an effective support system, it will not change the situation. This problem will only grow given my earlier observation that the Agta's commercial foraging niche is increasingly co-occupied by non-Agta.

Third, and most urgent, the NCIP's claim to vast territories fuels rather than diminishes inter-ethnic tensions. The risks are great. Agta and non-Agta have been living together under often precarious conditions and their co-habitation is a balancing act. Where injustice is done to the Agta, they are not aided by a quick fix approach. What is needed here is long-term and genuine interest and diplomacy.

The Agta case in a wider perspective

As shows from the wealth of case studies on indigenous peoples' position in protected areas (see Kemf 1993; Colchester and Erni 1999; Nelson 2003; Gray, Newing and Parellada 1998; Persoon et al. 2004), the Agta's situation is all but unique. By briefly putting their case in a wider perspective, I will demonstrate that many of the problems faced by the Agta likewise pertain to other indigenous peoples in general and hunter-gatherers in particular, both within and outside the Philippines.

Tebtebba (2008) concludes that indigenous populations throughout the Philippines are poorly informed on the presence and implications of protected areas in their living areas. It also notes the ineffectiveness of indigenous participation in Protected Area Management Boards (PAMBs). As in the Agta's case, this is due to a combination of financial, logistical, educational and communicative constraints (Tebtebba 2008:9, 18; Novellino 2007:201). Existing power structures provide another common problem: indigenous PAMB members often find themselves at the whim of powerful opponents (Bryant 2000:690). Moreover, in spite of the establishment of protected areas and the implementation of conservation programs, illegal resource extraction, notably logging, continues at the expense of indigenous peoples' livelihoods (Tebtebba 2008:30).

The strategies and impacts of conservation programs likewise show commonalities throughout the country. Most apparent are these programs' efforts at turning mobile hunter-gatherers into sedentary farmers as part of alternative livelihood projects. For instance, Novellino (1999:284; 2007:196, 208-9) reports how conservation agents have in the 1990s unsuccessfully attempted at making the Batak of Palawan take up permanent agriculture, despite similar failed attempts by PANAMIN in the 1960s. Another recurring aspect of conservation interventions is their contribution to polarization of inter-ethnic relations, by maintaining simplified and prejudiced perceptions on hunter-gatherers' presumed subordinate position vis-à-vis others (Novellino 1999:286; 2007:189).

The Agta's disappointment with the IPRA appears equally representative of the larger situation. Countrywide, the titling of ancestral domains proceeds slowly, especially where these overlap with protected areas (Tebtebba 2008:15; Novellino 1999:279). Moreover, once titling occurs, major new problems arise. As Leonen (2007:36-7) points out, this is because no concrete mechanisms for the IPRA's implementation are spelled out beyond the process of gaining paper recognition of lands and domains. The implicit theory is that '[...] as long as rights to ancestral domain are *officially* recognized by government, the rest (political and economic empowerment) will follow or can be catalyzed'. Also, the IPRA fails to address the deeper underlying problems, notably power imbalances (McDermott 2005:328-9), that gave rise to indigenous people's disadvantaged position in the first place. Thus, despite the high expectations that accompanied its enactment in 1997, the IPRA has offered little relief (Leonen 2007:36), whether it is for the Agta or for other indigenous populations.

Latin America is the only other region in the developing world with relatively well developed indigenous rights legislation. There too, implementation problems arise. While Brazilian indigenous peoples legally own their traditional lands, which

together cover around 21% of the entire Brazilian Amazon (over 1 million km²), these territories continue to be illegally exploited for timber and mineral resources by non-indigenous groups. As in the Philippines, indigenous inhabitants lack the resources for surveillance and enforcement (Schwartzman and Zimmerman 2005:722-3).

In Colombia, indigenous territories are recognized as collective property which is to be governed in accordance with indigenous customs (Hoekema and Assies 2000:71-2). Although any national parks that are established on these *resguardos* should benefit the indigenous population and respect their presence and resource extraction practices within the park, these prescriptions are not always adhered to. In some cases indigenous communities have been forced to leave, while in other cases resource restrictions were imposed. These failures have resulted in recent policy shifts of the Ministry of Environment towards improved involvement of indigenous communities in park management (Persoon et al. 2004:71-2, 80-1; Hoekema and Assies 2000:253).

Throughout the region we again see the tendency towards the disallowance of so-called non-traditional activities. For instance, the Aché foragers of Paraguay hold permanent use rights in the Mbaracayu Forest Reserve, but for traditional subsistence activities only (Hill and Hurtado 1999:95; Hill and Padwe 2000:84). Likewise, Holt (2005:200-1) shows that conservationists view the Huaorani of Ecuador as sustainable resource users only for as long as they have low population densities, simple technology and a subsistence oriented economy.

In most of Southeast Asia and Africa, the concept of indigenous peoples is politically controversial and indigenous peoples' legislation is therefore usually absent (Persoon et al. 2004:1). For instance, PACOS (2008:4) reports that the Peninsular Malaysian government '[...] accords almost no recognition of indigenous land or laws at all'. Lye's (2002:171-2) observation that the Batek's presence in Taman Negara, a 4,343 km² protected area '[...] is treated as a problem at best', illustrates this point. Park regulations do not contain any provisions regarding these hunter-gatherers and the Batek are not assigned as active park personnel or partners in management. Their only role in the park is as providers of information about wildlife, trails and scenic places (Lye 2002:174).

At the same time, throughout Malaysia authorities are reported to take a pragmatic stance towards indigenous peoples' presence in protected areas. Even though regulations usually prohibit settlements inside parks, and several cases of relocation are known, in practice forest dwellers mostly continue living within park boundaries. On Sabah, in the Crocker Ranger Park, further steps are taken. Since 2007, the designation of a zoning system is under way, which acknowledges forest communities' resource use rights and gives them management responsibility. Yet, PACOS (2008:8,11) notes a lack of political will to actively implement the scheme, for fear that indigenous communities may overrun state priorities.

In Africa, despite the general absence of indigenous rights legislation, since the 1980s there is increasing attention for indigenous peoples' issues through a fast developing grassroots movement (Waehle 1999:269-70; Persoon et al. 2004:127). Conservation practices range from oppressive to modestly participatory. In some countries environmental legislation prescribes that local communities are central actors in resource management. In practice, however, especially among hunter-gatherers, who

have a very low social status, such participation is minimal and merely symbolical (see Zaninka 2003:174-8).

In several Central African protected areas with a colonial history, forest hunter-gatherers' presence was long tolerated in spite of regulations to the contrary, until these areas' more recent proclamation as national parks. For instance, while Campo Ma'an in south-western Cameroon has been a forest reserve since 1932, the Bagyeli's access to resources was only seriously restricted with its declaration as a national park in 2000. The park's designation followed as environmental compensation project for the Chad-Cameroon oil pipeline. Within park boundaries, resource extraction, even for subsistence purposes, is now strictly forbidden (Jackson 1999:284; Persoon et al. 2004:134; Owono 2003:247, 251-3). Similarly, the Batwa (south-west Uganda) had officially been denied access to forest resources since the creation of various forest reserves by the British colonial government in the 1930s, but continued to live and extract resources there. Only after the establishment of two of these reserves as the Bwindi and Mgahinga National Parks in 1991, the park authorities can and do forcibly exclude the Batwa from the forests (Zaninka 2003:170, 182).

The situation of the Baka of south-eastern Cameroon, also hunter-gatherers, represents a different approach (Hattori 2005; Ndameu 2003) which shows many similarities with the Agta case. In the design of a forest conservation project that was launched in 1998, the Baka are expected to play an important role. One of the key features of the conservation project is the designation of zones that allow for differentiated resource use. Hattori (2005:41-2), however, points out that the proposed zones and the matching regulations are incompatible with Baka resource use. The design prohibits settlement in some of the Baka's main residential areas and promotes sedentarization. Hunting and fishing become illegal acts in their core hunting and fishing grounds, while they are only allowed for subsistence purposes and by traditional means in other zones. Moreover, environmental education provided by the project implementers does not effectively reach the Baka due to cultural insensitivities. For instance, meetings are held away from Baka settlements in non-Baka villages and in a language which they poorly understand (Hattori 2005:46-9).

Several common problems arise from these examples. First, even where indigenous peoples are explicitly accorded a role in protected area management, their functional participation remains problematic. This is often due to basic problems regarding communication, finances and logistics. Hunter-gatherers appear particularly vulnerable because they form the least empowered, least organized, least understood and, probably therefore, least respected indigenous populations in any country. Management plans designed towards hunter-gatherers' improved participation are especially prone to cultural and economic insensitivities. This shows from the perseverance of policies aiming at turning mobile hunter-gatherers into sedentary farmers. The plans also commonly display a lack of understanding of hunter-gatherer livelihood packages by forcing a non-existing dichotomy between traditional and modern, as well as between subsistence and commercial oriented resource use. Also, hunter-gatherers everywhere carry the burden of their noble ecological savage reputation. Park management plans often assign a role of substitute law enforcers to protected areas' foraging inhabitants, the problems surrounding which I already discussed.

At the same time, there is scope for improvement. It cannot be denied that in as far as indigenous legislation exists, it merely has symbolic value. But it could well become of more significant importance if there is political willingness to make it work. In the Philippine case, a first step would be to focus less on the contradictions that may be present in existing legislation, and concentrate more on how laws reinforce each other. As Chapter VI showed, the alleged disharmony between the IPRA and the NIPAS is often used as an excuse for lack of implementation. Bryant (2000:699-700) claims that the ancestral domain titling system is ideologically 'at odds' with protected area legislation.

Having the case of the Agta and the Northern Sierra Madre Natural Park in mind, I am convinced that there is much less ideological opposition between the IPRA and the NIPAS than is often suggested. One significant shared interest concerns immigration. The NSMNP Act forbids further immigration into the Northern Sierra Madre Natural Park and even speaks of withholding settlement rights to people who have lived there shorter than five years prior to the park's establishment. This thus addresses an often cited problem: the continued encroachment of non-Agta populations in Agta ancestral domains.

More importantly, the Agta would greatly benefit from environmental recovery and it is for this reason that they have called on government to enforce the law. While implementation of already existing legislation indeed is the only way forward in the Northern Sierra Madre Natural Park, I have also indicated that this poses a need to make sure that the law is interpreted fairly. Some of the above presented examples, notably from Africa, should serve as a warning that there is always a risk that human rights are violated in the context of protected areas.

For all its faults, at least Philippine contemporary forest conservation approaches have respected local communities' dependence on forest resources. In the context of the Northern Sierra Madre Natural Park, this sensitivity shows, among other things, from the way the NSMNP Act is interpreted in the park management plan. The Act states that in the park's strict protection zone Agta are allowed resource extraction for 'ceremonial' use only; but this has been considerably broadened to 'sustainable, traditional and non-commercial' resource use in the park management plan. Yet, even these conditions might limit the Agta's economic opportunities to such an extent that it will become impossible for them to sustain themselves.

This is mainly because the Agta, like many other indigenous peoples, depend on extraction methods that cannot all be classified as fully 'traditional' or fully 'subsistence-oriented'. I therefore suggest that the main criterion for defining which practices are allowed should be whether or not they are sustainable, as indeed is the third condition on which the Agta are granted resource use rights within the park. After all, an extraction method in itself cannot be labelled sustainable or unsustainable; what matters is how it is employed. That is, hunting with bow and arrow is not necessarily more sustainable than hunting with shotguns, or traps. The solution could then be to participatory design detailed rules and monitoring systems that ensure sustainable wildlife extraction. As previous initiatives by the NGOs PLAN and NORDECO to draft ancestral domain management plans have shown, there is much potential for such an exercise.

CONCLUSION

Ethnographies usually end with a look into the future. I will provide no such prediction here, mainly because in retrospect these forecasts are rarely valid. As Lye (2004:173) notes in her ethnography on the Batek of Peninsular Malaysia: '[...] pathways of change cannot be predicted. People respond to new opportunities for different reasons and in different ways.' Indeed, if all alarming predictions on the Agta's future would have proven right, they would have gone extinct long ago. As I showed in Chapter I, there has been fairly little reflection on the fact that they have not. The few available accounts that do express some confidence in the Agta's ability to cope with ongoing change (M. Griffin 1996:15, 58-9; P. Griffin 2002:41, 44-5) provide no real counterweight to the general tendency to declare Agta culture destined for extinction.

I see three main possible causes for this persistent pessimism. One is that some ethnographers' long-term involvement with Agta society has made them the witnesses of such overwhelming change that it has unavoidably shaped their views towards pessimism. When faced with the magnitude of logging and mining operations, it is not easy to keep an eye out for the subtle signs of cultural resilience. A second factor which may influence one's view is the size of the study population. As Kent (1992:54, 61) notes, anthropologists' tendency to focus on one relatively small research group and then extrapolate findings to the larger population blinds us for the importance of internal variability. This variability helps us to put things in perspective, and improves our understanding of why situations differ from place to place. Last, predictions have undoubtedly (and understandably) been made deliberately grim, even if authors expected reality to be somewhat less bleak. In that case, the alarming forecasts were not primarily aimed at validity, but at bringing the Agta's situation under the attention of the broader public, most notably policy makers and implementers.

One might argue that the reason that the Agta are still here is precisely because of the attention these predictions have raised. However, I have demonstrated that any policy interventions that may have sprung from them, have far from reached their objectives. Although I absolutely support the need for raising wide public and political attention for the Agta's situation, I see risk rather than strength in such alarming predictions. As with any doom scenario, there is the potential danger that if forecasts repeatedly turn out to be invalid, the problem is considered to be exaggerated and consequently attention is lost.

A further reason for cautiousness is that the alarming forecasts often depict the Agta as mere victims of external change. They invariably emphasize the dominance of external forces, while they rarely focus on the ways in which these forces are negotiated. However, in the words of Anderson and Ikeya (2001:2) despite the great changes affecting them, the Agta are not 'defenceless before the 'world-system'. [...] Through ritual, tacit understandings, or the 'weapons of the weak' [...] [they] can continue to project an unbroken identity even in situations where their health and economy are threatened by poverty and their language may be lost or creolised'.

In this dissertation I have demonstrated that the Agta's hunter-gatherer mode of production persists in spite of the changes it undergoes. The question therefore is not so much whether change takes place, but how we should assess it (Endicott 1979a:vii; Bird-David 1988:29-30). This brings us back once more to the distinction between resilience and adaptability on the one hand versus transformability on the other hand.

Several authors are convinced that the Agta are presently undergoing, or have even already completed, a radical transition from foraging to non-foraging (Early and Headland 1998; Rai 1990). This implies a situation in which one system is no longer tenable and therefore has to be replaced by another one, with a completely new set of rules and variables. Like M. Griffin (1996) and B. Griffin (2002), however, I do not see the change that the Agta are presently undergoing as necessarily leading to such a transformation. Instead, I see it as adaptation, without it undermining the Agta's system as a whole.

In that view change does not necessarily result in deculturation and landlessness. Indeed, '[a]cculturation is situationally varied, and in the context of adaptation contact and autonomy are not mutually exclusive; not being pristine does not mean being degraded and encapsulated' (Bicchieri 1990:123). It is this variability which I have wished to emphasize and which appeared in different forms in previous chapters. First, we have seen that the social, economic and environmental circumstances under which Agta operate considerably differ per location. The scale and intensity of environmental disruption and immigration, and the intensity of competition over natural resources with non-Agta vary from place to place, although they are relevant factors everywhere. Second, there is considerable variation in relations between Agta and non-Agta. These may range from tense and exploitative to amiable and mutually beneficial.

In addition to variability in the Agta's relations with external actors and forces, I have stressed internal variability. The Agta's own social environment is not as homogenous as has often been suggested. I therefore disagree with the claim that the Agta of North Luzon form a 'single network' (Early and Headland 1998:59; M. Griffin 1996:3) and that a classification of various Agta sub-groups is 'not useful' (M. Griffin 1996:58). Communication lines, collective action and organization are mostly limited to groups of closely related people that form only part of the entire Agta population. In understanding the Agta's current challenges, most notably resource scarcity, it is crucial to take these internal divisions into account. At present, academics, policy makers and politicians lack understanding and recognition of these internal divisions. Among other things this leads to the incorrect public perception that the Agta randomly wander throughout the Sierra Madre. The practical consequence of this is that they are either considered not to have any territory at all (see also Layton 2001:312), or alternatively, that the entire mountain range is their territory. As we have seen, neither of these views is helping the Agta to control land and other resources.

In fact, none of the interventions designed towards this end have thus far yielded success. On the brighter side, the recent switch in environmental law enforcement practices by the provincial government of Isabela shows that at least among certain segments of the political spectrum there is willingness and capability to turn the tide. More generally, the current provincial administration's readiness to listen will hopefully benefit the Agta. After all, any effort at development planning should be based on elements that are already present within their socio-cultural system. Development planning should not aim at turning the Agta into something different, thereby making them more vulnerable. Instead, it should increase their resilience by taking existing cultural foundations, such as economic and residential flexibility, as a basis for autonomous development. For the Agta's flexibility is among their greatest assets.

APPENDIX: METHODOLOGY

INTRODUCTION

As mentioned in Chapter I, data for this study were collected using two complementary approaches. First, a socio-economic survey was conducted among the entire Agta population within the Northern Sierra Madre Natural Park. This survey included a house to house census, a livelihood inventory and qualitative ethnographic research. Second, based on this survey, three Agta residential groups were selected for in-depth research, which combined qualitative and quantitative research methods. This involved data collection on time allocation, hunting and fishing success, agricultural production, trade, nutrition, and ethnography. Field data were complemented with two main additional sources of information. Namely, secondary data, obtained from government and non-government offices; and a five-day workshop that took place in mid-2005 in which 68 Agta households from throughout the study area participated.

In between field trips I processed the collected data in the CVPED office. I kept my qualitative notes in a total of 19 notebooks that were organized by area and fieldtrip. I manually encoded my notes by subject and during the writing process I regrouped them into themes to be covered in the various chapters. In addition, several types of quantitative data were collected on separate recording sheets designed for each particular purpose. With the assistance of my interpreter-assistant Maria Ranay-Pedrablanca, these were processed and continuously updated in simple Excel data bases. The results presented in this study are thus derived from various data-sets. Some of these were mainly compiled during the socio-economic survey in the entire protected area, and others during the in-depth studies in three selected Agta residential groups. Here I will elaborate on each of them.

Census

The most basic aim of this research project was to find out where the Agta of the Northern Sierra Madre Natural Park live and with how many they are. To this end we conducted a census of all Agta settlements, households and individuals in the protected area between early 2003 and mid 2005. Criteria for inclusion of each settlement were its geographic location within or on the park boundaries, and/or dependence on natural resources present within the park boundaries. We spent surveying the western side of the park in 2003 and 2004, while the Pacific side of the mountain range followed in 2004 and 2005. The location of each Agta settlement was determined using a GPS Garmin 500. The resulting records were processed by GIS expert Koen Overmars using the software ArcView, and made into map 2.2. Charlie Minter refined this and all other maps presented, using Adobe Illustrator.

We started our visit to each Agta settlement by listing the various households that were living there at the time of research. In the day(s) that followed we aimed at interviewing each of these households. We used a structured interview format that was

improved several times to collect data from every household then inhabiting a certain Agta settlement. I defined the household as the social unit sharing a hearth (which usually implied they also shared a roof). Interviews were conducted with one household head or both household heads together. The data gathered included the names, sex, birth places, marital status and present location of all household members. It further included vaccination data for the couples' children and an age assessment for each household member.

A major problem in collecting census data among Agta is that they do not know their ages. Early and Headland (1998:66) have solved this problem by creating a local calendar with a memorable event for each year, by which ages can be determined. I have tried using this method, but found it impossible to get the calendar sufficiently filled in as informants could not think of enough events and mixed up various typhoons, names of local mayors and other occasions that could have served the purpose. I therefore decided that age-estimation was the next-best option. I am aware that this is a highly subjective method which is prone to considerable error. I do not wish to suggest accuracy and thus worked with age-categories of five years. As parents were able to say whether their child was younger or older than one year, the chosen age categories were 0-1, 1-5, 6-10, and so on.

After I had overcome initial hesitation we included questions on deceased household members, and children in particular. It turned out that so many households had lost one or more of their children, that the subject revealed itself as a major issue that could not be avoided. Moreover, many parents actually seemed willing, instead of reluctant to talk about their losses. For each deceased child we tried to list the age at death, the cause of death and the place of death.

We further combined the census interviews with questions on kinship. For as many adult household members as possible, we traced the names of their parents and siblings, as well as these people's place of residence in as far as they were still alive. This was a laborious, but very exciting exercise, for by repeating it wherever we could kinship structures throughout the park increasingly revealed themselves. Not only did this later turn out to be of analytical importance, it also enabled us to tell our respondents that we had spoken to their sister, brother, aunt or cousin several weeks ago in this and that location. This generated fun and trust.

Mobility was another topic that was often included in the census interviews. We asked our informants to give us the names of places where they had lived and what had been reasons to move to and from certain locations. In combination with information on birth places and burial sites of deceased relatives, this gave us a good impression of the geographical range within which informants are settling and the drivers of mobility.

Not all individuals listed in the census were actually encountered during our stay in a certain settlement, as some were temporarily absent. If possible we tried to collect the desired data through relatives, but if this did not generate trustworthy information we only listed the name and sex. If a certain individual was later encountered on another location, he or she was removed from the census of the earlier visited settlement. Individuals were thus enumerated for the settlements where they were last encountered.

In defining who is Agta and who is not, I followed M. Griffin's approach (1996:39) in which non-Agta spouses of Agta, either male or female, are not recognized as 'Agta' but their children are. This is because despite these children's

mixed descent, they grow up as Agta and are viewed as such by their kinsmen. The situation was different for the few instances in which Agta live outside Agta settlements in village centres. These people were traced as much as possible. In case they were married to other Agta, the whole household was included in the census. However, if they were married to non-Agta and permanently resided outside the Agta community, the Agta spouse was included in the census, but the non-Agta spouse and children were not. These children grow up outside the Agta community, which consequently perceives them as *mestizos*. Early and Headland (1998:149) extensively write about these inter-ethnic unions and their offspring, and group them together as the ‘acculturating population’.

Livelihood survey

Census interviews were as much as possible combined with semi-structured interviews on each household’s livelihood activities. Care was taken to include livelihood activities undertaken throughout the year and by both men and women. If we suspected the list of activities mentioned by the informant was not exhaustive we did suggestions of missing activities. This also served to make it easier for people to speak of any illegal activities that they might engage in, notably logging. For each mentioned livelihood activity, we probed for information on resource extraction methods, the use of hunting and fishing tools, trade, and labour prices. Interviews were mostly held with individuals belonging to one household, but sometimes additional individuals joined in and the discussion turned into a group interview. Answers were however listed per household.

On the park’s western interior side, livelihood interviews were conducted with almost all encountered households. On the Pacific side of the mountains, however, Agta population numbers are much higher and time was too short to speak to each and every household individually. Taking a random sample to select respondents was likewise impossible as there was no basis on which to take such a sample. Therefore, interviews were simply conducted with as many households as possible, which always constituted the majority of the settlement’s household population however. Households were selected in such a way that each extended family within a certain Agta settlement was included.

During both the survey and the site-studies, in addition to interviewing people we observed them as often as we could while they engaged in their various livelihood activities. This way, we could learn more about the activity and came upon new questions to further improve our understanding of it. The only problematic activity in this respect was hunting, which we had to follow from a distance, since I would never be able to keep up with an Agta hunter in action. Our informants worried that it would end in tragedy, and although they didn’t say so, I am sure they were also rightly concerned that I would be in their way.

Time allocation data

The livelihood survey and qualitative ethnographic research gave us a good impression of what livelihood activities Agta individuals engage in. It turned out that there were considerable differences between and within Agta residential groups. I wished to further quantify these differences by measuring the amount of time spent in a range of activities. To this end, in each of the three selected Agta residential groups, a sequence of three separate time allocation studies was conducted.¹⁴¹ Although for logistical reasons in the Disabungan and Dimasalansan residential groups no studies were carried out at the height of the rainy season, studies were as much as possible spread out through the year to avoid a seasonal bias:

1. Disabungan: January 2004, Augustus 2004 and April 2005
2. Diangu: June 2004, November 2004, April 2005
3. Dimasalansan: January 2005, March 2005 and July 2005

In principle, each time allocation study lasted five consecutive days. One of the studies among the Diangu Agta however lasted seven days because during two days the area was hit by a typhoon. In the same area and among the Disabungan Agta two other studies had to be shortened to four days for some of the included households, as these had become unreachable because of swollen rivers. All households that at the moment of the study were part of the residential group participated in the study. Thus the resulting data reflect the actual time expenditure of the entire residential group during the study period, not just of part of it. The chosen procedure for collecting time allocation data as described below was inspired by Headland's time allocation studies (1986) among the San Ildefonso Agta in Casiguran. Following a comparable procedure allowed for comparison between Headland's data and mine.

Within each household, all members age six and above were included. Through a combination of direct observation and structured interviewing, their activities were recorded twice-daily, at noon and at dusk. We observed household members' activities during the day as much as we could. As this was only possible for activities that were conducted in and around the settlement, we relied on interviews for all other activities. Interviews were also used to verify and complement our direct observations. Each household member was asked what had been his or her most time consuming activity during the previous morning or afternoon. If more than one activity was mentioned, we probed until we knew what had been the most time consuming one. If someone was out of camp the entire day, we interviewed him or her in the evening or the morning of the next day. In exceptional cases we relied on other household members' accounts of what an absent relative had been doing. Such information, however, was cross-checked with the person under observation whenever possible. As their understanding of our aim grew, many of the out-going group-members would inform us on their upcoming activities prior to departure to their destinations. As plans may change along the way, however, we still interviewed the out-going persons on their actual activities upon their return.

¹⁴¹ In each of the research sites, one of the three time allocation studies was carried out by research assistant Maria Ranay-Pedrablanca. Data analysis however was done by me.

Thus in three study sites, among all present households, for each household-member, during three five-day periods, a record of morning and afternoon activities was compiled. This record was analyzed per study-site, per sex and per age-class.¹⁴² All recorded activities were grouped in a large number of sub-activities, which were regrouped as twelve major activity categories (table A). Based on this list, each recorded activity was given an activity code. Next, all mornings and afternoons spent in each category were counted per study-area, sex- and age-group. Then, the average of the number of mornings and afternoons spent in a particular activity in a particular age-group was taken as the number of person-workdays (PWDs) predominantly spent in that activity.

For example, the Disabungan record contained 24 mornings and 24 afternoons for men age 21-30. These men spent two out of 24 mornings in 'domestic work and child-care' and one out of 24 afternoons in 'domestic work'. Thus, averagely, they spent only 1.5 PWDs in domestic work, which is 6.3% of their total recorded time expenditure. Women in the same age category spent four out of 11 recorded mornings and six out of 11 recorded afternoons in the same activity. This was an average of five out of 11 PWDs, or 45% of their total recorded time. The total number of participating individuals and their recorded PWDs per study area and age-class is visible from table B. Sample sizes differ between study areas because their population sizes differ.

How representative are the resulting data? Two remarks should be made here. First, observation days were not randomly sampled, but chosen in sequences of five days. This has undoubtedly caused a distortion in the data because an activity conducted on day 1 in many cases determines to a large extent what is done on day 2 and even day 3¹⁴³. This is most evident in the case of the Diangu Agta. The entire group happened to be involved in paid farm labour during almost the full length of the third observation period (April 2005) because it was the height of the harvesting season. Had we come several weeks earlier or later, we would probably have recorded higher time expenditure in other activities. Likewise, if the Disabungan Agta are out logging on day 1, they are likely to be involved in related activities on the following days as well. It would, in theory, therefore have been better to sample the observation days randomly. Practically, however, this would have been undoable. It would have compromised the set-up of the current study, which aims to compare several Agta

¹⁴² Age-classes were the following: 6-10, 11-15, 16-20, 21-30, 31-40, 41-50, 51-60, and 60+. These classes were chosen as to reflect relevant differences in time expenditure. Children aged 6-10 are predominantly involved in play, but also conduct important household and sometimes economic activities. From age eleven both boys and girls become considerably more active in terms of economic activities, while by age sixteen they are expected to be economically mature. Towards the end of this period, most Agta marry and by age twenty-one many of them have their own families. During their twenties, most parents have very small children, which cause especially mothers to be mostly active within the domestic sphere. When parents reach age thirty, some of these children are old enough to take care of their younger siblings. At this point mothers' economic roles often change again. From around age forty onwards however, many adults become grand-parents and their economic roles gradually shift from an outgoing to a more domestic orientation. People are usually old when they reach age fifty and it is not common for them to become older than sixty. During these final decades of their lives, elderly people mostly fall under the economic care of their children.

¹⁴³ Other researchers must have come across the same problem. Headland (1986) used paired observation days, asking on day 1 what someone had done on that and the foregoing day. Griffin and Griffin (1985) used two sets of fifteen consecutive observation days, in the rainy and dry season respectively. It is unclear how Rai (1982) arrived at his time allocation data.

groups, rather than focus on just one. And necessarily a lot of research time would have been wasted by travelling between sites.

A second remark concerns the sample size. It could be asked whether a total of 15 days of observation spread through the seasonal cycle, per research area, per individual, is a large enough sample to really say something about an Agta group's time expenditure. Of course, more is always better and if I would have limited myself to just one Agta group I could have tripled the number of observation days for that one site.¹⁴⁴ Instead of focusing on one area, however I wished to include several to gain a broader perspective.

Despite these limitations, based on the qualitative insight that was gained during the two-month stays in each of the three study sites, I am convinced that the data fairly well reflect the differences in overall time expenditure between and within research areas. In as far as this is not the case, data distortions such as those mentioned above can mostly be put in perspective based on qualitative observations.

Table A. Time allocation categories

Domestic activities and childcare
A. Domestic activities
A1- domestic activities, including:
- cleaning in and around dwelling
- fetching water
- collecting firewood
- food preparation and cooking
- pounding rice
- laundry
- bathing
A2- domestic activities combined with child care
A3- domestic activities combined with care for younger siblings
A4- domestic activities conducted by playing children
B. Child care
B1- nursing / breast feeding baby
B2- child care (can be own or relative's child)
B3- taking care of sick child (can be own or relative's child)
B4- taking care of younger siblings
C. Medical care
C1- visit doctor
C2- preparing / applying herbal medicine
D. Housing
D2- construction of dwelling
V. Burn shells to make chalk for betel nut
Hunting
F. Hunting
F1- hunting
F2- trapping
F3- hunting and trapping
F4- joins husband in trapping
Fishing
G. Fishing sea
G1- fishing net

¹⁴⁴ Griffin and Griffin (1985) for instance conducted two 15-day time allocation studies among the Nanadukan Agta. Headland (1986) recorded over 3,000 person work-days among the Casiguran Agta. My own sample adds up to 1,494 PWDs. Rai (1982) has only expressed his allocation study's sample-size in hours (2,593) and not in person work-days and it is therefore impossible to compare his sample with mine.

- G2- fishing hook line
- G3- fishing spear
- G4- fishing lobster
- G5- collecting shells on reef flat
- G6- join husband in fishing, but no fishing

H. Fishing river

- H1- fishing spear
- H2- fishing net
- H3- collecting shells in river

U. Processing of catch

- U1- butchering/cleaning catch

Subsistence gathering

J. Gathering

- J1- gathering food/betel
- J2- gathering for medicinal purposes
- J3- gathering for construction and manufacture

Commercial gathering

Q. Commercial rattan gathering

- Q1- collecting rattan and transporting rattan to place of residence
- Q2- splitting rattan and or preparation for transportation
- Q3- transporting rattan from place of residence to selling point
- Q4- accompanying husband in transporting rattan to selling point
- Q5- accompanying parents in transporting rattan to selling point
- Q6- travel to village centre for getting interior tube for transporting rattan
- J4- gathering NTFPs for sale (orchids, birds nests)
- O-1 collecting scrap metal

Logging

N. Logging

- N1- logging (unspecified)
- N2- chainsaw operation
- N3- transportation of logs from cutting area to place of residence
- N4- preparation of logs for transportation
- N5- log transportation from place of residence to selling point
- N7- assisting father in chainsaw operation
- N8- accompanying husband in log transportation
- I6- maintenance / repair chainsaw
- R2- portering for loggers

Own agriculture

L. Agriculture

- L1- land preparation own swidden
 - L2- planting own swidden
 - L3- visiting / guarding swidden
 - L4- weeding own swidden
 - L5- gathering sweet potato/vegetables/coconut from own swidden
 - L6- gathering from relative's swidden
 - L7- land preparation for own paddy
 - L8- planting/transplanting rice on own paddy
 - L9- harvesting rice on own paddy
 - L10- visiting / guarding own paddy
 - L11- repair/maintenance irrigation canal
 - L12- drying own unmilled rice
 - L13- planting /transplanting rice on relative's paddy (exchange labour)
 - L14- livestock raising / care (including carabao)
 - L15- visiting other band area to borrow plough
 - L16- making copra
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Agricultural labour

M. Paid farm labour

- M1- Land preparation on non-Agta's paddy or swidden
 - M2- Planting and transplanting rice on non-Agta's paddy
 - M3- Harvesting and processing rice on non-Agta's paddy
 - M4- Claiming payment from paid farm labour
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Trade and credit

K. Trade and credit taking

- K1- trading wild fish and meat in village centre
 - K2- trading wild fish and meat in town centre
 - K3- trading own rice for consumer products in village centre
 - K4- purchasing supplies village centre
 - K5- purchasing supplies town centre
 - K6- obtaining rice, consumer products, medicines, clothes on credit
 - K7- paying off debts in village centre
 - Q7- claiming for payment rattan in village centre
 - N6- computing timber volume prior to transaction
 - N9- travel: claiming payment for logging in village centre
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Manufacture

E. Manufacture

- E1- weaving mat for sale
- E2- weaving mat for own use
- E3- constructing wooden sledge
- E4- making rattan backpack 'digian'

I. Tool construction / repair / maintenance

- I1- maintenance / construction of hunting tools
 - I2- maintenance / construction of fishing tools
 - I3- maintenance / construction of machete
 - I4- maintenance / construction of lobster traps
 - I5- maintenance / construction of fishing nets
 - I7- maintenance own motor block
 - I8- maintenance barangay motor block
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Non-work

T. Non-work

- T1- resting: tired
- T2- resting: sick chronic
- T3- resting: sick acute
- T4- resting: injury
- T5- resting: pregnant / just delivered
- T6- resting: bad weather
- T7- listening to radio
- T8- chewing betel nut
- T9- sitting, not doing anything
- T10- intoxicated
- T11- watching television in non-Agta's place
- T12- play
- T13- in school
- T14- visiting relatives
- T15- gin session
- T16- visiting non-Agta friend

W. Travel on foot**S. Participation in local politics**

- S1- attending barangay meeting
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Other

R. Wage labour

- R1- work as guide for conservation project
- R3- collecting bamboo / loading logs for construction of non-Agta's house

Table B. Overview of participating individuals and recorded person-workdays (PWD) per study site and age category

	6-10		11-15		16-20		21-30		31-40		41-50		51-60		60+		TOTAL	
	Ind.	PWD	Ind.	PWD	Ind.	PWD	Ind.	PWD	Ind.	PWD	Ind.	PWD	Ind.	PWD	Ind.	PWD	Ind.	PWD
Disabungan	5	44	4	28	6	68	9	35	3	29	4	34	4	26	2	17	37	281
	1	10	2	21	4	35	5	24	2	16	1	13	2	13	1	13	18	145
	4	34	2	7	2	33	4	11	1	13	3	21	2	13	1	4	19	136
Diangu	8	94	6	87	5	77	10	146	6	92	7	101	4	59	1	17	47	673
	4	45	3	43	4	60	5	73	3	51	3	34	3	49	0	0	25	355
	4	49	3	44	1	17	5	73	3	41	4	67	1	10	1	17	22	318
Dimasalansan	9	95	9	65	5	40	13	75	17	140	4	35	5	65	3	25	65	540
	2	20	4	25	1	10	6	35	9	70	3	25	2	30	1	10	28	225
	7	75	5	40	4	30	7	40	8	70	1	10	3	35	2	15	37	315
Total male	7	75	9	89	9	105	16	132	14	137	7	72	7	92	2	23	71	725
Total female	15	158	10	91	7	80	16	124	12	124	8	98	6	58	4	36	78	769
TOTAL	22	233	19	180	16	185	32	256	26	261	15	170	13	150	6	59	149	1494

Hunting and fishing data

We mapped the location of hunting and fishing grounds for each of the three selected residential groups through a combination of observation and interviewing. When travelling through informants' resource use areas, geographical names were noted down and locations were determined using a Garmin 500 GPS and Namria 1:50,000 topographic maps. The locations of remaining hunting grounds were further filled in with the help of the most knowledgeable informants (maps 3.1 to 3.3).

Again, I sought to gather quantitative data in order to add to insights gained from qualitative research. A record on hunting and fishing success rates was compiled for each of the three selected residential groups, with most data being collected in tandem with the time-allocation studies. For as many hunting and fishing trips as possible, we took systematic notes on the following:

- destination of hunting or fishing trip
- time of departure from camp and time of return
- names, ages and sex of people involved
- involvement of dogs (only for hunting trips)
- hunting / fishing tools brought along on trip
- composition and weight of catch
- hunting / fishing tool used to kill the animal
- weight of home-consumed and traded catch

Whether a hunting or fishing excursion was participated in by just one person or ten, it was counted as a single trip. For each participating individual, however, I computed the total time investment in that trip. For instance, if a trip lasted eight hours and three persons were involved, the total of invested man-hours was 24. This means that travel time is also included. Since I am interested in the total amount of time invested in hunting and fishing in relation to the catch it generates, I do not consider this problematic. What does create some distortion in the data, however, is the inclusion of time invested in other activities, such as the gathering of betel-nut or searching for a bees-nest for later honey harvesting purposes. As I found informants' own assessments of how much time they spent on such side-activities unreliable, there was, however, no way of coming up with a more accurate record of the actual time invested in hunting or fishing alone. Nonetheless, I am positive that such distortions are limited, as in practice it seemed that persons who set out to go fishing, were really mostly concerned with fishing; and likewise, people who intended to go hunting usually directed themselves to that activity during most of the trip.

Notes on hunting and fishing destinations and the people involved were taken prior to a hunting/fishing groups' departure. Upon return, which could be days later, the rest of the information was filled in. Catch was weighed using a small analogous pesola, with a maximum weight of five kilogram and an accuracy of 100 grams. In some cases part of the catch had already been consumed or traded by the time we had the opportunity to weigh it. Unless I felt that we could reasonably assess the weight, in these cases we removed the entire trip from the record. Especially in the case of fishing, which is often done by children, some trips have certainly escaped our eye.

The presented data should therefore not be taken as to reflect the frequency of hunting and fishing trips. Instead, they provide insight in hunting and fishing success rates and the use of hunting and fishing tools.

Trade data

The Agta's livelihood activities do not only generate produce for home consumption, but for trade as well. In order to gain quantitative insight in this aspect of the Agta economy we collected trade records for various products. This was complicated by various factors. First, due to the Agta's illiteracy, we could not rely on the study population itself to supply us with written records. Attempts to let informants keep a record of their earnings by means of pictures and symbols likewise failed. We thus either kept records ourselves, or relied on those kept by traders and buyers. At times, however, these were difficult to interpret as most transactions do not involve cash payments but instead take the form of barter. Moreover, Agta income heavily relies on credit (usually in the form of rice, coffee, sugar and other consumer goods) and the completion of transactions may take months.

For hunting and fishing catch records were kept as part of earlier outlined procedure: for each recorded hunting or fishing trip we noted how much of the catch was traded, with whom and for what price or exchange product. In addition, several store owners in villages kept records for us stating all products bought and sold by Agta households. These included transactions in which fish or meat were traded for consumer products. The Agta households involved gave their prior approval for our collection of these records.

For the income generated from selling timber and lobster we resorted to collection of transaction records kept by buyers. Again, data collection took place with prior approval of the Agta involved. In the case of timber, which is illegally cut and bought, this required careful action. Two log buyers from San Mariano and Tumauni were willing to provide us with transaction records of their Agta suppliers over a period of six months (see also Giebels 2005:88). The records contained the date of the transaction, the volume of timber sold and the name of the supplier. In the case of lobster, Mr. Nonie dela Peña, an Agta key-informant from Divilacan, copied the receipts that eight households received from their lobster buyer during a period of six months. The receipts stated the date of the transaction, the weight of the lobster traded, the price per kilogram, the total amount to be received and the outstanding credit.

Agricultural data

Again inspired by Headland's detailed work on the Casiguran Agta's fields (Headland 1986) I looked into the land holdings of the river-dwelling Disabungan and Diangu residential groups. Although a start was made to collect similar data among the coast-dwelling Dimasalansan Agta, planting and harvesting took place so irregularly among this group that it became impossible to gain quantitative insights unless I would focus

on the Dimasalansan residential group full-time. I therefore decided to limit data collection on agriculture to the two river-dwelling residential groups.

In 2004 and 2005, my research assistant and I, together with the land owners, mapped all Agta swiddens and irrigated rice fields that were cleared and/or cultivated by the Disabungan and Diangu residential groups. Field corners were recorded with a GPS Garmin 500, using a 6 m inconsistency margin. Distances between field corners were measured with 60 m measuring tape. This resulted in sketch maps of each field. These fields were visited on various stages of the agricultural cycle of 2004 and 2005, namely during clearing and land preparation, after planting and after harvesting. Notes were made regarding slope, colour of the soil, the stage of cultivation, crops planted, the biotope in which each field was developed and the extent to which the swidden was weeded. Interviews with the field owners were conducted in order to gain insight in the history of each field, and to collect data on planting and harvesting. Tables C and D contain a list of all fields in the record, as well as their location, area, owners and the main crops planted.

At CML, Leiden University, the GPS records were processed by GIS experts Maarten van 't Zelfde and Koen Overmars using the software Arcview. The resulting databases were imported in the mapping program Cartalinx, which allowed me to manually produce maps for each field. However, GPS records are hardly ever completely accurate because closed canopies, cloudy weather and satellites distort results. It was therefore necessary to verify the distances between all GPS recorded field corners and adjust them whenever necessary based on the real distances between field corners as included in my sketch maps. With these manual adjustments I was able to produce digitized maps for each field on the basis of which Cartalinx computed the area of each field and each crop area (see figures A through D for examples of the resulting maps). I estimate that the results show a possible inaccuracy margin of around 10%, due to above mentioned distortions in the GPS system as well as to the imperfection of my own mapping skills. Nonetheless, under the present technological and personal circumstances, this seemed the best possible option to gain quantitative insight in the Diangu and Disabungan Agta's agricultural systems.

Table C. Overview of rice fields and swiddens Diangu Agta 2004

Field no.	Site	Area (m2)	Owners	Crop
1	Dibulo	116	Gogai and Evelyn Aluad	wet rice
2	Dibulo	142	Gogai and Evelyn Aluad	wet rice
3	Dibulo	126	Gogai and Evelyn Aluad	wet rice
4	Dibulo	84	Gogai and Evelyn Aluad	wet rice
5	Dibulo	269	Paran and Sigay Ignacio	wet rice
6	Dibulo	257	Paran and Sigay Ignacio	wet rice
7	Dibulo	322	Paran and Sigay Ignacio	wet rice
8	Dibulo	90	Basilio and Serly Ignacio	wet rice
9	Dibulo	292	Basilio and Serly Ignacio	wet rice
10	Dibulo	304	Basilio and Serly Ignacio	wet rice
11	Dibulo	365	Basilio and Serly Ignacio	wet rice

12	Dibulo	146	Basilio and Serly Ignacio	wet rice
13	Dibulo	319	Basilio and Serly Ignacio	wet rice
14	Dibulo	22	Basilio and Serly Ignacio	wet rice
15	Dibulo	545	Basilio and Serly Ignacio	wet rice
16	Dibulo	107	Basilio and Serly Ignacio	wet rice
17	Dibulo	399	Basilio and Serly Ignacio	wet rice
18	Dibulo	164	Bignet and Yodyod Impiel	wet rice
19	Dibulo	361	Bignet and Yodyod Impiel	wet rice
20	Dibulo	251	Bignet and Yodyod Impiel	wet rice
21	Dibulo	283	Bignet and Yodyod Impiel	wet rice
22	Dibulo	209	Bignet and Yodyod Impiel	wet rice
23	Dibulo	422	Bignet and Yodyod Impiel	wet rice
24	Dibulo	137	Bignet and Yodyod Impiel	wet rice
25	Dibulo	76	Bignet and Yodyod Impiel	wet rice
26	Dibulo	81	Gogai and Evelyn Aluad	wet rice
27	Dibulo	100	Gogai and Evelyn Aluad	wet rice
28	Dibulo	144	Bongbong and Elma Aluad	wet rice
29	Dibulo	125	Bongbong and Elma Aluad	wet rice
30	Dibulo	79	Bongbong and Elma Aluad	wet rice
31	Dibulo	219	Bongbong and Elma Aluad/ Nolie Maggay	wet rice
32	Dibulo	145	Bongbong and Elma Aluad / Nolie Maggay	wet rice
33	Dibulo	174	Bongbong and Elma Aluad / Nolie Maggay	wet rice
34	Dibulo	390	Bongbong and Elma Aluad / Nolie Maggay	wet rice
35	Dibulo	370	Bongbong and Elma Aluad / Nolie Maggay	wet rice
36	Dibulo	360	Nolie and Mila Maggay	wet rice
37	Dibulo	533	Nolie and Mila Maggay	wet rice
38	Dibulo	213	Nolie and Mila Maggay	wet rice
39	Dibulo	150	Nolie and Mila Maggay	wet rice
40	Dibulo	220	Gogai and Evelyn Aluad / Nolie Maggay	wet rice
41	Dibulo	117	Gogai and Evelyn Aluad / Nolie Maggay	wet rice
42	Dibulo	242	Gogai and Evelyn Aluad / Nolie Maggay	wet rice
43	Dibulo	263	Gogai and Evelyn Aluad / Nolie Maggay	wet rice
44	Dibulo	285	Nolie and Mila Maggay	wet rice
45	Dibulo	259	Ollay and Dellang Cariño	wet rice
47	Dibulo	318	Ollay and Dellang Cariño	wet rice
50	Dibulo	168	Ollay and Dellang Cariño	wet rice
48	Dibulo	237	Ollay and Dellang Cariño	wet rice
51	Dibulo	157	Ollay and Dellang Cariño	wet rice
53	Dibulo	262	Ollay and Dellang Cariño	wet rice
55	Dibulo	309	Ollay and Dellang Cariño	wet rice
46	Dibulo	264	Paran and Sigay Ignacio	wet rice
49	Dibulo	193	Paran and Sigay Ignacio	wet rice
52	Dibulo	246	Paran and Sigay Ignacio	wet rice
54	Dibulo	237	Paran and Sigay Ignacio	wet rice

56	Dibulo	283	Paran and Sigay Ignacio	wet rice
57	Dibulo	288	Paran and Sigay Ignacio	wet rice
58	Dibulo	229	Paran and Sigay Ignacio	wet rice
59	Dibulo	196	Ligaya and Johnny Madriaga	wet rice
60	Dibulo	307	Ligaya and Johnny Madriaga	wet rice
61	Dibulo	267	Ligaya and Johnny Madriaga	wet rice
62	Dibulo	108	Ligaya and Johnny Madriaga	wet rice
63	Dibulo	118	Ligaya and Johnny Madriaga	wet rice
64	Dibulo	346	Ligaya and Johnny Madriaga	wet rice
65	Dibulo	150	Ligaya and Johnny Madriaga	wet rice
66	Dibulo	45	Ligaya and Johnny Madriaga	wet rice
67	Dibulo	38	Ligaya and Johnny Madriaga	wet rice
68	Dibulo	131	Ligaya and Johnny Madriaga	wet rice
69	Dibulo	125	Ligaya and Johnny Madriaga	wet rice
70	Dibulo	241	Ligaya and Johnny Madriaga	wet rice
71	Dibulo	620	Ligaya and Johnny Madriaga	wet rice
72	Dibulo	162	Ligaya and Johnny Madriaga	wet rice
73	Dibulo	151	Ligaya and Johnny Madriaga	wet rice
74	Dibulo	304	Ligaya and Johnny Madriaga	wet rice
75	Dibulo	226	Ligaya and Johnny Madriaga	wet rice
76	Dibulo	366	Ligaya and Johnny Madriaga	wet rice
77	Dibulo	324	Ligaya and Johnny Madriaga	wet rice
78	Dibulo	283	Ligaya and Johnny Madriaga	wet rice
79	Dibulo	313	Ligaya and Johnny Madriaga	wet rice
80	Dibulo	188	Ligaya and Johnny Madriaga	wet rice
81	Dibulo	176	Ligaya and Johnny Madriaga	wet rice
82	Dibulo	258	Ligaya and Johnny Madriaga	wet rice
83	Dibulo	227	Ligaya and Johnny Madriaga	wet rice
84	Dibulo	178	Labtag and Vicente Mora	wet rice
85	Dibulo	192	Labtag and Vicente Mora	wet rice
86	Dibulo	244	Labtag and Vicente Mora	wet rice
87	Dibulo	356	Labtag and Vicente Mora	wet rice
88	Dibulo	304	Labtag and Vicente Mora	wet rice
89	Dibulo	352	Labtag and Vicente Mora	wet rice
90	Dibulo	220	Labtag and Vicente Mora	wet rice
91	Dibulo	306	Labtag and Vicente Mora	wet rice
92	Dibulo	422	Labtag and Vicente Mora	wet rice
93	Dibulo	201	Labtag and Vicente Mora	wet rice
94	Dibulo	384	Labtag and Vicente Mora	wet rice
95	Dibulo	389	Labtag and Vicente Mora	wet rice
96	Dibulo	337	Labtag and Vicente Mora	wet rice
97	Dibulo	298	Labtag and Vicente Mora	wet rice
98	Dibulo	232	Labtag and Vicente Mora	wet rice
99	Dibulo	357	Labtag and Vicente Mora	wet rice
100	Dibulo	380	Labtag and Vicente Mora	wet rice
101	Dibulo	206	Labtag and Vicente Mora	wet rice
102	Dibulo	151	Labtag and Vicente Mora	wet rice
103	Dibulo	339	Labtag and Vicente Mora	wet rice
104	Dibulo	241	Ollay and Dellang Cariño	cassava

105	Dibulo	212	Ollay and Dellang Cariño	sweet potato
106	Dibulo	322	Ollay and Dellang Cariño	not yet planted at time of recording
107	Dibulo	7	Ollay and Dellang Cariño	eggplant
108	Dibulo	385	Bongbong and Elma Aluad	not yet planted at time of recording
109	Dibulo	25	Bongbong and Elma Aluad	not yet planted at time of recording
110	Dibulo	287	Paran and Sigay Ignacio	upland rice
111	Dibulo	502	Basilio and Serly Ignacio	corn
112	Dibulo	405	Basilio and Serly Ignacio	upland rice
113	Dibulo	1193	Basilio and Serly Ignacio	cassava
114	Dibulo	68	Basilio and Serly Ignacio	cassava, sweet potato, pineapple, banana
115	Dibulo	9	Basilio and Serly Ignacio	beans
116	Uli	148	Paran and Sigay Ignacio	cassava
117	Uli	4	Paran and Sigay Ignacio	okra
118	Uli	22	Paran and Sigay Ignacio	sweet potato
119	Uli	12	Paran and Sigay Ignacio	not yet planted at time of recording
120	Uli	42	Paran and Sigay Ignacio	not yet planted at time of recording
121	Uli	2786	Paran and Sigay Ignacio	upland rice
122	Uli	49	Paran and Sigay Ignacio	not yet planted at time of recording
123	Uli	188	Paran and Sigay Ignacio	cassava
124	Uli	22	Paran and Sigay Ignacio	sweet potato
125	Diangu	22	Berning and Kolag Ignacio	corn
126	Diangu	15	Berning and Kolag Ignacio	ccrn
127	Diangu	972	Berning and Kolag Ignacio	upland rice
128	Diangu	2056	Basilio and Serly Ignacio	upland rice

Table D. Overview of swiddens Disabungan Agta 2004

Field no.	Site	Area (m2)	Owners	Crop
1	Digud	1057	Kayusan and Ferdinand Mariano	rice, corn, cassava
2	Digud	1617	Peong and Avelino Ferrer	rice, corn, cassava, sweet potato, beans, pechai, okra, tomato, yam, squash, banana
3	Digud	297	Nakidayen Impiel	rice, corn
4	Digud	650	Okles and Dongdong Impiel	rice, corn
5	Digud	1149	Okles and Dongdong Impiel	rice, corn, beans
6	Digud	2729	Wasing and Poncha Mariano	rice, corn, cassava, beans
7	Digud	564	Nakidayen Impiel	rice, corn, cassava, yam, squash, okra, eggplant
8	Digud	821	Okles and Dongdong Impiel	corn, cassava, sweet potato, yam, pineapple, peanut
9	Digud	677	Wasing and Poncha Mariano	cassava, sweet potato, corn, squash, yam
10	Digud	1044	Ose and Emoy Wagi	not yet planted at time of recording
11	Digud	615	Selia and Richel Wagi	not yet planted at time of recording
12	Digud	1687	Wasing and Poncha Mariano	not yet planted at time of recording
13	Digud	5450	Jomar and Enduk Mariano	not yet planted at time of recording
14	Digud	279	Wasing and Poncha Mariano	corn
15	Digud	10	Wasing and Poncha Mariano	corn
16	Digud	309	Wasing and Poncha Mariano	cassava, yam, sweet potato

17	Digud	335	Wasing and Poncha Mariano	sparsely planted with cassava, sweet potato, yam
18	Digud	2	Okles and Dongdong Impiel	okra, eggplant, papaya, tomato, squash
19	Digud	171	Okles and Dongdong Impiel	cassava, sweet potato, yam, string bean, coconut
20	Dipili	29	Carmen and Mario Matias	cassava, sweet potato
21	Dipili	57	Carmen and Mario Matias	cassava, sweet potato
22	Dipili	53	Ose and Emoy Wagi	cassava, sweet potato
23	Dipili	1310	Ose and Emoy Wagi	rice, corn, cassava
24	Dipili	2389	Wagi Impiel	rice, corn, string beans
25	Dipili	888	Carmen and Mario Matias	rice, corn
26	Dipili	334	Ose and Emoy Wagi	corn, cassava, sweet potato
27	Dipili	317	Selia and Richel Wagi	corn, sweet potato
28	Dipili	194	Ose and Emoy Wagi	cassava, sweet potato
29	Dipili	11	Selia and Richel Wagi	string beans
30	Dipili	41	Ose and Emoy Wagi	string beans
31	Dipili	35	Carmen and Mario Matias	cassava, sweet potato, beans
32	Dipili	5	Carmen and Mario Matias	cassava, sweet potato
33	Dipili	77	Carmen and Mario Matias	corn, cassava, sweet potato
34	Dipili	52	Carmen and Mario Matias	sweet potato
35	Dipili	13	Carmen and Mario Matias	sweet potato
36	Dipili	377	Carmen and Mario Matias	cassava, sweet potato, yam, corn, string beans, mungo beans, pineapple
37	Dipili	474	Dikkad and Hagkok Impiel / Carmen Matias	yam, sweet potato, cassava, banana, corn, string beans
38	Dipili	540	Carmen and Mario Matias	cassava, sweet potato
39	Dipili	29	Dikkad and Hagkok Impiel	cassava, sweet potato, yam
40	Dipili	3019	Jenalyn and Dino Manuel	not yet planted at time of recording
41	Dipili	5672	Carmen and Mario Matias	not yet planted at time of recording

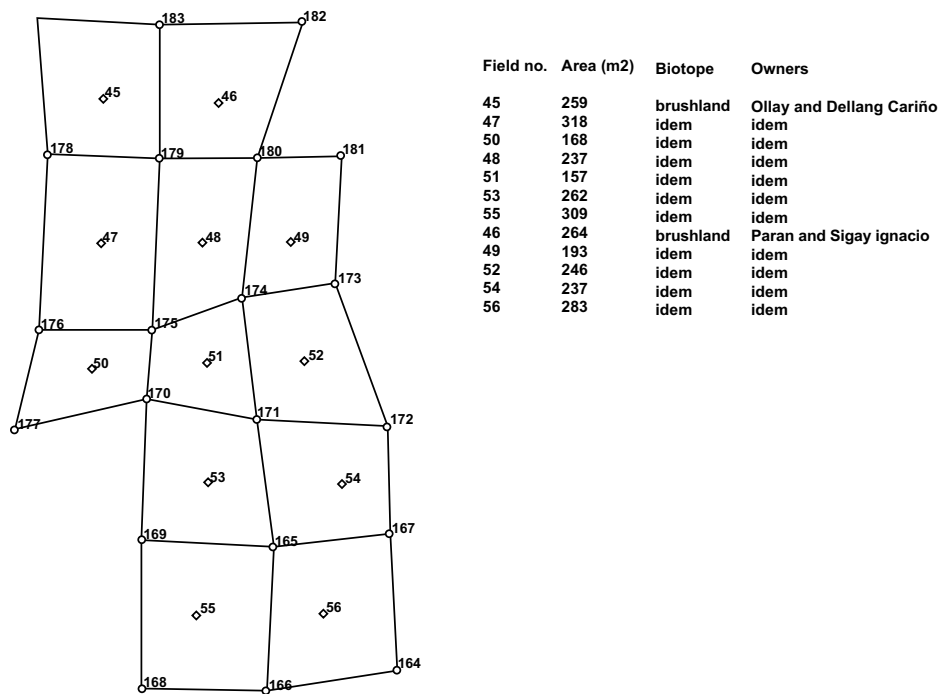


Figure A. Wet rice fields at Dibulo (Diangu)

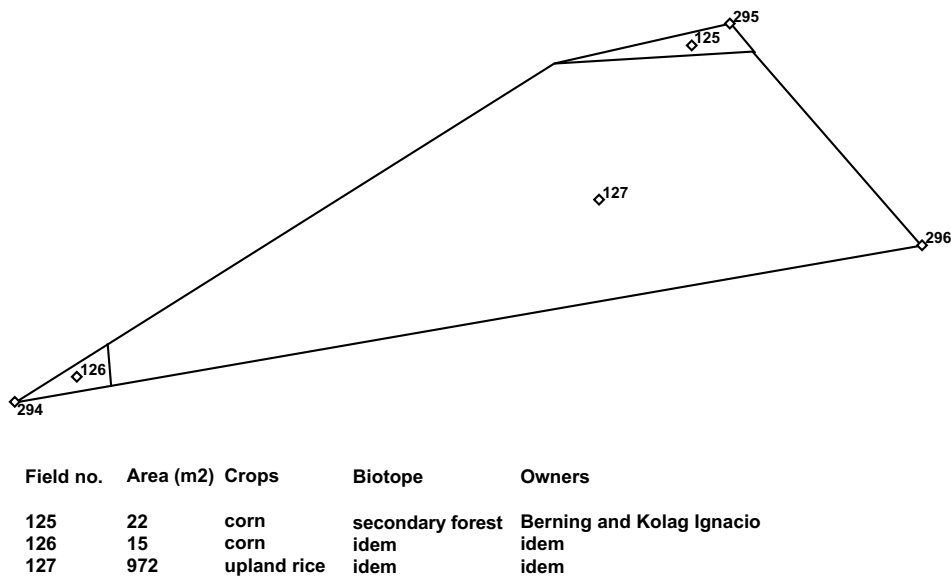


Figure B. Swidden at Diangu

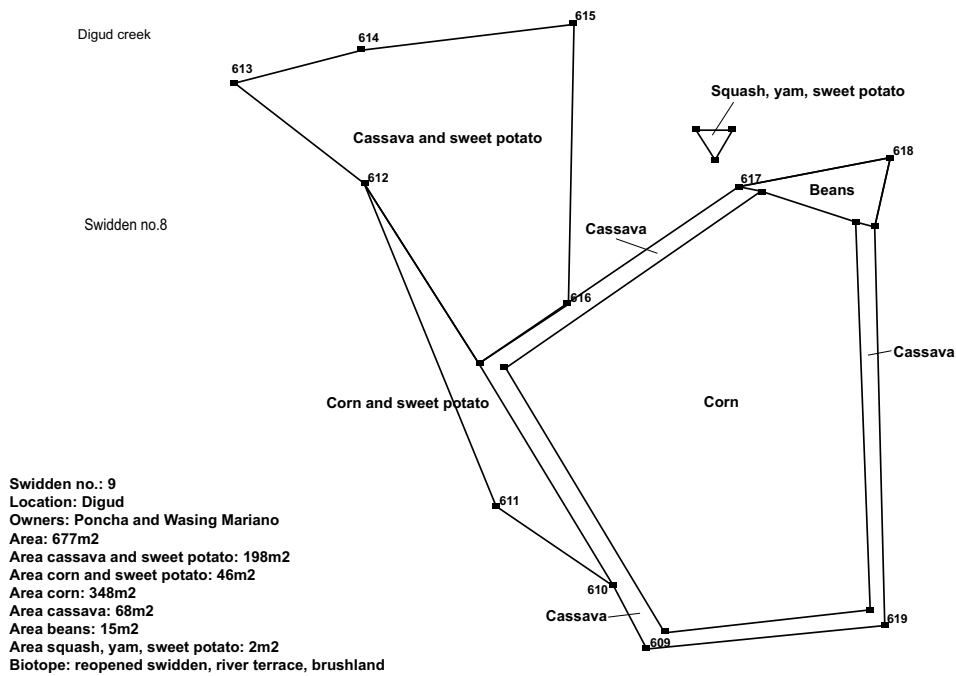


Figure C. Swidden at Digud (Disabungan)

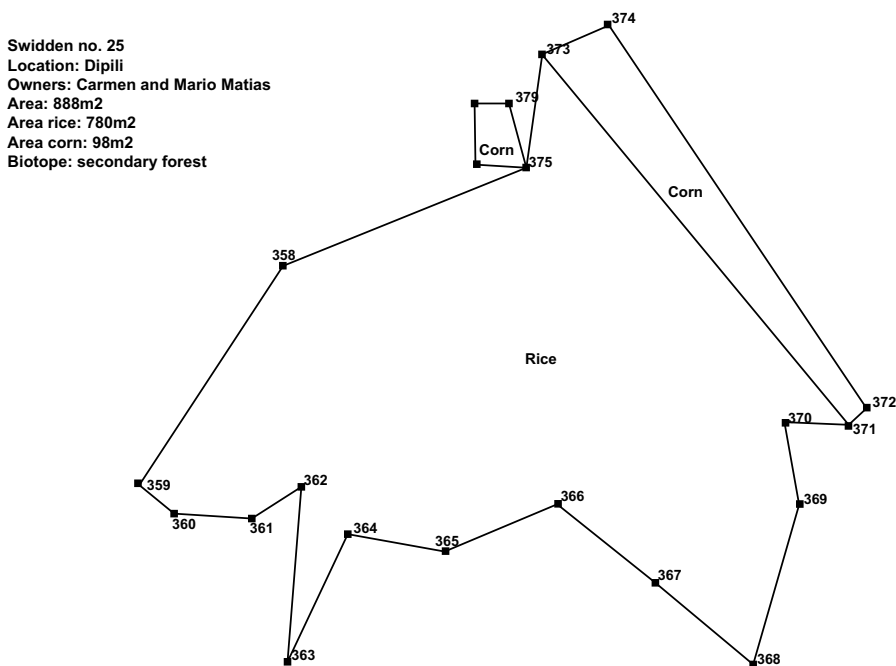


Figure D. Swidden at Dipili (Disabungan)

Nutrition data

I was initially hesitant to collect data on diet because asking people what they are eating seems such an impertinent thing to do, especially in circumstances of poverty. Because of this very poverty, however, I got increasingly convinced of the urgency of the matter, and once I had overcome my shyness, it turned out to be an exercise in which people, and children in particular, enjoyed to participate. Data on diet were collected from a total of sixteen different Agta households in the three selected residential groups. Among each group data collection took place in two sequences of five-day observation periods, which always coincided with time allocation studies. Only a limited number of households which were located closely together were asked to participate, since we would not have been able to collect data among a larger sample. Among the Disabungan residential group this concerned two households in August 2004 and another two households in March 2005. In the Diangu residential group, four households were observed in November 2004 and three households in April 2005. In the Dimasalansan residential group, we observed four households in January 2005 and another four in the following month of July.

During each observation period we visited our selected households while they were cooking breakfast, lunch and dinner and made notes on the volume of rice to be cooked, and the type and weight of side-dishes. We also listed the name, sex and age of each person participating in the meal and the origin of the main ingredients (self-caught or gathered, cultivated, bought, given, etc.). Any meals that included ingredients that were given by us were excluded from the analysis. For weighing ingredients we used the same pesola as used in measuring hunting- and fishing catch. Ingredients were weighed while still uncooked. If we were too late, we estimated the weight. This resulted in a total sample of 276 records. In this dissertation these data are only analyzed for basic purposes, such as knowing how often Agta forego a meal, and what their meals consist of. I hope that an analysis with respect to caloric value will follow in the future.

Ethnographic data

While most ethnographic data were collected as part of all of the above mentioned data-collection procedures, I also always carried a check-list of ethnographic topics with me that I wished to discuss with informants whenever there was an opportunity to do so. This list ranged from spiritual matters to personal histories to relationships with non-Agta and marriage rituals. Discussion of these topics was often part of other interviews, or arose spontaneously during trips to the forest and along the sea, or during coffee sessions. Such discussions were informal and unstructured in nature and took place mostly with elderly, knowledgeable key informants.

In order to stimulate discussion on (partly no longer existent) material culture I used pictures from Reed's book 'The Negritos of Zambales' (1904), including images of hunting arrows, body decorations and musical instruments. These pictures raised great interest among young and old informants and generated a lot of information. Attempts at using them as a basis for the recording of life histories did not work out

that well. Several very good informants were asked to think of key events in their lives, but when we eventually sat down to listen to their stories in detail they faltered the moment the tape recorder was running. I found the use of tape recorder difficult and even though informants assured me they did not mind, it definitely made them feel shy and uncomfortable. I therefore stopped using it.

I only refer to individuals' names in the text where I think this can in no way damage them and when I consider it of additional value. In as far as possible and appropriate, I do use the names of individuals appearing in the photographs included in this dissertation. Unless mentioned otherwise, all of these pictures were made by me.

In the cases where I use Agta vocabulary I have asked Prof. Dr. Thomas Headland, linguist at the Summer Institute of Linguistics (SIL) and author of numerous publications on Agta languages (for example T. Headland and J. Headland (1974), Headland (1975), Headland 2003), to correct my spelling. With respect to the spelling of local geographical names, I follow local government documentation such as municipal development plans whenever possible. In case these are not available, I spell names based on the advice of my assistant-interpreter. Any remaining errors, however, are entirely my responsibility.

Workshop

As closing activity of my assignment as 'junior expert park management and indigenous peoples' we organized a five-day workshop for Agta informants from throughout the Northern Sierra Madre Natural Park at the campus of Isabela State University in Cabagan. The workshop was titled *Ako ay Agta, ako ay Pilipino!* (I am Agta, I am Filipino!). A total of 68 households attended the workshop, together comprising 231 persons. Of these 115 were male and 116 were female. Half of them were adults and the other half were children. The invited households were a selection of those with whom we had worked most closely in the preceding three years of field work.

A first objective of the workshop was to verify my initial research results by presenting them to a knowledgeable Agta audience. I did so by presenting PowerPoint slides showing pictures that I had made during field work and that could stimulate discussion on a selection of topics. I explained my findings in Ilocano and asked my audience to correct me where I was wrong. Although the presentation resulted in lively and excited discussion it did not provoke any critical reflection on my results as the audience kept yelling 'Korrek, korrek!' (Correct, correct!) as I outlined my conclusions. Nonetheless, it was a very pleasant way to share the most basic results with those who had provided the information.

A second objective of the workshop was to empower the adult participants by providing them with a paralegal training on IPRA and NIPAS; and by letting them engage in a problem analysis of challenges they face. The participants spent much of the workshop in pursuing this analysis and made their results into PowerPoint slides to be presented to an audience of government officials on the workshop's last day. The main outcomes of the analysis and the dialogue with government will repeatedly come

up throughout this dissertation, but the detailed results and methodology were documented elsewhere (Minter et al. 2005).

Secondary data

Headland (1986:430) mentions having ‘[...] almost fruitlessly searched for written records of the various government agents that have overseen the Agta’. I came upon the same problem, probably partly because such records hardly exist and partly because they easily disappear as particular state agencies are dissolved or transferred. The little secondary information that I do refer to mainly comes from municipal offices; and the national, regional and provincial offices of the National Commission on Indigenous Peoples (NCIP) and the Department of Environment and Natural Resources (DENR). A small number of (largely undated) documents by the Presidential Assistant for National Minorities (PANAMIN) were retrieved from the National Library in Manila. Further, the CVPED library contained a large number of reports and other documents produced by the several NGOs that have been active in the Northern Sierra Madre Natural Park since 1997. With respect to historical documents, I must note that have not done archival research as time and resources did not permit this. Moreover, as I am unable to read Spanish, in as far as I do make use of historical documents I have limited myself to English sources.

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SAMENVATTING

De Agta van de noordelijke Sierra Madre Levensonderhoud en veerkracht van Filippijnse jager-verzamelaars

Dit proefschrift is een studie naar de wijze waarop de Agta zich aanpassen aan veranderingen in hun natuurlijke en sociale omgeving. De Agta zijn een jager-verzamelaarsvolk met een totale bevolkingsomvang van ongeveer 10,000 individuen. Zij leven langs de rivieren en kusten van het Sierra Madre gebergte op het Filippijnse eiland Luzon. De Agta zijn afstammelingen van de eerste bewoners van de eilandengroep en worden daarom onder nationale wetgeving erkend als de inheemse bevolking van de Filippijnen. De studie richt zich op de Agta bevolking die in en rondom het Northern Sierra Madre Natural Park (NSMNP) woont.

Het NSMNP is gelegen in de noord-oostelijke provincie Isabela en werd in 1997 tot beschermd gebied uitgeroepen. Het park beslaat 360,000 hectare aan bos en marine ecosystemen en geldt als een van de belangrijkste natuurgebieden in de Filippijnen. Het NSMNP overlapt met negen gemeenten en 23,000 mensen wonen binnen de parkgrenzen. Van hen is bijna 8% Agta. Het merendeel van de parkbewoners behoort tot diverse generaties migranten die sinds de jaren vijftig vanuit andere delen van Luzon naar de Sierra Madre zijn gekomen om in de houtkap industrie te werken en land te ontginnen. Velen van hen zijn nadat de grootschalige houtkap begin jaren negentig formeel werd beëindigd in de Sierra Madre gebleven.

De studie beantwoordt de volgende vragen:

1. Hoe is de Agta bevolking in en rond het NSMNP verspreid?
2. Wat zijn de sociaal-culturele kenmerken van deze bevolking?
3. Wat zijn de bestaansbronnen van deze Agta bevolking en hoe bepalen zij hun economische strategieën?
4. Hoe kenmerken zich de relaties tussen de Agta en mensen van andere etnische komaf, die in het gebied wonen zoals boeren, houtkappers, missionarissen, medewerkers van non-goevernemente organisaties en overheidsbeambten?
5. Hoe beïnvloeden ontwikkelings interventies en wetgeving op het gebied van milieu en inheemse rechten de sociaal-economische situatie van de Agta?

Veldwerk voor dit onderzoek vond plaats tussen 2002 en 2007 en bestond uit twee complementaire componenten. Ten eerste werd een survey onder de gehele Agta bevolking in en rond het NSMNP gehouden die tot doel had bevolkingsaantallen,

demografische structuur, nederzettingen, verwantschap, mobiliteit en bestaansbronnen in kaart te brengen. Ten tweede werd onder drie verschillende Agta groepen langduriger en herhaaldelijk onderzoek gedaan op het gebied van tijdbesteding, opbrengsten uit jacht- en visserij, landbouw praktijken en voeding. Etnografisch onderzoek naar cosmologie, sociale organisatie, inter-etnische relaties en de invloed van wetgeving en ontwikkelingsinterventies maakte deel uit van beide onderzoeks-componenten. De voornaamste bevindingen van de studie laten zich als volgt samenvatten.

De totale Agta bevolking die afhankelijk is van de natuurlijke hulpbronnen in het NSMNP telt bijna 1,800 mensen. Zij wonen verspreid in ruim 80 nederzettingen. De bevolking valt uiteen in drie verwantschapsnetwerken die onderling weinig contact hebben. Het gaat hier om een netwerk dat zich langs de kust vestigt en twee naburige netwerken die zich in oost-westelijke richting langs rivieren in het bergachtige binnenland vestigen. Mobiliteit is een kernwaarde voor de Agta en nucleaire gezinnen verblijven afwisselend in verschillende nederzettingen binnen het gebied dat het verwantschapsnetwerk beslaat. Hun mobiliteit komt voort uit economische overwegingen, conflict beslechting, het onderhouden van familie relaties en angst voor de geest van overleden verwanten.

Als een gevolg van deze mobiliteit fluctueert de bevolkingsomvang per nederzetting tussen de drie en vijftien nauw verwante nucleaire gezinnen. Het gemiddeld aantal gezinsleden is 4.6. Gezinnen wonen tijdens het regenseizoen (september tot februari) doorgaans in zeer kleine, half-open hutten met een vloer van bamboe en een dak van palmbiad. Tijdens het droge seizoen (maart tot augustus), wanneer de mobiliteit het grootst is, verruult men de hut vaak voor een nog eenvoudiger onderkomen: een van palmbiad geweven scherm dat in rivierbeddingen en op stranden opgezet wordt. Men kookt op een open houtvuur en gebruikt drinkwater uit rivieren en bronnen.

Hoewel een kleine minderheid van de Agta bevolking in het NSMNP zich heeft bekeerd tot een protestantse stroming, zijn de meesten animisten. Het geloofssysteem draait om voorouder- en natuurgeesten, die allen te vriend gehouden dienen te worden door middel van voedsel offers en het volgen van bepaalde gedragsregels. Een falen in dit opzicht wordt verondersteld te leiden tot ziekte en slechte jacht- en visvangstresultaten. De geesten van overleden nabije familieleden worden in het bijzonder gevreesd en een groot deel van de mobiliteit van de Agta kan verklaard worden uit de spirituele behoefte om te verhuizen in reactie op een sterfgeval.

In tegenstelling tot de omringende non-Agta bevolking, die explosief toeneemt, groeit de Agta bevolking van het NSMNP niet of nauwelijks. Dit is bovenal het gevolg van hoge sterftcijfers, met name onder kinderen. Van de levend geboren Agta kinderen overlijdt 28% voor de vijfde verjaardag. De hoge kindersterfte is te wijten aan een combinatie van ondervoeding en infectieziekten. Een groot deel van de ziekte- en sterfgevallen zou voorkomen kunnen worden door een verbeterd aanbod van betrouwbaar drinkwater, zuigelingenzorg en vaccinatie programma's.

Wetgeving schrijft voor dat migranten in beperkte mate gebruik mogen maken van natuurlijke hulpbronnen in de marges van het NSMNP. De Agta hebben wegens hun inheemse status ook toegang tot de dieper in het park gelegen gebieden voor zover hun exploitatie methoden duurzaam, niet-commerciële en traditioneel zijn. In de praktijk wordt deze wetgeving echter niet nageleefd en is het gehele park voor iedereen open toegankelijk. Dit betekent dat naarmate de niet-Agta bevolking verder toeneemt de druk op de jacht-, vis- en verzamelgronden van de Agta groeit. Zodoende worden Agta en niet-Agta in steeds sterkere mate concurrenten in de exploitatie van bos- en marine hulpbronnen. Dit is met name het geval aan de westzijde van het NSMNP, waar de bevolkingsdruk het grootst is en waar bovendien op grote schaal aan illegale houtkap gedaan wordt. De Agta moeten dus in hun bestaan voorzien in een bos dat niet alleen kleiner wordt, maar ook aan kwaliteit verliest. Hoewel de Agta officieel ruim vertegenwoordigd zijn in het parkbestuur maakt het gebrek aan politiek draagvlak voor duurzaam bosbeheer het hen onmogelijk om verandering in deze situatie te brengen.

Dit proefschrift laat zien dat de Agta deze problemen vooral het hoofd bieden door economische diversificatie en flexibiliteit. Het stelt dat hoewel sociaal-economische veranderingen binnen de Agta samenleving onbetwistbaar plaatsvinden, deze de vorm aannemen van aanpassingen en variaties op bestaande patronen. Zodoende markeren zij niet het einde van de Agta als jager-verzamelaars. De Agta passen zich aan veranderende omstandigheden aan door pragmatisch gebruik te maken van nieuwe mogelijkheden die passen binnen hun jagers-verzamelaars bestaan. Dit betekent onder andere dat kernwaarden als mobiliteit, verwantschap en economische diversificatie van groot belang blijven, evenals een oriëntatie op het bos dan wel de kust. Het proefschrift bestrijdt verder het heersende beeld van de Agta als homogene groep en stelt dat voor een goed begrip van hun aanpassingsstrategieën zorgvuldig naar interne variatie gekeken moet worden.

De Agta voorzien in hun levensonderhoud door een economisch pakket dat per gebied en per seizoen verschilt, maar altijd een aantal van de volgende elementen bevat: jacht, visserij, verzamelen, landbouw, houtkap, landarbeid en ruilhandel met niet-Agta. Agta vissen en jagen overwegend met selectieve methoden, hoewel op sommige plekken ook snaarvallen voor de jacht gebruikt worden. Wild zwijn en hert zijn de voornaamste jachtdieren; zout- en zoetwater vis, kreeft, inktvis en schelpdieren zijn de belangrijkste aquatische producten.

Vis is zowel aan de kust als in het binnenland de belangrijkste bron van dierlijke eiwitten. Echter tijdbesteding in en opbrengsten uit visserij verschillen sterk. Aan de kust is vissen de primaire activiteit. Mannen en vrouwen brengen hier gemiddeld ruim 26% van hun tijd¹⁴⁵ vissend door. Het vergt twee uur om een kilo vis te vangen. In het binnenland brengt overbevissing de visserij in het gedrang en zijn de opbrengsten laag. Afhankelijk van de locatie investeren Agta vissers hier tussen zes en negen uur voor

¹⁴⁵ Tijdbesteding wordt in dit proefschrift uitgedrukt als percentage van een totaal aantal gemeten werkdagen. Een werkdag begint als men 's ochtends opstaat en duurt tot de avond maaltijd. De werkdag kan dus ook rust momenten bevatten.

iedere kilo gevangen vis. De tijdsinvestering in visserij varieert in het binnenland van ruim 2% tot bijna 8%.

Het belang van jacht is aan de kust verwaarloosbaar tijdens de droge tijd, maar neemt iets toe in het regenseizoen. De resultaten van deze studie laten zien dat Agta mannen in het binnenland gemiddeld 8% van hun tijd aan jacht besteden en dat jagers voor iedere kilo vlees vier uur investeren. In de jaren tachtig lag de totale tijdsinvestering in jacht voor mannen tussen de 50% and 75%. Maar ondanks de scherpe afname in tijdsbesteding is jagen nog steeds van grote culturele waarde, en zien Agta jacht als een primair kenmerk van hun identiteit.

Agta verzamelen diverse niet-hout bosproducten voor constructie doeleinden, medicinaal gebruik en consumptie. Het belang van verzamelen voor commerciële doeleinden is op de meeste plekken groot. De gemiddelde tijdsinvestering in deze activiteit ligt rond de 12%. De voornaamste commerciële producten zijn rotan in de binnenlanden en de nesten van verschillende gierzwaluwsoorten in de kuststreek. Voor beide producten geldt dat ze ook op grote schaal door niet-Agta verzameld worden en dat verzamelaars toenemende schaarste signaleren.

Met name in de westelijke binnenlanden van het Sierra Madre gebergte zijn veel Agta mannen werkzaam in de illegale houtkap. Zij spenderen tot 30% van hun tijd aan het vinden en kappen van de juiste bomen en het transporteren van hout naar de overslagpunten. Zij doen dit met gemengde gevoelens. Hoewel ze de ecologische en sociale gevolgen van de houtkap als zeer negatief ervaren, slagen ze er niet in de toestroom van houthakkers in hun leefgebied te stoppen. Door de afwezigheid van de overheid in deze afgelegen gebieden ontstaat een ongecontroleerde situatie waarin de Agta als kleine minderheid onder druk worden gezet om mee te werken aan de houtkap. Aangezien zij bovendien als gevolg van diezelfde houtkap minder goed in staat zijn een inkomen uit jacht en visserij te genereren, wordt medewerking onvermijdelijk. Hier geldt dus het principe buigen of barsten: de Agta zijn meer gebaat bij veerkrachtig meebuigen dan bij verzet.

Het belang van landbouw varieert sterk. Aan de kust investeren Agta het minst in landbouw (gemiddeld 5% van hun tijd) en verbouwen ze voornamelijk knolgewassen. De Agta groepen die bovenstrooms langs rivieren wonen, bedrijven extensieve zwerflandbouw. Ze onderhouden velden met knolgewassen, groenten, mais en droge rijst. De opbrengsten van dit land zijn gering, maar vervullen desondanks een belangrijke functie als noodvoorziening. In deze gebieden spendeert men rond de 8% van de tijd aan landbouw. De meest intensieve vorm van landbouw wordt bedreven door Agta groepen die in de lager gelegen valleien wonen, met name aan de oostzijde van het Sierra Madre gebergte. Zij doen in toenemende mate aan geïrrigeerde rijstverbouw, en oogsten meestal twee maal per jaar. In alle gevallen is de adoptie van geïrrigeerde rijstverbouw voorafgegaan door langdurige ervaring met landarbeid. Agta vrouwen die niet-Agta mannen gehuwd hebben, spelen een belangrijke rol in kennisoverdracht op dit gebied.

Toch stelt dit proefschrift dat de adoptie van permanente rijstverbouw door bepaalde Agta groepen niet verward moet worden met een definitieve overstap naar een agrarisch bestaan. De wijze waarop de Agta geïrrigeerde rijstverbouw bedrijven, verschilt in tenminste twee opzichten van de landbouw praktijken van de omringende boeren bevolking. Ten eerste investeren Agta veel minder tijd in hun velden dan de naburige boeren en zijn ze vaak afwezig tijdens het groeiseizoen wegens een verblijf in andere nederzettingen. Dit resulteert in een relatief lage opbrengst. Ten tweede wordt de opbrengst van de geïrrigeerde rijstvelden voor een groot deel onmiddellijk gebruikt voor het afbetalen van schulden bij dorpswinkels en blijft als gevolg daarvan meestal niets over als zaaigoed voor het volgende plantseizoen. Dit proefschrift laat zien dat deze praktijken niet getuigen van agrarische onkunde, maar van een logica die consistent is met de economische flexibiliteit en diversificatie die de Agta nastreven.

De Agta hebben deze bestaanswijze door de jaren heen gecontinueerd in weerwil van vergeefse pogingen van overheids-, religieuze en non-gouvernementele organisaties om hen een sedentair, agrarisch bestaan op te leggen. Deze mislukte interventies komen voort uit een gebrek aan inzicht in wie de Agta zijn en wat zij ambiëren. Huidige overheidsplannen om de Agta van het NSMNP onder inheemse volkeren wetgeving een gemeenschappelijke landtitel toe te kennen dreigen eveneens te stranden als gevolg van misvattingen over mobiliteit, sociale organisatie en relaties tussen Agta en niet-Agta.

Tegelijkertijd hebben noch de overheid, noch het maatschappelijk middenveld een antwoord op de grote problemen waar de Agta mee kampen. De chronische ondervoeding, de hoge sterfte- en morbiditeits cijfers, de lage onderwijsparticipatie, het gebrek aan politieke representatie, de discriminatie en de voortschrijdende milieudegradatie worden onvoldoende erkend door de verantwoordelijke instanties. Er is een prangende noodzaak deze problemen te benaderen op een cultureel sensitieve wijze. Dit proefschrift concludeert dan ook dat de Agta voornamelijk gebaat zouden zijn bij interventies die hun bestaande levenswijze respecteren en versterken. Daarbij is duurzaam en rechtvaardig milieubeheer een eerste prioriteit.

SUMMARY

The Agta of the Northern Sierra Madre Livelihood strategies and resilience among Philippine hunter-gatherers

This dissertation is a study of the Agta's responses to environmental and social change. The Agta are a hunter-gatherer people of about 10,000 individuals. They settle along the coasts and rivers of the Sierra Madre mountains in Northeast Luzon. The Agta descend from the Philippine archipelago's first colonizers and are therefore recognized as indigenous people under national legislation. The study focuses on the Agta living in and around the Northern Sierra Madre Natural Park (NSMNP).

The NSMNP is situated in the province of Isabela and was established in 1997. The park covers 360,000 hectares of forest and marine habitats and forms one of the Philippines' conservation priorities. The NSMNP overlaps with nine municipalities and 23,000 people live within its boundaries. Of these, nearly 8% are Agta. Most of the park's inhabitants belong to several generations of immigrants who came to the Sierra Madre from other parts of Luzon since the 1950s in search of land and employment in the logging industry. After large scale logging formally ended in the early 1990s many of these immigrants stayed in the Sierra Madre.

The study answers the following questions:

1. How many Agta live within the Northern Sierra Madre Natural Park (NSMNP), where do they live, and how is this population demographically structured?
2. What are the characteristics of contemporary Agta culture and social organisation?
3. What livelihood strategies do the Agta of the NSMNP follow, how do these strategies come about and what are the implications for natural resource use within the NSMNP?
4. What is the nature and importance of Agta's relations with non-Agta farmers, loggers, traders, missionaries, NGO personnel, government officials and others?
5. What is the impact of (non-)governmental interventions, including environmental and indigenous rights legislation, on the Agta's socio-economic situation?

Fieldwork for this study took place between 2002 and 2007 and consisted of two complementary components. First, a survey of the entire Agta population of the NSMNP took place in order to collect data on population numbers, demographic structure, settlement patterns, kinship, mobility and livelihood. Second, in depth-studies on time allocation, hunting and fishing success, agricultural practices and

nutrition were conducted among three different Agta groups. Ethnographic research on cosmology, social organization, inter-ethnic relations and the impact of legislation and development interventions was carried out as part of both these components. The main findings of the study can be summarized as follows.

The total Agta population that depends on the natural resources present in the NSMNP numbers nearly 1,800 people. They live in over 80 settlements. The population consists of three kinship networks between which little interaction takes place. These are a coast-dwelling network and two neighbouring river-dwelling networks that settle in east-west direction across the mountain range. Mobility is a core value for the Agta and nuclear households alternately reside in different settlements that fall within the range of their kinship network. Mobility is driven by economic opportunity, conflict, the need to maintain social ties and the fear for the spirit of deceased relatives.

As a result of mobility the population size of each settlement fluctuates between three and fifteen closely related nuclear households. The average household size is 4.6. During the rainy season (September through February) dwellings usually consist of small, half-open huts with a bamboo floor lifted off the ground and a palm-leaf roof. During the dry season (March through August), when mobility is highest, preference is often given to sunshields woven from palm leaves. Supported by one or two sticks, these are put up on river-banks and beaches. Cooking is done on open fire and drinking water is obtained from rivers and springs.

While a minority of the Agta population in the NSMNP has adopted Protestant Christian faith, most adhere to an animistic belief system that revolves around ancestor and nature spirits. Both classes of spirit need to be appeased through food offerings and respect of certain rules of conduct. Negligence of these duties is believed to result in sickness and poor hunting and fishing success. The spirits of deceased close relatives are especially feared and much of the Agta's mobility can be attributed to the spiritual need to shift camp after death has occurred.

Contrary to the surrounding non-Agta population, which grows rapidly, the Agta population of the NSMNP grows very slowly, if at all. This is mostly the result of the Agta's high mortality rates, especially among children. Of every Agta child born alive, 28% die before the fifth birthday. These high child mortality rates are caused by a combination of malnutrition and infectious disease. Morbidity and mortality could be much reduced by improving drink water quality and by offering maternal healthcare and vaccination programs.

Legislation prescribes that migrants are entitled to limited use of natural resources in the NSMNP's outer zones. The Agta, because of their indigenous status, also enjoy access to the park's interior on the condition that they employ sustainable, non-commercial and traditional extraction methods. Since this legislation is not enforced, in practice the entire park is accessible to everyone. Given earlier mentioned rapid non-Agta population expansion, this results in rising pressure on the Agta's hunting, fishing and gathering grounds. Agta and non-Agta therefore increasingly compete for natural resources. This is especially the case on the NSMNP's western side, where population

pressure is highest and illegal logging is widespread. As a result, the Agta have to derive their livelihood from a forest that has not only become smaller, but continues to lose much of its quality too. Although the Agta are officially well-represented in the NSMNP's management board, dominant political interests make it impossible for them to change this situation.

This dissertation shows that the Agta mainly deal with these problems through economic diversification and flexibility. It argues that while socio-economic changes undeniably take place within Agta society, these represent adaptations to and not a radical breach with their hunter-gatherer existence. The Agta adjust to a changing natural and social environment by pragmatically using new opportunities that suit their hunting and gathering package. This means that key values such as mobility, kinship and economic diversification remain of high importance, just as an orientation towards the forest or coast. The dissertation further contests the dominant view of the Agta as a homogenous group and argues that for a proper understanding of the Agta's adaptation strategies their internal variety needs to be taken into careful account.

The Agta have a mixed livelihood package which differs per area and per season, but always contains several of the following components: hunting, fishing, gathering, agriculture, logging, land labour and barter with non-Agta. The Agta generally use selective hunting and fishing methods, although snare-traps are used in some areas. Wild pig and deer are the main game animals; marine and freshwater fish, lobster, octopus and shellfish are the most important aquatic products.

Fish is the main source of animal protein for both river-dwelling and coast-dwelling Agta. However, time investment in fishing as well as fishing success rates sharply differ between coastal and inland areas. Along the coast, fishing is the primary activity. Men and women averagely spend over 26% of their time¹⁴⁶ fishing and it takes them two hours to obtain one kilogram of fish. In the mountain interior fishing success rates are low as a result of overexploitation. Depending on the location it takes Agta between six and nine hours to obtain one kilogram of fish. Time investment in fishing ranges from over 2% to nearly 8%.

Along the coast, the importance of hunting is low during the dry season, but increases during the rainy months. The results of this study show that in the mountain interior Agta men averagely spend 8% of their time hunting and that it takes them four hours to obtain one kilogram of fish. Total time investment in hunting in the 1980s ranged from 50% to 75%. Despite the sharp decrease in time investment, hunting still is of great cultural importance and Agta consider it as a main part of their identity.

The Agta gather various non-timber forest products for construction purposes, medicinal use and consumption. In most areas the importance of gathering for

¹⁴⁶ In this dissertation time investment is expressed as percentage of a total number of measured workdays. Each workday starts after one wakes up in the morning and lasts until the evening meal. The workday therefore may contain leisure moments.

commercial purposes is high. Average time investment in this activity is 12%. The main commercially collected products are rattan in the mountain interior and the nests of various swiftlet species in the coastal areas. With respect to both products Agta face fierce competition from non-Agta and gatherers note increasing scarcity.

Especially in the western interior of the NSMNP many Agta are involved in illegal logging. They spend 30% of their time in finding and cutting trees and transporting the logs to the selling points. They regard this situation with ambivalence. While they strongly disapprove of the ecological and social effects of logging, they are unable to halt the influx of loggers in their living areas. In the absence of governance, an uncontrolled situation arises in which Agta are being pressured to participate in logging. As logging in turn negatively impacts hunting and fishing success the Agta are left with no other option than to resort to the activity themselves. Here, the principle 'if you can't beat them, join them' applies: since the Agta cannot put an end to logging, going with the flow is the next best option.

The importance of agriculture strongly varies. Along the coast, Agta invest least time in farming (averagely 5% of their time) and they mainly cultivate root crops. The river-dwelling Agta in the remote forest interior practice swidden cultivation. They plant mixed fields with root crops, vegetables, corn and rain fed rice. While the returns from these fields are low, they form important emergency provisions. In these areas average time investment in agriculture is 8%. The river-dwelling Agta living in lower lying areas are most intensively involved in agriculture, especially on the NSMNP's eastern side. They have in recent years taken up wet rice cultivation, which usually results in two harvests per year. In all cases the adoption of irrigated rice cultivation has been preceded by long term involvement in paid land labour. Agta women who have married non-Agta men take an important role in knowledge transfer in this respect.

This dissertation argues that the adoption of permanent rice cultivation by some Agta groups is not to be mistaken for a transition to an agricultural existence. The way in which Agta farm their rice fields differs in at least two important respects from the way that non-Agta farmers do. First, Agta spend relatively little time on their fields and they are often absent during the growing season as they temporarily move to other settlements. This results in low yields. Second, following the harvest much of the yield is immediately used to pay off debts with village shops, and usually nothing is left to use as planting material for the next season. This study shows that these practices are not symptomatic of the Agta's failure to adopt agriculture, but that they are consistent with their aim to uphold economic flexibility and diversification.

The Agta have maintained their hunting and gathering existence despite failed attempts of governmental, religious and non-governmental organizations to turn them into sedentary farmers. These unsuccessful interventions result from a lack of understanding of who the Agta are and what they aspire. Current government plans to grant a collective land title to the entire Agta population of the NSMNP under indigenous rights legislation will likely fail too because of misconceptions of the Agta's mobility, social organization and relations with non-Agta.

At the same time, neither government nor civil society has an answer to the pressing problems that the Agta face. Chronic malnutrition, high mortality and morbidity levels, low educational enrolment, lack of political representation, discrimination and continuing environmental degradation are insufficiently acknowledged by the responsible government agencies. There is an urgent need to address these problems through a culturally sensitive approach. This dissertation therefore concludes that the Agta would benefit most from interventions that respect and strengthen their current mode of existence. Sustainable and equitable environmental management should thereby be prioritized.

CURRICULUM VITAE

Tessa Minter was born in Amsterdam on the 20th of July 1977. She followed secondary education at the Montessori Lyceum Amsterdam from August 1989 to June 1995. In the following year Tessa worked as an eco-volunteer in southern Thailand, where she developed an interest in environmental anthropology. She studied non-western sociology with a specialization in human-environment relations at the Institute of Environmental Science (Leiden University) from September 1996 to September 2001. Her MA thesis, for which Tessa conducted five months of field work in southern Thailand, was on fruit farmers' usufruct rights in a protected area. In the subsequent year Tessa worked on a policy analysis of indigenous peoples' position in natural resource management. From September 2002 to September 2005 she was assigned as DGIS junior expert 'indigenous peoples and protected area management' at the Cagayan Valley Program on Environment and Development (CVPED), the Philippines. The research that she conducted in that capacity resulted in the present PhD thesis.