Fisheries co-management, the role of local institutions and decentralisation in Southeast Asia : with specific reference to marine sasi in Central Maluku, Indonesia

Harkes, I.H.T.

7 Institutional resilience of marine *sasi*

Even though *sasi* has been in place over 400 years, in some parts of Central Maluku it is disappearing. While in many villages on the Lease Islands, Ambon and Seram *sasi*, or remnants of it, are still present, entirely functioning systems are becoming rare. S *asi* is dynamic through time and has adapted and changed under influence of trade (the spice wars), colonisation (by respectively the Portuguese, the English, and the Dutch), religion (Christianity and Islam), and the imposition of nationally defined government structures in the 1970s. Current threats to the system are commercialisation, modernisation and a general loss of traditional values. Interestingly, some villages have been able to maintain a strong and functional *sasi* system both on land (*sasi darat*) and water (*sasi laut*). In 1996-98 a study was carried out to study the presence of *sasi*, the degree of activity and the reasons for loss or survival of *sasi*. The results of this study can be useful in the revitalisation of traditional institutions or in the process of institution building in the context of co-management.

7.1 Introduction

People refer to s *asi* as fundamentally *adat, gereja* (church) or 'other'. In the past, the distinction of church sasi (*sasi gereja*) from *adat sasi* referred to the dominant governing authority in the local institution, but in modern times the partnership of local government with these authorities is implicit. In cases where respect for *adat* is very strong, *adat* leaders play a prominent role in developing and enforcing *sasi* rules (*sasi adat*). In church *sasi* it is the church that plays the most visible role. In general, a shift in authority from *adat* leaders to church leaders and to newly defined village governments (since 1979) characterizes the recent history of the *sasi* institution in Central Maluku. In several Muslim villages people did not describe their *sasi* institution as *adat sasi*; these are tabulated under the name 'other'. The role played by *adat* leaders, if any, is not clear. In these villages, where *sasi* is applied to marine resources it is a commercial agreement between local government and a harvester who pays a fee for harvesting rights (*sasi lelang*).

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Various scientists have studied *sasi* (Zerner 1994; von Benda-Beckmann *et al.* 1995; Nikijuluw 1995; Thorburn 2000). Yet, the existence of *sasi* and its dynamics have never been studied on an overall scale. Our research project covered most islands and villages in Central Maluku. The results are described in this paper which tries to analyse where and when *sasi* – or aspects of *sasi* – disappeared, which factors caused it to decline, but also which factors made it endure over time and/or stimulated villages to re-establish *sasi*. Understanding this process and the factors behind it will help to develop, maintain, or revitalize *sasi* and other fisheries management systems.

The first part of this paper presents the general patterns of decline of *sasi* in the region and marine *sasi* in particular. The second part goes deeper and based on case studies tries to uncover the changes and reasons for breakdown or strengthening of *sasi*. In the conclusion the results of the two studies are synthesized and factors identified that play a role in the continued existence of *sasi*.

7.2 Institutional resilience defined

A social institution consists of all the structural components of a society (e.g. patterns of behaviour) through which the main concerns and activities are organized and social needs are met (Goddijn *et al.* 1980, Marshall 1994). This general definition can be narrowed down when we look specifically at resource management systems. Berkes and Folke (1998) distinguish two major functions of a resource management institution: 1) to control access to the resource to exclude outsiders; and 2) institute rules among users to solve conflicts between individual and collective interests in order to divide the resource benefits. The first is called the exclusion problem, the second the subtractability problem. A useful definition then is the one by North (1993) who describes an institution as the formal and informal constraints or rights and rules and their enforcement characteristics. Examples of formal constraints are rules, laws and constitutions, while informal constraints can be norms of behaviour, conventions and codes of conduct.

Resilience can be defined as the degree to which an institution or system can cope with change without collapsing, or, the ability of a system to absorb perturbations by actively adapting to an ever changing environment (Folke and Berkes 1995). Reduced resilience means that vulnerability increases, with the risk that the system crosses a threshold and collapses (Folke and Berkes 1995). Community management institutions should be understood as dynamic social interventions, shaped by local experience and influenced by external factors (Bailey and Zerner 1992). Change is inherent to such institutions. Yet, if adaptability of response to changing conditions is insufficient, management institutions can break down, leaving the resource unregulated.

Important attributes that relate to institutional resilience are the enforcement mechanisms for the regulations and the changes that result from internal and external influences.

7.3 PATTERNS OF LOSS OF *SASI* SINCE THE 1940S

The villages surveyed were not expected to be homogenous. Therefore, to display the information, the villages have been grouped by: dominant religion (Muslim and Christian), population size (class 1 = ≤1000 people, class 2 = 1001-2000, class 3 = 2001-3000, and class 4 = >3000) and island (to indicate the distance to the urban centre, Ambon city).

7.3.1 Loss of the entire sasi institution

Of the 63 villages studied, 19 had lost their entire *sasi* institution (Table 7.1). Most losses occurred in the 1990s and on Ambon and Saparua. On Haruku Island, by contrast, some form of *sasi* has survived in every village.

TABLE 7.1 – Attrition of *sasi* institution (i.e. total loss of all forms) on each island. Note, one village in Ambon never had *sasi*.

***Sasi* institution lost**	**Seram**	**Ambon**	**Haruku**	**Saparua**	**Nusa Laut**	**Total**
lost in 1990s	1	3	0	3	1	8 (42%)
lost in 1980s	0	2	0	0	0	2 (11%)
lost in1970s	0	3	0	1	0	4 (21%)
lost earlier	0	3	0	2	0	5 (26%)
Total	***1***	***11***	***0***	***6***	***0***	***19 (100%)***

TABLE 7.2 – Attrition of *sasi* institution in villages of various sizes and religion. Note, the village that never had *sasi* is a village of Butonese immigrants, size class 4 (>3000 people).

***Sasi* institution lost**	**Size class 1 (≤1000)**	**Size class 2 (1001-2000)**	**Size class 3 (2001-3000)**	**Size class 4 (>3000)**	**Muslim**	**Christian**
lost in 1990s	2	3	1	2	4	4
1980s	1	1	0	0	1	1
1970s	1	0	0	3	1	3
Earlier	1	1	0	3	3	2
Total	5	5	1	8	9	10

Losses have been steady in both Muslim and Christian villages (Table 7.2), but there is a clear difference when you consider village size. Losses have been greatest in size class 4 (>3000 people) and much less in size class 3 (2001-3000). Apparently, there is an optimum size for villages with regard to *sasi*.

7.3.2 The erosion and loss of marine sasi

Active marine *sasi* institutions are hard to find. Out of 63 villages, only 17 had some form of marine *sasi* and a number of these were not functioning (Novaczek *et al*. 2001). Before, marine *sasi* was much more prevalent. We documented 18 villages that lost marine *sasi* in living memory (Table 7.3) meaning that at one time at least 35 villages (56%) had this institution. In four villages (Seith, Ouw, Seri, and Rutah) information was contradictory; while the survey did not indicate presence of marine *sasi*, one or more fishers interviewed thought *sasi* was either in force or had been in place at one time. Nevertheless, these villages were added to the 24 villages where either marine *sasi* never existed or had been forgotten.

In over half the cases where marine *sasi* has been lost, the loss occurred prior to 1970 (Table 7.3, 7.4). Since then, marine *sasi* has been relatively stable compared to land *sasi*. Most losses in the 1970s to 1990s have been in either size class 1 (≤1000) or size class 4 (>3000) villages (Table 7.3), and in the 1990s the only recorded loss was on Ambon Island (Table 7.4).

TABLE 7.3 – Attrition of marine sasi in relation to village size and religion

Marine *sasi* lost	Size class 1 (≤1000)	Size class 2 (1001-2000)	Size class 3 (2001-3000)	Size class 4 (>3000)	Muslim	Christian	Total
1990s	0	0	0	1	1	0	1
1980s	3	0	0	0	0	3	3
1970s	2	1	0	1	0	4	4
Lost earlier	2	4	1	3	3	7	10
Subtotal: lost	7	5	1	5	4	14	18
Number still existing	0	4	10	3	5	12	17
Never had marine *sasi*	6	7	6	9	11	17	28
Total	***13***	***16***	***17***	***17***	***20***	***43***	***63***

TABLE 7.4 – Attrition of marine sasi per island

Marine *sasi* lost	Seram	Ambon	Haruku	Saparua	Nusa Laut	Total
1990s	0	1	0	0	0	1 (6%)
1980s	0	2	0	0	1	3 (17%)
1970s	0	1	0	2	1	4 (22%)
Earlier	1	2	2	2	3	10 (56%)
Total	***1***	***6***	***2***	***4***	***5***	***18 (100%)***

7.4 Factors influencing activity of *sasi*

The level of activity of marine *sasi* was measured in every village using indicators for the presence of *sasi* (rules), closures (open and closed season), consistency of application (frequency over previous 3 years) and local effort (signage and enforcement). The maximum activity score is 12. Using this system we find that land s *asi* is significantly more active in villages with a population size between 2001-3000 (ANOVA, $p \leq 0.01$).

In Maluku, fishing villages are most often overwhelmingly Christian or Muslim. The seven villages where marine *sasi* was most active (score 10-12, see Table 7.5) were all homogeneously Christian or Muslim, i.e. with at least 95% of the population being of the dominant religion. Out of 17 cases of marine *sasi,* three were inactive (score 3) and another three were weak (score 6-7). One of the cases of inactive marine *sasi* occurred in a relatively non-homogeneous village and a second case was in a Christian *dusun* (hamlet) of a predominantly Muslim *desa* (village). Cultural homogeneity can thus be important to the resilience of this traditional institution.

TABLE 7.5 – Factors related to activity of marine sasi in central Maluku

Village	Dominant religion	Homo-geneity	Administrative status	Size class	Activity score for marine *sasi*	
					Land	Marine
Nolloth	Christian	1	Desa	3	12	12
Haruku	Christian	1	Desa	3	11	12
Pelau	Muslim	1	Desa	4	12	12
Siri Sori	Muslim	1	Desa	3	n.a.	12
Morela	Muslim	1	Desa	3	11	12
Itawaka	Christian	1	Desa	3	11	10
Amahai	Christian	1	Desa	3	12	10
Kabau	Muslim	1	Desa	3	n.a.	9
Ihamahu	Christian	1	Desa	2	12	9
Tengah-Tengah	Muslim	1	Desa	3	12	9
Hatusua	Christian	2	Desa	2	9	9
Porto	Christian	1	Desa	4	10	7
Paperu	Christian	1	Desa	3	9	6
Ulath	Christian	1	Desa	2	6*	6*
Makariki	Christian	2	Desa	2	12	3
Rohua	Christian	1	Dusun in a Muslim desa	3	12	3
Haria	Christian	1	Desa	4	8**	3**

Homogeneity status: 1 = 95-100% is of dominant religion, 2 = 60-80% is of dominant religion. * Sasi moved to church in 1992; ** Sasi moved to church in 1995.

The persistence of marine *sasi* appeared to be linked to the presence of other types of *sasi*; villages with marine *sasi*, for example, usually have active land *sasi*. Resilience of marine*sasi* depends also on the interplay among governing authorities. It has been stable in the Muslim villages where the institution is governed neither by *adat* authorities nor religious leaders (Table 7.6). In a number of cases *sasi* on marine resources was abandoned (e.g. Akoon, Am - eth, Leinitu) or weakened (e.g. Haria, Ulath) when*adat sasi* was taken over by the church. Compared to marine*sasi* that is of the*adat* or 'other' type, marine *sasi* in villages with church *sasi* is less active. Where *adat sasi* has survived, losses of marine *sasi* are fewer compared to villages where only church *sasi* remains (Table 7.6).

TABLE 7.6 – Type of sasi in villages that have or had or never had, marine sasi

Current status of village	Adat *sasi* village (n=15)	Church *sasi* village with no adat *sasi* (n=21)	Muslim *sasi* village (n=6)
Has marine *sasi* now	10 (67%)	4 (19%)	3 (50%)
Lost marine *sasi* in living memory	2 (13%)	7 (33%)	0 (0%)
Historical occurrence of marine *sasi* (ever had it)	12 (80%)	11 (52%)	3 (50%)
Never had marine *sasi*	3 (20%)	10 (48%)	3 (50%)
Percentage of loss in relation to occurrence	17%	64%	0%

7.5 REASONS FOR LOSS OF *SASI* BETWEEN 1940 AND 1997

During the inventory of the 63 villages, we asked whether our informants could remember when some aspect of *sasi* changed or was lost, and why this had happened. Explanations were often quite explicit and included contextual information pertaining to the evolution of socio-political systems in Maluku (see Novaczek *et al.* 2001 for details). The comments were merely applicable to villages where *sasi* actually was lost or transformed.

Weak leadership and conflicts seem to be key elements in the erosion of *sasi*. Reasons that villagers gave for the partial or complete loss of the institution were: conflicts within the village government, conflicts between the village leader and *adat* authorities, conflicts between the village leader and the *kewang*, conflicts among church organisations, and conflicts over land. Conflicts between *adat* leaders and the village government leading to erosion of *sasi* were reported only in Christian villages and never on Nusa Laut.

Confusion over land and rights was in some cases due to changes in government unit boundaries. Changes in administrative boundaries and the effects of World War II were most prevalent on Ambon and Nusa Laut. In addition, pressure from worsening economic conditions has been mounting since the collapse of the clove price in the early 1990s. Crop failure and decline of the resource were also mentioned as causing *sasi* to collapse.

The lack of effective enforcement, in combination with economic needs, political turmoil, and urbanisation provided the incentives for people to non-comply. Non-compliance and subsequent problems with the *kewang* led in several cases to breakdown of *sasi*, for example in Hulaliu. Compliance and enforcement problems were most prevalent in Christian villages, particularly

on Ambon Island. In eight cases, the village government delegated the authority over *sasi* to the church, in many cases causing *sasi adat* and marine *sasi* to decline. As of 1997, 12 of the remaining *sasi* villages were affected by political or religious conflicts. In other words, in about a quarter of remaining *sasi* villages the institution is under strain.

7.6 Results of the comparative case-study

The findings from the in-depth interviews conducted as part of the institutional analysis in the six villages, underscore the link between the different components (objectives, rules), the players and the external context of the *sasi* institution, and illustrate the interactions among these through time.

Although Nolloth and Haruku villages both have a strong *sasi* institution, the types of *sasi* are distinct. Whereas Nolloth can be described as a system designed primarily to provide resource rent for the village government, Haruku's *sasi* has more to do with fair distribution of fish resources and conservation. Nolloth is a stable village, with legitimate leadership and strong representation of traditional authorities. The *kewang* is functional and, together with the village head, serious in the prosecution of offenders. The harvest rights of *sasi* are reserved for the village cooperative (KUD) and income accrues to the village government and the harvesters. Other villagers benefit indirectly through village development. In Haruku, a more important role is ascribed to the *kewang* and relatively less to the village head, except when he is also a traditional authority. *Kewang* members feel a strong responsibility towards *sasi*. The harvest is communal and distributed among the villagers. Recently, the villagers in Haruku have become divided as a result of the installation of a new village head. This leader, elected with a slender majority, supports *sasi* but also favours mining development that threatens the resources under *sasi*. This has led to confusion and a dysfunctional village government, a situation that in turn poses a threat to *sasi*.

In Hulaliu, conflicts between the village head and *kewang*, and in particular problems with accountability for the use of resource rents in the past, lie at the root of the decline of *sasi*. The current leader is trying to revitalize *sasi*, but his position is unstable because he lacks the support of a large part of the village population. The revitalization process is thereby threatened. In Tuhaha there have been problems in the past between formal and traditional authorities. There is also a tendency to revitalize *sasi*, but the relationship between the village government and traditional authorities first needs to be restored. The village government, which is currently only partly functional, has to be reorganized before a *kewang* can be installed.

In Toisapu-Hutumuri and Seri, *sasi* is lost and fisheries management is minimal or lacking. Traditional village structures are to a large extent replaced by formal structures at the *desa* (village) level, although less so at the *dusun* (sub-village) level. Artisanal fishers have to compete directly with large-scale fishers. Both villages lie on Ambon and close to regional markets and hence are more in contact with modernization and urban processes.

In the remainder of this section we describe the various elements of *sasi* and provide an analysis of how *sasi* functions and persists under different conditions.

7.6.1 Objective of sasi

The general objective of *sasi* as articulated by villagers is to protect resources from theft and destruction. Theft is prevented through active monitoring and enforcement. In Nolloth, for example, there are lengthy closed seasons and a minimum legal size for top shells (*Trochus niloticus*) harvested. In Haruku, destructive and overly efficient gear types are banned. Thus in these cases *sasi* does have a conservation objective. In addition, *kewang* leaders in Haruku expressively identify equitable distribution of fish, particularly to support the village poor, to be an objective of their revitalized *sasi* institution. The use of *sasi* for economic purposes, which has a long history in Maluku (von Benda-Beckmann et al. 1995), is also illustrated by Nolloth. The harvest rights of top shell were being auctioned off by the village government when they became more commercially interesting in the 1960s. This was to the dismay of some villagers who saw their personal direct benefits decrease.

A shift from communal harvests to the sale of marine harvest rights has occurred in most villages where *sasi* was revitalized by a local government. Although in most villages the principles of *sasi* are valued and *sasi* is perceived as 'a good thing', many fishers we interviewed object to the auctioning of harvest rights, especially to outsiders. In both Tuhaha and Hulaliu, village heads plan to auction the harvest rights and use *sasi* revenues for village development. However, fishers declared that they would respect *sasi* only if they would get direct benefits from a communal harvest.

Villagers may be kept satisfied with village development projects, but there may be problems when village income and revenues are not transparent. For example, in Nolloth in the 1980s profits appeared to be used for the personal benefits of the village head at the time, rather than for the public good. As a result, *sasi* nearly broke down.

7.6.2 Rules and regulations

Nolloth, Haruku and Hulaliu have written *sasi* regulations. There are various types of rules. The operational rules specify the marine species under *sasi*, gear restrictions, and the timing of the harvest. These operational rules are

the base on which the fishers make their day-to-day decisions about compliance. Collective-choice rules define the decision-making process for closures, access, and enforcement. The third level, the constitutional rules, is defined through *adat*. *Adat* prescribes which persons are involved in *sasi* and what their role is, e.g. who or which clan is responsible for decision-making, conflict resolution, execution of ceremonies and enforcement (see also Ostrom 1990).

The process of decline involves non-compliance to operational rules but this in turn is directly dependent on the effectiveness of the collective-choice rules. In Hulaliu a conflict between the village head and *kewang* in which the *kewang*'s rights were neglected (i.e. a collective level problem), was the root cause for *sasi* to decline. Subsequent problems with compliance (operational level) were secondary. *Adat* as part of the village culture, however, persisted, and thus the constitutional rules remained intact.

Over the last decades operational rules have been modified. Boundaries of *sasi* areas, frequency of open and closed seasons, division of benefits, restrictions on gear use, etc. all may and do change. In practical management terms, this affects the function of *sasi*, but does not threaten its continued existence. On the other hand, where the constitutional rules were challenged, e.g. a shift of authority from the *kewang* to the church, the loss of the *kewang*, the introduction of police as enforcers, or the promulgation of national fisheries legislation, then the structure or legal basis of the *sasi* institution changed and this can lead to disappearance of part or all of a local *sasi* institution. Adaptation of constitutional rules may also, however, strengthen *sasi*. For example, in Haruku where marine *sasi* is enforced by the *kewang*, the people requested the church to become involved in land *sasi* in a period when theft was significant. Since that time, the church functions complementary to the *kewang*, who are still mainly responsible for marine resources.

Because operational and collective-choice rules seem to break down more easily, they, as particular entities, are less resilient than constitutional rules. However, the fact that operational rules, and to a lesser extent the collective-choice rules, can be changed or abandoned and then revived is an important feature contributing to the adaptiveness and resilience of the larger institution.

7.6.3 Role of traditional institutions

In 1979, a new government structure was introduced (Law No. 5, 1979) through which authority shifted from traditional leaders to a formally elected village head and government. Even though the implementation of this law was expected to have caused confusion in the village, in the perception of ordinary villagers it had no dramatic and immediate impact. In all villages there is some degree of overlap between formal and traditional authorities.

Apparently, the requirements of the law, i.e. replacement of the traditional government structure by a formal one, were often implemented at a pace and in a manner suited to the local situation. In most cases the local government basically incorporated the traditional structure into the formal structure, and thus change was not clearly visible.

Our study shows that the degree of overlap is decisive for the continuation and stability of *sasi*. However, some villages have been more successful in combining the formal and traditional government structures (i.e. Nolloth) than others where traditional authorities became marginalized (i.e. Tuhaha). Where newcomers entered the village government through elections, villages became politically unstable. The villages where *sasi* ceased to function had problems with village leaders who did not successfully collaborate with traditional authorities. In Nolloth, where the traditional authorities function within the new system, the *sasi* institution is strong.

The rituals and knowledge of *sasi* are traditionally passed on from father to son within certain lineages, for example, through that of the head of the *kewang*. The rituals are secret and involve an almost extinct indigenous language (*bahasa tana*). In order to preserve traditional *sasi*, it is imperative that the process of passing down of knowledge is perpetuated. Many youngsters, however, have lost interest in *sasi*. The process of 'modernisation' accelerates as the younger generations leave to study in Ambon city where *adat* is regarded as a superstitious belief. There is a risk that when 'the keepers of *sasi* knowledge' die, they will take their knowledge with them. The support and participation of the younger generation, therefore, is necessary for the success of *sasi* as a viable management institution.

7.6.4 Leadership

Before 1979 the position of village leader was hereditary; nowadays the village head is elected by the people. Where government officials lack knowledge and are poorly informed about village issues, decision-making may rest almost exclusively with the village head. In principle, the village head is elected for four years. Yet, elections can be subject to manipulation and in other cases the people automatically 'elect' the legitimate (traditional) village head. The modern village head may therefore hold a very powerful and authoritarian position and as such he is also a key decision-maker in the *sasi* institution.

Our results support those of Riedel (1886) and Volker (1921) who maintained that compliance to *sasi* rules depended largely on strong and tactful leadership. The village head must be honest and respected or *sasi* is undermined. Local legitimacy is very important and this still stems largely from being part of the *raja* family line. In Haruku, for instance, the village head is not a long-term resident of the village and suspected to represent the interests of the

pro-mining lobby (see section 7.7). Hence, although he is formally elected, he lacks the legitimacy to play a leading role in *sasi*. Nolloth, on the other hand, is a fine example of a situation where the village head was elected because he *is* the *raja*. This allows him to lead the formal village government and to also be fully and legitimately involved in traditional ceremonies.

External interests may influence the election of a village head, as was reported in Haruku and Hutumuri. Elections can be manipulated either in favour of or against traditional leaders. Under the Indonesian system, all candidates must be screened and approved by the government. At this stage, popular candidates may be disqualified, or some votes may simply be neglected during the election process. So, on one hand lingering *adat* structures may make nonsense of the concept of democratic elections, while on the other traditional leaders with broad popular support may also be vulnerable.

7.6.5 Boundaries

Marine *sasi* is generally applied to shallow inshore areas. Outside the *sasi* area, other parts of the village territory, including deep water beyond the fringing reef, may be rented out to outsiders. Generally, boundaries of the *sasi* and other rented areas are clearly defined, have remained largely the same over the years, and are generally acknowledged. Fishers may accept areas of restricted access without complaint, but they do have reservations. For some non-*sasi* rented areas, the lack of legitimacy is compensated by a strong enforcement mechanism. Crucial in acceptance of boundaries of restricted areas are legitimacy of the leaders, direct benefits for the excluded users and the presence of a *kewang* (local enforcers).

7.6.6 Enforcement and compliance

Enforcement of *sasi* regulations is carried out by the *kewang*, the police, and/or the village government. In Nolloth and Haruku the *kewang* is strong and plays an important role in the enforcement of regulations. In coastal villages there is still a firm belief that ancestral spirits and God guard the *sasi* regulations and even in cases where the village government is responsible for enforcement, traditional sanctions can still play a role. 'The offender can be lucky and escape from the *kewang* or the police, but he still may get sick. Before long, he will seek the church minister or *tuan negeri* [in more traditional villages] to confess his mischief, because only a prayer or ceremony can relieve him from his burden (Abraham Pattypelu, fisherman from Tuhaha).

The traditional *kewang* is highly legitimate and not in the least because they enforce the law without showing favouritism. The police have the formal authority to implement the rules, but they are felt to act arbitrarily and therefore not trusted by the people. The effectiveness of the police is also hampered by the fact that they reside far from the village and when needed, they take too long to arrive. In villages that have no active *kewang* enforcement is difficult.

Formally, enforcement authority has shifted from the traditional enforcers to the village government. In some Christian villages they sought support from the church. In Nolloth, for example, the village head and the *kewang* closely collaborate with the church minister who is present at *adat* ceremonies including those of marine *sasi*. In non-*sasi* villages the church was not seen to play a role in supporting enforcement of fisheries rules.

Where *sasi* is functional, compliance with fishing rules in general is higher than in non-*sasi* villages (Novaczek *et al*. 2001). Non-compliance by local villagers is not usually a threat to the *sasi* institution, but is a sign of decline which is likely based in problems at the collective-choice or constitutional levels. Non-compliance may also be directed at an authority figure rather than at the *sasi* institution *per se*. Non-compliance by either locals or outsiders and which is not effectively controlled by the *kewang* is a threat to *sasi* because it is an incentive for people to abandon local management. Although usually intrusion in *sasi* areas is low, in times of economic and political stress the rate of non-compliance can increase.

7.6.7 Externalities

In and out-migration and (limited) tourism have no impact on village demography and appear to pose no threat to traditional institutions. Tourism in Haruku, stimulated by *sasi* ceremonies, may even help support the institution. Compared to the villages on Ambon, the communication and transportation links of the villages on Haruku and Saparua are limited. By contrast, Ambon Island villages (Seri and Hutumuri) are heavily influenced by their proximity to Ambon city. It is here that the loss of *adat* ideology and tradition is largest and appreciation of *sasi* the least. Apparently, the greater involvement of people in the process of modernisation and globalisation affect the appreciation that people have for *sasi* and traditional structures. This is an important aspect to take into account when reinstitutionalising *sasi* or developing a comparable management institution that must be widely applicable.

Pollution and resource degradation resulting from modern development also pose a challenge to local resource management. The villages on Ambon see their resources decline due to pollution from fish processing and plywood factories. The environmental impacts of these operations, however, are such that they would be beyond the control and influence of a traditional style village *kewang*. Revitalized local institutions require information management, networking skills and links to government departments that have jurisdiction in environmental protection.

An example of the impact of large-scale development is Haruku, a village that is influenced by mining exploration for copper, silver and gold. This enterprise seriously affects the political stability in the village and also emphasizes the limits of a village-based management institution that is not linked

to higher levels of government. The *sasi* institution does not offer villagers the ability to intervene in regional development planning and licensing of mining operations. The *kewang* is powerless to prevent pollution from mining activities affecting *sasi* resources, and there is no provincial or national management body to which they can appeal.

National laws and programmes are implemented through the provincial, district and sub-district government offices, but information on fisheries and environmental law rarely reaches the village level. Knowledge of fisheries regulations is fragmented and generally fisheries regulations are poorly implemented. There are no government patrol boats in the area, and where it comes to protection of fishing rights, the villages are left to their own devices. This may motivate people to work together in defence of local resources. On the other hand, if *sasi* as an institution remains disconnected from governmental power centres, people may give up local operational rules because they are ineffective against externalities.

7.7 The revival of *sasi* in Central Maluku

At this moment, fisheries management is not yet a burning issue in most villages because reduced catches are compensated by high fish prices. Few village respondents have any clear idea of what fisheries management would entail, and rather think that the answer to declining catches is to upgrade their boats and gear. Nevertheless, all fishers in *sasi* villages said that *sasi* is useful and important, as did 90% of fishers in villages where *sasi* is being revived and 70% of fishers in non-*sasi* villages (Novaczek *et al.* 2001). In 14 villages, respondents expressed their desire to reintroduce *sasi* (land, marine or both), or strengthen existing *sasi* practices. Plans for revitalization were found in villages of all sizes and on every island.

The tendency to revitalize *sasi* is fed by the appreciation of *sasi* by the people, not just as a management system, but as a cultural phenomenon. In Nolloth and Haruku, where *sasi* is still strong, people explained: '*Sasi* has a spirit, and everybody carries it because it is adat and part of our culture.' It is at the constitutional level that *sasi* as an institution has its strongest resilience. The constitutional rules of *sasi* are based on and part of *adat*, and because they cannot be separated from the local culture, it is at this level that *sasi* as an institution has its strongest resilience. The embeddedness in *adat* explains why *sasi* is still spiritually and ideologically significant, even where the practical execution of *sasi* has vanished.

In Hulaliu and Tuhaha the village elites are seriously attempting to revitalize *sasi*. In both cases the reason for revitalising *sasi* has less to do with its spiritual significance than with the possibility of controlling common property

resources to generate government income (see also von Benda-Beckmann *et al*. 1995).

In analysing the revitalisation processes, it pays to look back to what caused the loss of operational *sasi* in the first place. The main reasons for the collapse of *sasi* in both Tuhaha and Hulaliu were political problems, lack of trust among village leaders, and the subsequent withdrawal of the *kewang*. However, even though the practical execution of *sasi* was abolished, *sasi* remained part of the village ideology. The process of revitalisation builds on this cultural base and re-establishment involves reinstallation of the traditional authorities and reactivation of collective-choice and operational rules. *Kewang* members have to be chosen and inaugurated, tasks delegated between the formal and traditional authorities and operational rules designed. To be successful, however, the proponents of *sasi* renewal will have to pay attention to history and be careful to avoid past practices that led to breakdown.

In recent years local NGOs, such as Yayasan Hualopu, have been working in the Lease Islands. They provided villagers with information on sustainable fisheries development and encouraged local leaders to embark on the management of village territorial waters. In 1997, for example, Yayasan Hualopu was engaged in a program of mapping village marine territories and facilitating the development of local management plans. In this work they tried to capitalize on the basis that *sasi* provides and encouraged the reinstallation of *kewang*s and the revival of the island-level institutions (*latupati*) with an emphasis on conflict resolution and management planning. They were supported by a number of academics from Ambon-based universities, some Fisheries Agency staff, and others from the government research institute LIPI, also based in Ambon. The general plan was to promote development of a new law at the provincial level which could give legal recognition to the right of villages to enter into marine resource management and erect *kewang*-style management organisations. The aim of these supporters of *sasi* is clearly resource management and conservation.

Hence, in the process of revitalization there are three streams of thought that must be reconciled: the wish of the village fishers to preserve *adat* culture and share in the benefits from fisheries resources while protecting their territories from outsiders; the desire of local governments to extract resource rents; and the push by academics, environmentalists and managers to develop viable local fisheries conservation and management.

7.8 Conclusion

Before the 1970s a large number of villages lost *sasi* due to post World War II social, administrative and economic change, internal village conflicts and other reasons that were difficult to trace (Novaczek *et al*. 2001). The more recent breakdown of *sasi* has occurred in two distinct periods and villagers are able to articulate reasons for decline in their village.

The 1970s, at the eve of the introduction of the new formal government structure (Law No. 5, 1979), was one period of decline. A fundamental factor in the loss of *sasi* was confusion or conflict in the village or between village authorities, which undermined the legitimacy of the village leader or the institution itself. This decade was one of rapid economic growth, poverty alleviation programs in the villages and social change. Political instability and/or a dysfunctional *kewang* invited non-compliance and led to abandonment of operational rules. *Sasi* being taken over by the church, either because of such conflicts or in an attempt to improve compliance, was a common scenario. The church, interested only in land *sasi* on coconuts, did not get involved in marine *sasi*, which in some cases then declined.

The 1980s was a period of relative stability. Villages where *sasi* was alive and functioning remained stable. In some villages there was a tendency to revitalize *sasi*.

The 1990s is a period of further decline of *sasi*. The period between the 1970s and 1990s covers one generation. Modernization and commercialization as a result of improved communication infrastructure and education and the expansion of market relations, influence the local culture and especially younger generations. The generational change, together with the rapid rate of social, economic and political change in Maluku in the 1990s is most likely the reason why *sasi* is now suffering such relatively rapid losses.

The case studies underscore the inventory evidence that contemporary decline of *sasi* stems often from conflicts (see Novaczek *et al*. 2001). Conflicts can in some cases be related to the social change that resulted from the introduction of the new village structure by the national government. Also, the election system has opened up possibilities for opportunists with vested interests to take the position of village leader. On the other hand, where traditional authorities (*saniri negeri*) merged into the new government, *adat* and *sasi* have remained a significant aspect of village life. Overlap between the traditional and formal government proved to be essential in the prolongation of *sasi*.

The continuing presence of *sasi* is affected by village size and proximity to the urban center Ambon. Ostrom (1990) writes that the likelihood of users

designing successful common property institutions will be improved if the group is relatively small, stable and homogeneous. Our research confirms this, for *sasi* is most resilient in homogeneous villages of fewer than 3000 people which are found in the outer region (Seram, Saparua, Haruku and Nusa Laut). Villages close to the capital Ambon, where *sasi* no longer functions, have exceeded this critical size, become heterogeneous and shifted from subsistence fishing and farming to large-scale fishing and urban employment.

Of all the forms of *sasi*, marine *sasi*, though less generally prevalent, appears to be relatively robust. Whereas *sasi* generally has suffered severe losses in recent years, marine *sasi* has been relatively stable and even shows signs of revitalization in the 1990s. This revival comes basically out of the heartfelt attachment of people to *adat* in general and *sasi* in particular, but also the commercial value of marine products such as *Trochus niloticus*, other shellfish and sea-cucumber for foreign markets is an important incentive to keep or reinstitutionalize *sasi*. The process is further being facilitated and reinforced by intervening NGOs, government and academic supporters who see the potential value of *sasi* as a resource management system.

The church also has the potential to play an important role in marine *sasi*. Church *sasi* derives its strength from the strong religious beliefs of rural villagers. The church is more stable than ever-changing village governments. Church *sasi*, when applied to coconuts, provides direct individual benefits to the people and so is valued. Past shifts of authority over land *sasi* from *adat* to the church helped to shore up the effectiveness of the institution when the *kewang* lost enforcement capacity. In many cases, villagers believe that the threat of sanction by God is a more powerful deterrent than the sanctions imposed by the *kewang*. As seen from the inventory (Novaczek *et al*. 2001), where *sasi* is taken over by the church, *adat sasi* as well as marine *sasi* may be lost. However, Haruku and Nolloth provide examples where introduction of church *sasi* actually strengthened the local institution. Therefore, in *sasi* systems that are being revitalized, the church can play an important supporting role.

In some Muslim villages, *sasi* has evolved away from *adat* and become more of a commercial transaction between the village government and whoever wins the auction for resource harvesting rights. Ceremonies and inherited positions have been abandoned, and religious leaders also have not developed a direct role in the institution. Nevertheless, this also appears to be a stable and resilient institution. The benefits and drawbacks of this form of *sasi* require further investigation, but the performance analysis (Novaczek *et al*. 2001) did show that this sort of arrangement leads to problems in compliance when local fishers see benefits accruing only to elites.

Where the people do not expect to benefit directly, they seem not interested in revitalization of *sasi*. A lack of transparency in distribution of benefits further hampers the process. There is a risk that in villages where *sasi* is being used as a tool to extract resource rents that *sasi* then turns into 'a government thing' controlled by local elites. This is a disincentive for fishers to follow the new *sasi* rules.

Because the constitutional rules are part of *adat*, and '*adat* is something that can not be changed' as village officials in Nolloth stated, the process of revival concerns the re-establishment and adaptation of operational rules (harvest regulations, access rules) and collective level arrangements (re-establishment of the *kewang*). *Adat* still forms the basis of *sasi*, but a redefinition of responsibilities and involvement of non-*adat* institutions, i.e. the church, the police and higher government levels, is possible. Such adaptation of the constitutional rules carries certain risks and must be advanced with care and tact.

It was clear that *sasi* flourishes where the village leader is legitimate (*kepala adat*) and where he collaborates harmoniously and honestly with *adat* leaders and the church. Ostrom (1990) mentions reciprocity and trust as important conditions for successful common property institutions. From our study we would add legitimacy as another key factor for success. Apparently, the discrepancy between the theory of formal administrative structure and the *de facto* power structure that involves traditional authorities, makes village politics susceptible to manipulation and instability. Amendment of the law on village government (No. 5, 1979) may be required to accommodate the need for legitimate *adat* authority figures in rural villages and increase stability of local government.

The 1990s appear to be a critical decade, i.e. *sasi* must adapt to modern society or it may, at the operational level, cease to function. According to Ostrom (1990) well-functioning local management systems are dependent on the enforcement and protection and legal recognition of local rights by higher levels of government. As a village organisation active in enforcement, the *kewang* is more functional than the police. However, the *kewang* has never obtained formal enforcement powers. In cases where the *kewang* is being revitalized, their mandate needs to be formalized, and the *kewang* and police need to collaborate within a legal construction under provincial law. One possible model is that of Itawaka village, where as a result of a village proclamation in 1995, the *kewang* became part of the official government. On the other hand, an arms length relationship with local government also has certain advantages. Various models need further investigation. Wherever the local institution is placed, it will still require legal recognition and support from higher government levels.

A shared notion of the relevance of the institution stimulates a common objective to maintain it, in spite of external influences and in a situation where

the temptation to abuse the system for personal benefits is strong. The extent to which external factors affect the social structure in the village depends on the feedback mechanisms, i.e. the degree to which the local institution itself can mitigate the effects of external perturbations. Holling (in Berkes and Folke 1998) speaks in this context of adaptive management. *Sasi* has already outlived repeated predictions of imminent demise (Volker 1925; Cooley 1962) and is clearly both adaptive and resilient. There is therefore hope of rebuilding the institution in the form of a modern element in co-management, in which the needs and aspirations of the various proponents (fishers, local governments, *adat* leaders, environmentalists, fisheries managers) can be successfully accommodated.