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Beek, W.E.A. van; Avontuur, S.

Citation

Beek, W. E. A. van, & Avontuur, S. (2003). Dynamics of agriculture in the Mandara Mountains: the case of the Kapsiki/Higi of northern Cameroon and north-eastern Nigeria. In *Man and the Lake, Proceedings of the 12th Mega Chad Conference, Maiduguri 2nd - 9th December 2003* (pp. 335-381). Maiduguri: Centre for Trans-Saharan Studies. Retrieved from <https://hdl.handle.net/1887/9626>

Version: Not Applicable (or Unknown)

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**Dynamics of Agriculture in the Mandara Mountains:
The case of the Kapsiki/Higi of northern Cameroon and north-
eastern Nigeria¹**

Walter E.A. van Beek & Sonja Avontuur

Resumé

**La dynamique agricole dans les monts Mandara : le cas des
Kapsiki/Higi du Nord Cameroun et du Nord-Est nigerian**

En écologie humaine la discussion entre les Néo-Malthusiens et l'école de l'écologie culturelle - surtout représentée par Ingold - se concentre sur la notion de « carrying capacity » et sur les possibilités d'intensification des systèmes de production compte tenu des dangers de surexploitation et de dégradation de l'environnement dans un territoire par définition limité. Dans ce débat, Ingold a démontré que les notions d'habitation et de territoire sont d'ordre culturel, ce qui rend difficiles et superficiels les discours habituels sur la relation homme/terre.

Les monts Mandara constituent un terrain privilégié pour mettre à l'épreuve les deux thèses en question. En dépit du caractère grandiose de ces montagnes, la définition de l'environnement y est compliquée. Dans cette histoire écologique du terroir des Kapsiki et des Higi, à cheval entre le Nigeria et le Cameroun, qui s'étend sur un siècle entier, l'articulation de l'agriculture et des autres usages des ressources dépend des forces politiques, économiques et sociales générales de la région. C'est l'histoire politique et économique qui définit le territoire. Cet article retrace l'histoire de l'habitat sur un siècle, divisé en périodes précises, où la pacification, la colonisation et la néocolonisation de la région fournit les paramètres dominants, sur lesquels se greffent les développements techniques de l'agriculture, la démographie, l'inclusion dans l'économie régionale et nationale ainsi que le tourisme. Chaque période se distingue par un usage particulier des

¹ The Kapsiki have been studied by Walter van Beek in 1971, 1972-73, 1978, 1984, 1989, 1994, 1999 and 2002, financed by WOTRO (Netherlands Foundation for Tropical Research), Utrecht University and other funds with a total field stay of about two years, and by Sonja Avontuur in 1994 financed by the VSB Foundation. The authors thank i.a. Nicholas David for his helpful comments.

ressources et redéfinit le territoire kapsiki à sa façon. La conclusion souligne l'étonnante flexibilité de l'environnement, et la créativité de la population dans son utilisation du terroir.

1. Introduction

Landscapes, territories and environments are products of interaction by human and non-human processes, interfaces between what traditionally in anthropology has been dichotomised under the headings of "culture" and "nature". In recent ecological anthropological writings this latter dichotomy has been called into question, and rightly so. In his *The Perception of the environment*, the synthesis of a long standing research programme, Ingold (2000) argues that not only are landscapes and environments temporal, but also they are intricately intertwined with the dwellers in the landscape. "Human beings do not, in their movements, inscribe their life histories upon the surface of nature as writers do upon the page; rather, these histories are woven, along with the life-cycles of plants and animals, into the texture of the surface itself" (Ingold 2000:198). Though in his examples Ingold highlights those livelihoods which interact most directly with a host of other populations in a given environment, such as hunters/gatherers and nomads, the same holds as well for agriculturalists. The dependency of humans on their environment is different, but not fundamentally so, as Ingold states:

"[...] Both humans and animals and the plants on which they depend for a livelihood must be regarded as fellow participants in the same world, a world that is at once social and natural" (*ibid.* 87).

From this angle I will look at one fundamental debate within ecological anthropology, i.e. on population growth, intensification and their consequences. On the one hand the "Neo-Malthusians" hold that population growth leads to agricultural intensification, which will change the habitat. This habitat modification leads to increased production and to further population growth. Eventually this positive feed-back string will deplete the natural resources and result in loss of biodiversity (Scoones 1999). This is the doomsday scenario of many planners and developers, a script at the basis of much political bickering between the North and the South, especially at the Rio and Kyoto world conferences.

On the other hand, Boserup (1981) and others, such as McNetting (1993), view intensification - often in the form of small holder agriculture - as something else than a *cul-de-sac* of development.

They doubt whether demographic growth is a steamroller that will flatten out all local, small scale practices in favour of the "economics of scale", triggered also by technological innovation. The interaction between the basic triangle of land, population and technology offers, in their view, scope for various forms of intensification, types of land tenure and labour management, with an open choice of available agricultural technologies, and as such should not be approached the fear of intensification. As McNetting puts it, "her [Boserup's] model appears to emphasise the plasticity of the physical environment in housing different degrees of land-use intensity" (McNetting 1993:275). For instance, land "is not a resource of fixed quantity and quality that conditions both production and population size" (*ibid.* 278). With population growth as a relatively independent variable, the responses of farmers to these internal pressures, to the transformation of markets, and the withdrawal of states are a product of cultural creativity in balancing possibilities, options, and needs at the grassroots level.

The fact that farmers, in Ingold's terms, do not "use" their environment but "dwell the landscape" implies in practice that they respond adaptively to population growth, through intensification and investment in their soils through irrigation, terracing, diversification, multi-cropping, manuring and other use of domestic animals (see also Zuiderwijk 1998). Variety is the name of the game, as the solutions of one eco-zone do not tally with a second one; e.g. even in two semi-arid regions such as Sahel West Africa and South West India, through differences in soil, rainfall pattern and available labour have to rely on different intensification techniques (McNetting 1993:283). Multi- and intercropping, soil enrichment, mulching, agro-forestry, all are used in various mixes. The types of responses may resemble, the total adaptive package of the small holder will be quite particular.

The following study aims at illustrating two points. The first is the flexibility of a population's response to its changing environment. The second is more fundamental, and relates to Ingold's approach. Behind the Boserup/Netting approach lies an underlying discussion between "equilibrium" and "exploitation" in ecological analysis. In their paradigm, the relation between population and habitat is dominated by negative feedback mechanisms, such as population control, conservation measures, either direct or as a part of a less conscious cultural baggage, or such as indigenous knowledge systems and investment in the productive environment. Netting's study is the best example here. It is in fact a rather optimistic scenario where mankind is wise enough (or experienced enough, or "culture" has grown wise) to reset the beacons when the tide runs down. In that scenario a more sophisticated investment in the habitat, a more specific knowledge

and additional outlets for labour make for sustainability in a changing ecology.

The Neo-Malthusian paradigm, cited first, is the doomsday scenario, the old Malthusian idea that is so hard to erase: population growth will exceed resource growth, and our old planet Earth is suffering from a plague of humans. Though our approach is definitely on the side of flexibility and creative responses, our point is that also the Boserup/McNetting paradigm tends towards acceptance of a series of dichotomies that have become questionable: the oppositions between nature and culture, between man and habitat, between system and chaos. Recent work in ecology, the "new ecology" (Scoones 1999, Ingold 2000) tries to transcend those dichotomies. Croll & Parkin (1992) already spoke about "cultural understandings of the environment" as a moving factor; Ingold (1992) tried to develop a new terminology with his "affordances" in order to "shift the focus of an ecological anthropology away from an equilibrated, eco-system-society-based research agenda towards individual responses to hazards" (Scoones 1999:484). From the biological side, a similar shift occurred: "We can no longer assume the existence of a static and benign climax community in nature that contrasts with dynamic, but destructive, human change" (Cronon in Scoones 1999:491). What results from this is the approach of "environmental histories" (Scoones 1999), with as a central notion the cultural construction of the environment as well as a spatial-temporal construction of culture.

What follows is an attempt to an environmental history of a particular environment-cum-culture, in order to show the mutual stipulation of culture and environment. The choice is a group with a definite territorial confinement, with an adaptive technology and intense local knowledge in an environment that seems stubborn and inhospitable. McNetting's prime examples come from the mountain peoples he has studied: the Kofyar in their Central Nigerian hills (McNetting 1968, 1989), and the Swiss in the Alps (McNetting 1981). One area where the processes of intensification and its reverse - the shift to extensive land-use - can be studied is a region similar to the Central Nigerian plateau, i.e. the Mandara Mountains of North Cameroon and North East Nigeria (cf. Davis Stone 1997). In recent years a considerable amount of research has been done (van Andel 1998, van Oostrum 1993, Zuiderwijk 1998, Avontuur 1997, Boulet 1975, Boutrais 1986, Mueller-Kossack 1996, Seignobos 1982, Barreteau *et al.* 1988, Sterner 1997). Through these studies most of the stages of the processes, starting from a moderate population density, through a mounting pressure to full blown intensification, can be seen, with a subsequent turn to extensive agriculture when the population is moved to more

open resources. The group in question is the Kapsiki-Higi² conglomerate that straddles the border between Cameroon and Nigeria, on the central-Western part of the Mandara mountains.

2. Initiating a granary

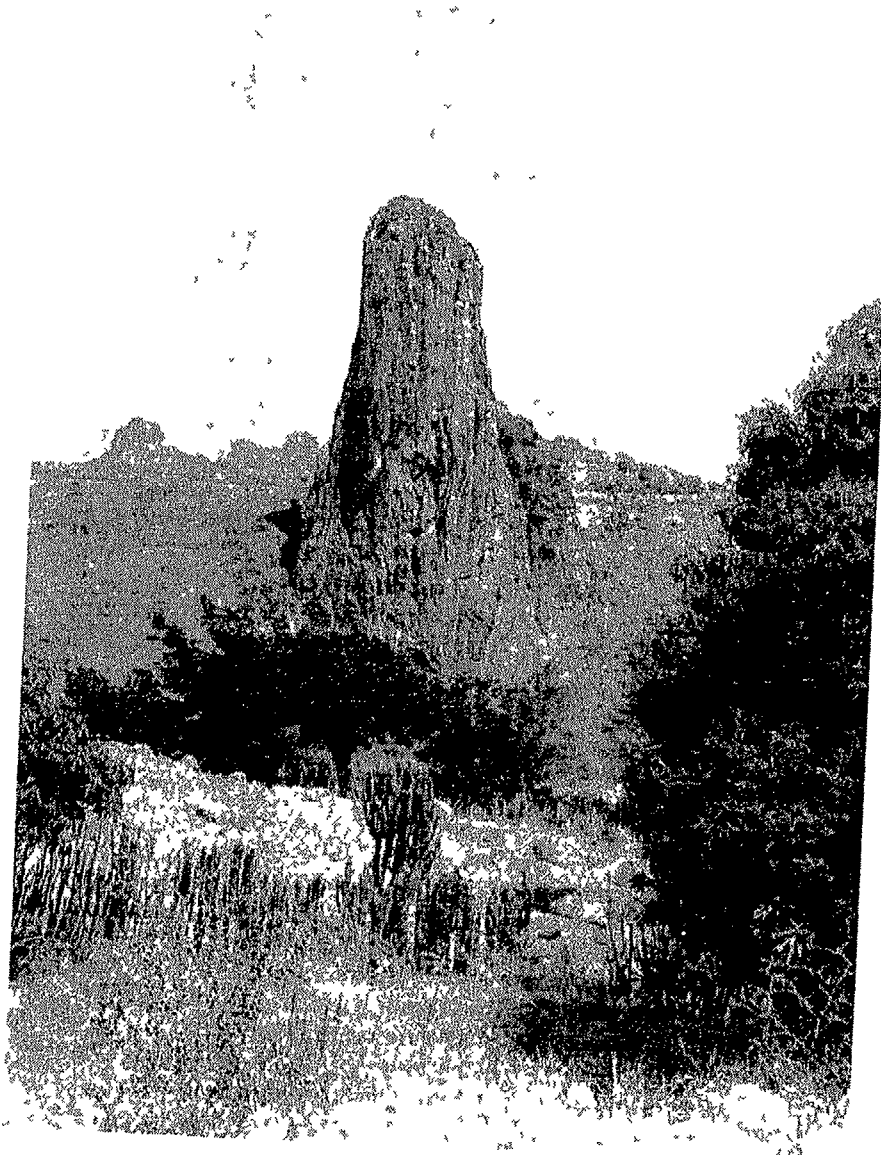
The Kapsiki³ habitat in Cameroon centres on a plateau, at an altitude of 1000 m, bordered by mountain ridges up to 1300 meters. The plateau itself, some 40 x 50 km, is dotted with smaller and larger volcanic outcroppings that give the scenery its very peculiar "moonlike" atmosphere. On the western side, in Nigeria, where the Higi live and cultivate on the mountain ridges as well as in the plains to the west, towards their Marghi neighbours, agricultural practices vary with the type of field, as we shall see, but on the whole Kapsiki agriculture is quite characteristic for the area. The rain-fed Kapsiki cultivation has sorghum (*Sorghum vulgare*, *Sorghum bicolor*), millet (*Pennisetum glaucum*), Eleusine (*Eleusine coracana*) and maize as staple crops, intercropped with groundnuts (*Arachis hypogea*), bambara nuts *Voandzeia subterreana*, beans and tiger nuts. Smaller crops involve sweet potatoes, black potatoes, yam, red sorrel (*Hibiscus Sabdariffa*), tobacco, garlic, peppers and occasionally manioc. Fruit trees, pepper bushes, and some sugar cane in wet places supplement their diet. The ⁴Kapsiki-Higi number about 200.000, the greater part in Nigeria. Their overall density is between 30 and 50/km². So, land is not very scarce and rain-fed agriculture, without many inputs, is productive enough to feed the population. Cattle and other livestock, goats and sheep, form an important feature of the agriculture. Both the cultivation of land and cattle raising are important in the Kapsiki value system, as they are in their symbolism. How central this mixed husbandry is, will be shown in our first case,

² The group in question straddles the border between Nigeria and Cameroon. In Nigeria they are called Higi, in Cameroon Kapsiki. In this article we shall use "Kapsiki" for both parts of the group, for three reasons. First, it is the better-known name. Second, most research was done from and in Cameroon. Third, the term "Higi" is very derogatory, meaning "locusts", a name given them by their western neighbours and former enemies, the Margui. Kapsiki and Higi often refer to themselves as "Margui", implying "black people" against the "brown" Fulani herdsmen.

3. Population figures from Nigeria are less exact than the Cameroonian ones; so, it is hard to compare the two halves of the population exactly.

which is a celebration of agricultural success: the initiation of a straw granary (all non-referred data are from the fieldwork of both authors)

PHOTO 1: Gouria, typical of the Kapsiki landscape, 1984



It is January 1989 and the harvest starts coming in. Vandu Da, from the village of Mogodé, inaugurates his *tame* today, the straw-plaited granary that forms the centre of the Kapsiki household (van Beek 1991a). His friends, lineage members, and some neighbours have gathered in his compound and sit in the house entrance, chatting, commenting on the progress of the work. Some have started drinking already. The village chief, the ward chief and the head of the clan responsible for the village sacrifice are among them, as are some elders of the sub-lineage involved.

The *tame* itself, a plaited granary - one of the best examples Kapsiki plaiting prowess - consists of a straw cone, man-high with the opening on top (van Beek 1996). The contraption consists of several layers forming an inner cone, sewn to a double bottom, and with a strengthened collar. The week before, Viyima, a good plaiter and a close patrilineal kinsman of Vandu, had fastened the double bottom, the most difficult part of the work. The last phase, in progress now, involves sewing the second layer to the cone itself and fixing the collar. Two of Vandu's younger brothers are inside the granary, and two experienced plaiters, one a neighbour, one a sister's son of Vandu, from the outside apply the last layer and rope sew the last bands to the main cone with straw rope. One of the helpers is a recent initiate, *gewela*, as should be the case. He makes a mistake and is scolded, but not too harshly as his presence is more essential than his plaiting skills. The men have started early in the morning, as the work has to be finished at noon; during the "initiation" the sun has to shine straight into the *tame*. Demashi, the other boy inside the *tame*, comes out as the others will clean it before use. Teri Sha, Vandu's mother's brother's son, wants to help Demashi out, but others keep him back: "Do not touch the *tame*, Teri, you. You just sit at the roadside and you never cultivate. Just keep plaiting the cord, and leave the *tame* alone". Good-humouredly Teri Sha desists; he indeed never cultivates and as a cattle-rich man with no family, he can afford a leisurely old age, selling off his cattle one by one. The village chief retorts: "We sit also, and we never touch the *tame*. Does that mean we don't have to cultivate either?" Demashi tells them: "A man should have a *tame*, a real man. Even with no *sorgo* in it, better to have an empty *tame* than none at all." I do have a *tame*", tells Teri Sha, "and indeed it is empty." Lêwa, lineage elder, teases the popular old man: "You just sit at the roadside; how could your *tame* be anything but empty". "Do I sit alone" says Teri Sha, "look at the others!" "Indeed, Vasekwa (the older brother of Vandu) is always with you", Lêwa readily admits, enjoying the slight rebuff of his lineage brother, who struts around directing the work as if he owns the place.

The conversation turns to the bands of cattle dung to be put on the *tame*, the decoration and "initiation" of the granary. Comparing these with the *henci* (ochre markings) on the *gewela* (boy initiate), Lèwa remarks: "If the *gewela* is not marked with *henci*, who recognises him as a *gewela*". Three or four stripes on the *tame*?" someone asks. This *tame* is *kwalimale*, the men decide, as it has a female form - round and squat - so it has to be four. If long and slender (*kwaliza*, male form) it would have to be three. There is not too much cow dung for the decoration, but the bands at the bottom should be done anyway. Meticulously Lèwa applies them, the rest of the men watching intently. Teri Sha brings some thornbush leaves from the *safa* (*Combretum sp*), and one special grass (*haze*, *Cymbopogon*); these plants are as essential in the inauguration of the granary as they are in the boys' initiation. One of the young men remarks that this is the first time he sees a *tame* "married". "Yes, of course, nowadays the *tame* usually is bought" explains Teri Sha, "then there is no *wume*" (bride price, initiation).

With the dung decoration in place and the mouth of the granary adorned with *safa* and *haze*, the *tame* is now an initiate, and a final blessing is due. Village officiator Deli Zera selects two pebbles, and imitating sheep and cattle sounds: *Mèè, mèè, wuwu, wuwu*, throws them in. The ritual part is now in progress, but indeed some younger ones have partial knowledge of it. One son of the owner brings *lèndè* (sesame in indigenous vinegar), but the older men explain that that is only used when the *tame* is filled for the first time: then you put it on the rim, saying: "*melè na*" (be healthy). "Not now, take it away!" The neighbourhood women watch from a distance, as this is a men's job. Deli then gets some sorghum mush with sauce (*rhedle*), puts two bits onto the "mouth" of the granary and addresses it: "The man has to fill you with sorghum and get goats. You have to pay a lot of things; you must be filled; please keep us cool". He then calls Vandu, the owner, from the edge of the compound and has him stand next to the *tame*: "Here, take it; I have to feed you and do not chew. Just swallow it *fedahè* (idiophone for swallowing)". Deli throws some pebbles and goat dung into the *tame*, again imitating the bleating of the goats and mooing of the cattle. The pebbles in question are called *pelè ha*, sorghum stones.

Afterwards, the men try to estimate the eventual capacity of the *tame*. Teri Sha thinks about 19 - 20 *kwaciga* (Kapsiki baskets) at first harvest, and after being filled a few times, up to 25 *kwaciga*: a good *tame*. But then, as most realise, the amount put into the *tame* is not always the same as the amount one can take out. Some *tame*, they explain to me, eat their own sorghum: "You can put in thirty, but only 20 will come

out. A good *tame* takes 20 and gives 30, but then you have to have good 'rhwè' (magic)."

PHOTO 2: Lèwa decorates the *tame* with cow dung, 1989



As with all Kapsiki rituals, the small ritual is followed by a communal meal and social drinking. In the *dabala* (the entrance hut), the workers get a special place. Deli calls them to eat with him: "I shall eat

the neck of the mouse, the rest is for you." All of them join in the special meal, as some field mice have been cooked specifically for this truly festive sauce. Some banter arises about someone who did not work but still eat mice: a *ndenzu* (lazy one). The workers eat all, taking two helpings. Teri Sha crunches a mouse head loudly and clearly. The other guests have other meat, and stress the importance of the mice: "Sauce with mouse is not to be slighted. Catching them is dangerous" [because of serpents who live in their holes]. Someone asks for the meat and pointing to two sisters sons vying for the rest of it, Teri Sha remarks: "Look, this is what we want. This is why we say that you have to work. But you youngsters you want just to stroll. Can you eat without cultivating? Can that man build a *tame* without cultivating? You may mock me now, but I have grown old with the Fulbe. In the past, we cultivated, we married. Now, with your father alive, you wander through the village, you frequent the Fulbe quarter, and your father suffers at home. He sees you return empty handed. Did you ever see the Fulbe become like us, black people? Who has ever tied the antelope skin to a Fulbe [sign of initiation]? After the rains, you all come to the cultivator. Why don't you during the rains? Then you are nowhere in sight."

These habitual admonitions and challenges to the younger generation go on for some time, till the beer is brought in. Then conversation is quenched in some serious drinking and less serious talk.

3. Why initiate a granary? Agriculture and wealth.

The "initiation" of the granary offers several clues to the Kapsiki situation, and to their symbolic system. The symbolism of the *tame* is both that of the initiation of boys and that of marrying a girl as for both processes the term *wume* is used, denoting bride price and adulthood, in short maturity and fertility. *Wume* is an indication of personhood more than anything else. Like male initiation and the *makwa* (the marrying of a girl), the *tame* is a source of pride for a Kapsiki man, a sign that he has succeeded in life, at least in agriculture. Having a *tame*, means having a real house, fields, harvest - being a real person. The symbols used are, however, much broader. A corpse is buried with the *safa* and *haze*, as an expression of personhood. So, the *tame* is a veritable person, a partner identity to the owner, just as it is gendered, male or female, irrespective of the owner. The partnership of *tame* and owner goes quite deep. In many ways, the grave the Kapsiki dig for burial, through both its form and its symbolism is equated with a *tame*, a granary (van Beek 1996). Symbolically, Kapsiki, both men and women, are buried in a *tame*; not a plaited one, it is dug underground, but a *tame* nonetheless, a kind of

alter ego. Initiation and marriage make someone a real person, a course through life towards full personhood that is to be rounded off with burial in a *tame*. So the granary is a second part of the personality, also initiated, also wed, and at the end united with the owner.

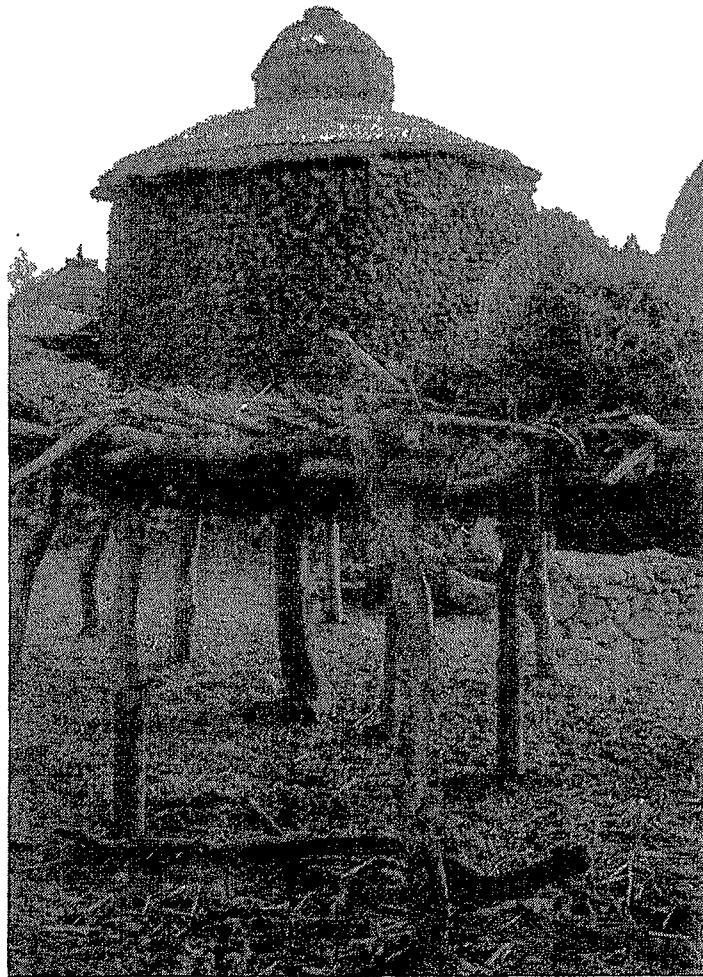
Sorghum is not just food; it is much more than just a staple. In many parts of this and other rituals, sorghum, and various other cereals, serves as the statement of fertility, life and security, in fact as riches, leading to other riches in Kapsiki society like women and cattle. But cereals are an important symbol of their own, as they represent all nourishment. The *tame* ritual never speaks of hunger or even food, but it does speak about wealth, goats, sheep, cattle and through these of women (van Beek 1991b). As usual, the ritual reflects a wished-for situation, one in which the everyday staple is not under pressure, and in which people can at least dream of wealth through food crops. A full granary is the basic security, and in many ways the only one. In many of their rituals the equation of a full granary, with sorghum, and security in life is expressed. Kapsiki fascination with the varying content of the *tame* is one of the expressions of their focus on the granary. The *tame* has his own ways (or her own ways): it may diminish or enhance the amount of grains put into it, it may eat or produce grain, waxing or waning of its own accord. Also, the smell of grain is valued, especially the smell of old grain. Among their many idiophones for smell (van Beek 1992a), one is for the valued smell of a recently opened *tame*; no smell is as pleasant and sought after as the smell of a granary where sorghum has been stored for years, its odour enveloping the owner in a feeling of security⁵.

Full personhood shows in wealth, in ritual portrayed as cattle. Among the Mandara cultivators, the Kapsiki own a fair amount of cattle and livestock in general, but cattle in particular are important. Cattle-related symbols appear in many rituals, the most direct one in the burial of the owner of a *tame* dies, who then will be clothed in the skin of one of his bulls (van Beek 1998). But, cattle also serve as an intermediary to transform material wealth into another kind of wealth: marriage. Livestock forms the bride price, an institution at the heart of

⁵ It is the plaited granary that gets all the ritual attention. Other types of granary are just as important economically, esp. the large adobe ones used by men and women for storage of cereals¹ and the small crops granaries used by women only, but they are never formally initiated. The *tame*, which also is the most exclusive Kapsiki type granary (Seignobos 1982:108) represents the extra, the surplus used to achieve status and a strong social position, in short the desired personality.

Kapsiki social organisation⁶. The term *wume* was used in the ritual, and this term also means bride price, so the notion of *wume* links human fertility with marriage proceedings (van Beek 1987) and eventually, children⁷, another kind of riches.

PHOTO 3: First storage of the sorghum harvest, awaiting the threshing 1997



⁶ In fact much more than the neighbouring groups in the Mandara Mountains, like the Mofu, Mafa or others.

⁷ The link between *wume* and children is so close as to warrant the term of "child price", van Beek 1987:48.

A central Kapsiki notion is the fleeting character of wealth. Though attainable through hard work, it is fragile, within reach but never secure. The *tame* should produce livestock and thus women, the principal sources of wealth, but of two particular kinds of wealth. The first is wealth in "people" (*ncélu*), the second wealth in goods (*gelepi*). Wealth in people means for a man to have many wives - who stay - many children, and also to have a fair number of siblings. Wealth in goods implies money, cattle, and other animals. Of the two, being rich in people is more fundamental, as a large family not only is a success in itself, but also is a kind of wealth that produces other riches. A *ncélu* will become *gelepi*; a *gelepi* can become poor over night: money is a fleeting resource, cattle are vulnerable. So the accent is on people. But in the Kapsiki marriage system with its extremely high instability, being married and staying married are not the same thing (van Beek 1987). Some men do succeed in having their women stay, and raise large families. Others are continuously striving for a full compound, never really realising it, while the "losers" among men are the *rhwemzhi*, the "célibataires" who throughout their lives, in vain try to retain hold over one woman or another. The brittle bonds of marriage do generate quite important differences between men, a point to be elaborated upon later.

Throughout most of Kapsiki history, the riches of children have been fragile too. The high rate of 660 out of 1000 children dying under the age of 5 (van Beek 1987) - reverberates in all Kapsiki dealings with young children: a man rich in children and women, can become poor over night. Cattle-rich people depend on the notoriously unreliable Fulbe for herding and on the production of the fickle grazing pastures. Money in whatever form or denomination is considered an even more ephemeral form of riches still: money just vanishes, bills disappear and banking accounts dwindle by themselves. Besides, who can trust people in cities? A major insecurity in Kapsiki life is fleeting wealth in all of its manifold forms. Though one can be reasonably sure of basic survival through agriculture, one can never be certain of enduring good fortunes.

One other theme emerged from the ritual, the relation with the Fulbe, who are traditionally the herdsmen of the area but also the administrative town elite. History has seen many wars and conflicts between the two groups, and though on the individual level the relations can be good, tensions still abound. For the Kapsiki cultivators, the town Fulbe are the epitome of the lazy, do-nothing administrators, who dislike agriculture, hate to get their hands dirty and despise cultivators. Though the pastoral Fulbe share the general stigma as non-cultivators, they are quite another matter as they are

considered expert cattle breeders, and are often guardians of the cattle of the Kapsiki as well (van Beek 1992b). These Fulbe are strange, weird, and dangerous, but as people of the bush endowed with knowledge and power belonging to that sphere of life.

In the ritual this came out in the association of agriculture with bush and danger: the mouse sauce (the only one with mice in it among the many ritual dishes of the Kapsiki), the conversation of the men as well as the admonitions delivered to the young men present. Agriculture used to be a dangerous enterprise, dangerous because of those Fulbe, dangerous because of the continuous threats of slavery and war, dangerous because of the bush itself. Only brave men could cultivate larger areas, and consequently only brave men could become rich. Of course, this is history but the memories linger on. It is the best remembered part of Kapsiki history. So the history of the agriculture largely follows the political history of the area, in fact it is in many ways that history.

4. War on the land: ecological history of the Kapsiki

As an old volcanic area the Mandara plateau and hillsides are relatively fertile, and can be cultivated on a permanent basis with few inputs and a simple pattern of crop rotation. Water holes are to be found all over the plateau and slopes, and though the slopes are not overly easy to clear, weeds can be controlled without too much difficulty. A good habitat compared to the surrounding sandy plains. Rains are more dependable in the mountains, where the soils retain water better, although the mountain slopes demand increased labour investment, as they have to be terraced if they are to be really profitable. So the mountains are well suited to a small-scale society practising labour-intensive horticulture with simple technology, keeping some goats, sheep and cattle.

This combination of defensible and cultivable slopes with a plateau well suited for both cultivation and cattle herding did not escape Neolithic eyes and surely attracted early Iron Age people. Metallurgy might have been crucial in substantially improving the Neolithic exploitation of the area, with higher yields, larger areas under cultivation, more intensive husbandry, and higher population density. Indeed, the mountains have been inhabited for a very long time. Neolithic remains are quite numerous (Martin 1973:1, David 1972, van Beek 1978:6), though the archaeology of the area is still young (David & Sterner 1987, MacEachern 1990). Neolithic bifaces are everywhere, often serving as ritual implements in present-day

religions⁸. Until the late Neolithic, people seem to have mainly settled on the plains with only a sprinkling of people in the mountains. Rains must have been more plentiful, game more abundant, and war and slavery were threats of the distant future. With the coming of the Iron Age, roughly 500 AD, and decreasing rainfall, the hills became more attractive, providing safety against external - and maybe even internal - enemies, and for the iron ore which was found in the mountain gullies. The mountains became both a refuge and a centre for iron production. Gradually the gravity of population shifted towards the mountains, where population density must have climbed slowly on the basis of a Neolithic exploitation from about 2000 BC, and an iron technology from about 500 BC (Martin 1973:1; David 1972; van Beek 1978:6).

A sign of long occupation is the extensive terracing everywhere in the mountains, especially in the north. Though people in heavily populated areas might be able to change their environment quickly, these terraces seem to have been made in the mist of collective memory; thus, the area probably was not densely populated at that time and building this agricultural infrastructure must have taken a long time.

One argument for old habitat exploitation is the genetic diversity of domestic cattle in the larger region. Nigeria and Cameroon count 17 indigenous subspecies of cattle, usually subsumed by the FAO as "West African Dwarf Shorthorn", a *Bos taurus*⁹ variety (Thys *et al.* 1998) usually called *muturu*¹⁰. Though in total less than 1 % of the bovine population (the large majority is the *Bos indicus* humped and long-horned variety), it has considerable genetic importance. Many of the races are highly resistant against sleeping sickness, and also are nutritionally well adapted to living in a poor environment. The Kapsiki in their mountain area have such a bovine race, that is well integrated in their culture (van Beek 1998). Its resistance against sleeping sickness survives interbreeding with

⁸ This impression of a long settlement is reinforced by evidence from food grains (David 1972:6, David 1998), and from early iron technologies (David *et al.* 1996, David & Robertson 1996). MacEachern in his overview (1990) stresses the relative absence of Neolithic sites (in contrast with artefacts).

⁹ The distinction *Bos taurus* and *Bos indicus* would imply a difference in species, but given the ease of interbreeding, they form two subspecies at most.

¹⁰ See R. Blench
<http://www.odi.org.uk/publications/wp122pdf/chap3and4.pdf>

PHOTO 4: Extensive terracing in Nigerian Higi country 1973



Bos indicus (Dineur & Thys 1998). This not only signifies a long genetic isolation (Thys *et al.* 1998:50)¹¹, but also a long involvement with domestic cattle, and may explain the deep integration of several mountain cultures with cattle, such as the Namchi and Dowayo (Seignobos 1998:61, de Garine 1998:123).

What do the Kapsiki themselves tell about their origin? For them any notion of group identity beyond the village level is of recent origin (van Beek 1986). The various villages that comprise the present-day Kapsiki/Higi conglomerate each have their own particular point of origin and migration history. Yet, on the whole, the points of departure for the migrations are either situated in the mountain area itself or in its close vicinity. The history of this area seems to be replete with small-scale movements, migration from one 'massif' to the next, the migrants easily becoming integrated into the loosely structured local organisation. One single cultic centre, Gudur, often is mentioned as a point of origin, but this too

¹¹ How long is difficult to guess, but among the Cameroonian Fali (south of the Kapsiki, Gauthier 1969) and elsewhere pre-Sao finds of domestic cattle have been found, both Iron Age (Marliac & Columeau 1998:345) and Neolithic (Gauthier 1998:36).

resides in the mountains; probably the ritual eminence of this place has engendered the migration traditions (van Beek 1982). Of course, oral history is often "present politics" and the fragmentation of tradition may simply be a result of the political fragmentation as such.

Two major processes of environmental change have come to the fore: the terracing of the mountains and the introduction of cattle. Both happened well before the historical period under scrutiny but changed the ecology, and represent two forces in Kapsiki ecology, intensification and extensification. Intensification, implying maximization of the output per unit of land, meant a high labour input in the fields, through terracing, while extensification, implying the maximization of output per unit of labour, tended to define in pre-colonial times the mountains as a grazing area.

The next major factor was war. Well before the period in question, the Mandara Mountains were a refuge from slave raiding. Before the onset of the Fulani *jihad* of the 18th century (Njeuma 1978), the Kapsiki must have populated the steep hillsides and the top of the granite outcroppings dotted over the plateau (van Beek 1982). Their villages were built with the compounds close together on the granite outcroppings on what is now the Cameroonian side, and on top of the hills or on the steep hillsides in what is now Nigeria. Defence against the mounted slave raiders, be they Mandara, Baghirmi, Kanuri, or Fulani, was of prime importance. Cultivation was feasible in close to the mountain strongholds, under close supervision from the village or in the relative safety of the inaccessible hillside. Water was a problem, especially on the outcroppings, but wells were found at the foot of most mountains.

Thus on their hilltops, the Kapsiki lived in isolated villages. Not only were the hillsides a defence against foreign marauders, the Kapsiki/Higi also fought each other at more or less regular intervals (van Beek 1987), and even engaged in fighting within villages as well. Villages fought their own wars between themselves (van Beek 1987, Otterbein 1968), and often captured slaves, who would usually be ransomed free by their kinsmen. A poor lineage, however, had to let its kinsman or -woman be sold beyond Kapsiki territory into the hostile Muslim empires of Mandara, Bornu or - later - Fombina. In the many fights within the villages poison was not allowed, neither could slaves be caught, as in case of casualties a blood-price had to be paid by the slayer¹². So, people fought with clubs and sticks within the

¹² This never led to reciprocal feuding, however, through a specific mechanism in paying the blood price. Among the Kapsiki the

wards and with knives and swords within the villages with the aim of wounding, but not killing. During most of Kapsiki history, the external threat, which did not have the sporting overtones of the internal fighting, was more serious. Muslim cavalries were on the whole a superior and better organised enemy. Thus, the definition of territory depended for a large part on the political situation, and for our ecological history of the past two centuries, we define the relevant five periods according to political changes: before 1880, 1880 - 1920, 1920 - 1950, 1950 - 1980, and 1980 till present.

During the first period, pre-1880, slave raiding, as well as internal slave hunting and warfare, must have been endemic at least from the days of the Sokoto Caliphate, in the early nineteenth century (Denham & Clapperton 1826¹³, van Beek 1988, MacEachern 1990). These raids seem mostly to have been large-scale enterprises, involving going into the mountains with a large cavalry. In many cases, the spirited defence of the mountain people was noted by the outsiders. Just above the village of Kamale an old earth ridge reinforced with the ever-present stones shuts off a narrow and steep gully, acting as a defence against the slave raiders and a limit to cultivable fields. A sultan of Bornu died during a slave raid into the Mandara Mountains during 1863. Still, losses must have outnumbered victories, even if the latter are better remembered.

In the period prior to 1880, the Kapsiki cultivated the slopes of the steeper hillsides and the sides of the outcroppings where their villages were situated. The degree of intensification is hard to establish. A view of the slopes of the main historical site of Mogode, *rhu ngwedu*, shows a considerable network of ridges and terraces, all dating from before 1880 - somewhat like the Mafa area but on a smaller scale (Zuiderwijk 1998). Agriculture, for the Kapsiki, must already have been connected with daring, bravery, and courage: the bravest had their fields at the greatest distance from the safe haven of the hilltop village.

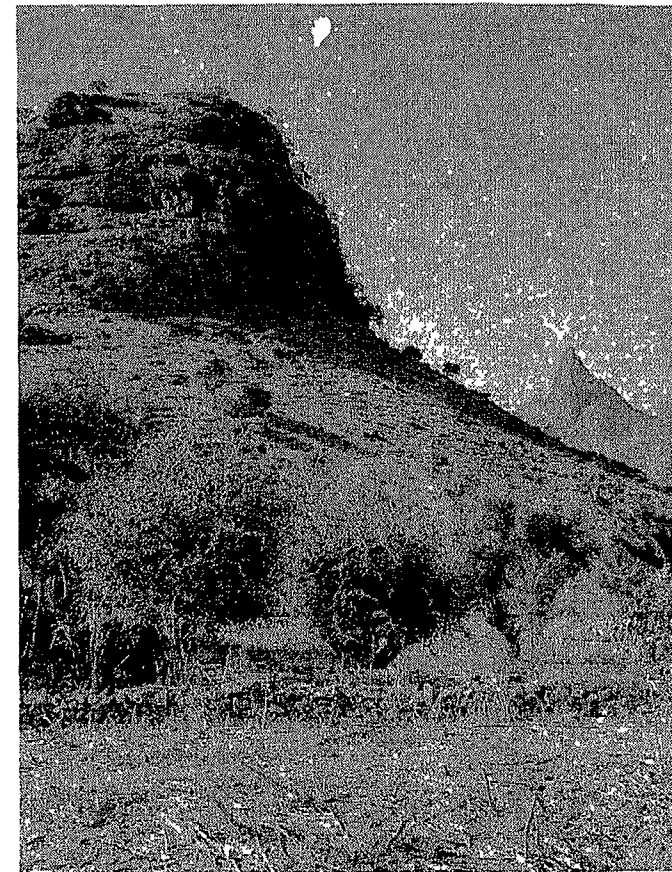
The general discourse on this period is couched in the terms of a primordial family, invoking the image of a very small community on the ancestral mountain during the times when the whole village could be housed within the three hectares of the mountain top. For them, the

mother's brother of the deceased received the blood price, and not his patrilineal kinsmen, which for the latter diminished the incentives for reciprocal killings: they would have to pay another blood price.

¹³ Denham is eyewitness to the planning of a slaveraid into the Mandara mountains in 1825, but which group is not clear.

ancestral village was composed of one extended family, with some incoming guests (van Beek 1978:415). The annual sacrifice on this mountain dates back to those days. In fact, the settlement at the top of the outcropping must be older. In the village of Mogode no sherds¹⁴ less than 350 years old have been found at the old mountain top, meaning that the *Rhu Ngwedu* Mountain had already been vacated before the start of the 18th century. However, the small sample of sherds and the religious constraints of the Kapsiki to research this area, preclude any clearer answer. Still, it is highly likely that most villages, like Mogode, had already descended from their ancestral abodes - for over a century

PHOTO 5: A mountain field in Mogode, 2002



¹⁴ Most sherds on Rhunggedu date over four centuries, with a mean of 350 years BP (Thermoluminescence dating).

earlier - conform to the dating of those sherds on the Mogodé hilltop. Also the terracing on the western slopes and the defence ramparts in the narrower valleys indicate that the Kapsiki of Mogode had descended from their mountain of origin long before. So it is safe to assume that pre-1880 the threat of slave raiding was much less intense than it would be later. The population had grown, people had moved over the gentle slopes that ring the plateau, and terracing some distance away from the settlements had been possible. In many cases, claims on nearest bush fields had been made in the years before the arrival of the coloniser.

The earliest colonial period, 1880-1920, witnessed the fiercest slave raiding. The colonial British presence in Nigeria was already making its mark as was the German one in "Kamerun". The beginning of the 20th century saw a piece of British North Cameroon become part of the German colony (Barkindo 1989) but at that time for the mountain dwellers these white people were far away. However, the Fulani were not. And the latter were strengthened by the colonial presence. These were the days of slave-raiding Fulani. The dominant character, symbolising the conditions during the latter part of these decades, was Haman Yaji, a Fulani chief of Madagali, who established a reign of terror in the mountains. From several bases, one of them close to Mogode on the Kapsiki plateau, he initiated an almost interminable number of slave raids. His diary (Kirk-Greene & Vaughan 1996) - a surprising document for the era - recounts the numerous raids he inflicted on the mountain populations just after World War I, when guns became widely available. Some villages were spared for some of the time, Mogode among them, because of its fighting strength and its allegiance to another Fulani chief. Others suffered heavily. In the memories of the Kapsiki, Haman Yaji looms large as a towering figure who converted the mountain economy into a slave-based one. For him slaves were a simple coinage, a means of barter widely spread throughout the area. Tales still abound how "everything was paid for by slaves".

A similar intensification of slave hunting during the early colonial days was noted for many parts of the Mandara Mountains, as well as for other reclusive populations and slaving grounds (Fardon 1988). In a way, the colonisers with their new armaments upset the precarious power balance of the mountains. Horses seem to have become more abundant (Smaldone 1977) and on the whole the colonisers after the first pacification put their military might at the disposal of the indigenous rulers, or those seen as such, the sedentarised Fulbe. The markets for slaves continued to function unchecked, as at Mora. Even with the grand emirates subdued by the incoming Europeans, the hunger for slaves was unabated (van Beek 1988). And of course,

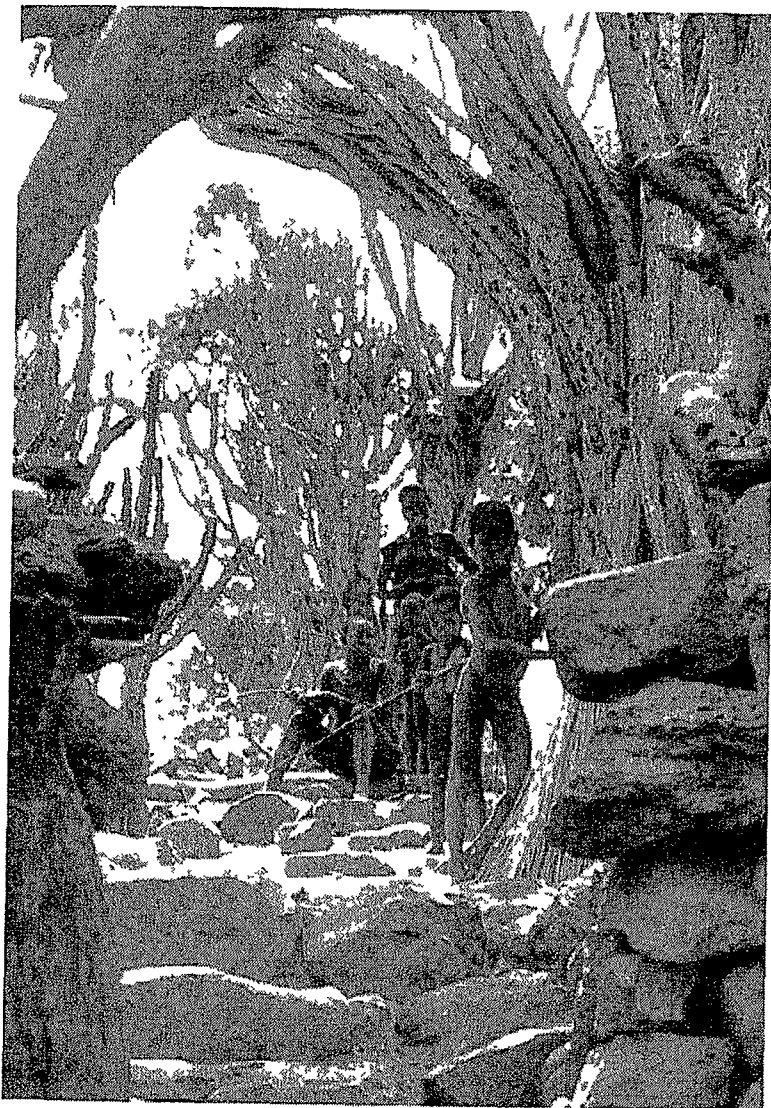
firearms, though not absolutely superior to mounted cavalry, were an asset for a slave raider. The impression is that the raids, through the use of firearms, became smaller and more frequent. No longer did a large cavalry go deep into the mountains, but instead small raids by the Fulbe plagued the area. Three reasons can be found for this change. First, the centres of power were closer to the Mandara Mountains than before: no longer did Fombina, Borno or Baghuirmi send out their warriors on large scale slaving expeditions. Madagali, Mubi, and Mora, all considerably nearer to the mountains, were home to the raiders. Guns may have been the second reason: raiders with guns had more military superiority and large numbers of raiders were no longer required. Finally, the European presence precluded large-scale operations.

The Kapsiki must have cultivated as close to their compounds as possible, as informants explicitly state. Intercropping, manuring the patches near the walls of the compound or in the enclosure, and the first intensive use of maize seem to characterise agriculture in this period. A heightened individualisation of production probably marked the labour organisation. In the first part of the period, people still went off to the fields in groups to defend themselves; later this collective response to slave-raiding seems to have declined as people started to leave the out-fields fallow and concentrated on the infields. As hit-and-run raids became more usual, stalking the people very early in the morning and getting away with a few slaves, a collective response such as group cultivation alleviated the problem to some extent.

These decades marked the highest intensity of cultivation on the terraced slopes near the villages. So this first historical period, during which the coloniser took gradual control, was quite atypical: one of contraction of acreage instead of expansion.

The following period, 1920-1950, covers the first Pax Gallica and Pax Britannica. World War I had been an intermission in the colonising project, especially on the Cameroonian side with the Germans defeated and their colony mandated by the League of Nations to the British and the French. The mountain peoples, like the Kapsiki, suffered as in the struggle between the European nations they tended to side with the Germans for several reasons. They admired the fierce fighting strength of the Germans and chose what they saw as the stronger party. But, to their detriment, the French and British, more than the Germans, would tend to rule indirectly through the local Fulbe elite and by siding with the Germans the Mandara peoples tried to fight off renewed Fulbe dominance. Of course, their betting on the wrong horse resulted in fierce revenge by the Fulbe, who

PHOTO 6: Built when defence was part of the architecture: the view from an old Kapsiki home, 1972



executed their last, but intense, sweeps of slave raiding. After 1920 the slave threat subsided; the colonisers moved in, set up their administration and moved on to pacify the area in earnest - not just from the slave raids but also from internal fighting. In fact, it seems as if internal fighting had flared up strongly after removal of the slave

threat. And indeed, it did take quite some time until these little wars were terminated, in fact only after the Second World War. The last internal fighting and skirmishes have been dated in the late 1950s, but even up to the 1970s occasional fighting broke out. Of course, the disruption of World War II, with its "levée en masse" of Cameroonian soldiers and the reduced attention to internal government did not hasten pacification. About 1950, dominance of the Cameroonian and Nigerian colonial states was sufficiently restored to bring the fighting to a close. One major innovation in this period was the institution of weekly markets, a phenomenon unknown to the area before pacification.

So it was in these decades that the Kapsiki ventured out onto the plateau itself, cautiously at first, later more boldly. The first step was to establish wards, some kilometres onto the plateau; the village of Mogode quickly grew from four wards in the centre to 14 wards, forming a large crescent on the plateau rim. Some small settlements on the slopes towards Nigeria, - one of the best protected against slave raiding cavalry - were deserted at that time, as the easier cultivation of the plateau offered better prospects of a good return. Though the old centre did retain political and ritual pre-eminence, the outlying wards where people could live close to their new fields, became the agricultural norm.

One stimulus has been the introduction of groundnut cultivation, probably by the colonisers. *Arachis hypogea* was quickly taken up by the Kapsiki for two reasons. It is easy to rotate with the main sorghum staple, and secondly, they already knew a similar crop, the indigenous bambara nut (*Voandzeia subterranea*). The new groundnuts took the ecological niche of the earlier nuts, and thus became the domain of the women, as they had been the ones cultivating the earlier species. The men had enough new fields to cultivate sorghum and millet not to bother much with groundnuts. An export crop from the start, the Kapsiki women learned to use it in their sauces as well. During the interbellum decades, groundnut cultivation gradually spread over the Kapsiki villages, furnishing the women with their first cash income. Tobacco, the old source of cash for the men did not grow proportionally and in fact even declined.

So, this period saw a rapid increase in acreage under cultivation, both for the staple and for groundnuts. Many fields in moderate distance from the village centre originate from this period, and many have therefore been in the patrilineal families for about three generations now. Maize, the earliest crop, became more important as *soudure* as the importance of small crops, that were cultivated in the immediate vicinity of the compound, dwindled.

The next period, that of the "mature colony" and first "neo-colony", 1950-1980, saw some changes in line with these developments. Pacification was completed¹⁵, and people started moving around the area with greater freedom. The plateau and plains between different villages were claimed, and towards the end of this period "no more bush", as informants put it, was available. Cultivation huts sprang up over the plateau and families dared to build individual compounds out of sight of the village. The government and some development projects came in with some changes and stimulated ox-drawn ploughs for plateau cultivation. Though this met with very limited success, it did to some degree take hold. Other experiments, like with *mouskwari* sorghum failed. On the plateau, especially near Rhumsiki, tourism picked up (van Beek 2003) generating a demand for gardening: around the wet areas on the plateau in the neighbouring villages, people started growing tomatoes, onions, radishes, lettuce, and cabbages, stimulated by the efficient manager of those days. Yet, this was for a few only, mainly dominated by Christians who were taught this cultivation by missionaries.

Cattle became more numerous. The Kapsiki had already a considerable number of cattle, and during this period the number gradually increased. Their own breed of cattle was still dominant in their herds, but this slowly reproducing animal had to make way for to *Bos indicus*, the Fulbe cattle. Yet in this period, relations with the pastoral Mbororo Fulbe, living all over the plateau, grew more intense. Old scores were settled, the Kapsiki and Fulbe moved into a kind of symbiosis in which the Fulbe herded the Kapsiki cattle together with their own, returning milk and manure to the agriculturalists.

The status of the Fulbe, also the "bush" Mbororo, was quite high, boosted by the support of and for the then President of Cameroon, Ahmado Ahidjo, himself considered a Northerner and a Muslim, and thus - in the eyes of the Kapsiki - a Fulani. This period saw a clear growth of Muslim centres in the heart of many villages, especially Mogode as the seat of the *Lamido*. As the *chef traditionnel*, he represented the government on the one hand, but still had enough political leeway to organise his court according to traditional Fulbe style. He was a Kapsiki, but a Fulanised Kapsiki. "Fulanisation", or "Fulbeisation" (Schultz 1978, van Santen 1987) became a well-known concept in this time. The Fulbeised Kapsiki set themselves up as merchants, first and foremost in groundnuts, later to be supplemented by commerce in staple. The Civil War in Nigeria brought additional

¹⁵ The last war seems to have been between Mogodé and Sirakouti, in 1956 (van Beek 1987:4)

remunerative possibilities in commerce. Smuggling between the two countries, very easy for the Kapsiki as they live on both sides of the border, became highly profitable: food and beer into Nigeria, enamel ware and later gasoline and cloth were smuggled into Cameroon. This period thus saw the establishment of Kapsiki traders (many from the central Mogode village) in the larger Mandara mountain area, and also in Mokolo.

Agricultural labour became scarcer in these days; the extension of agriculture increased the traditional bottle-necks in labour, especially during the first and second weeding. One response was to break new grounds in work parties, more than had been done so far. Men organised the first breaking of a new field in large parties of 20 - 30 workers, with plenty of beer and food for the party on completion of the work. Labour was mustered by calling out loudly in the night before the event, relying on the reciprocity for work done by others. For their own crops and to a lesser extent for weeding, the women increasingly organised their own work parties, comprising about a dozen women from the neighbourhood. Beans and especially groundnuts were and still are harvested by working groups of women. Herding of goats and sheep, an important part of the Kapsiki flocks, became somewhat of a problem. Schools started to impose their presence on the young boys. Families with many children could afford for one boy to stay from school and herd the goats and sheep, while the others opted for education. Here the Kapsiki were helped by the decrease in child mortality that was noted in these decades. The population which had been stable up until the end of the 1960s with a fully traditional demographic pattern (high fecundity, high mortality, Podlewski 1966) entered a typical transition phase with much lower mortality rate and an undiminished birth rate, a situation that would fully characterise the next period.

The last period, after 1980, is one of demographic increase, both for men and animals. From the 1980s onwards improved health care together with improved water conditions - quite a few additional wells were dug due to development aid - resulted in fewer early deaths. The hospitals in Sir and Mogode, and the health posts in practically all the villages have improved on vaccination rates and have continued the fight against malaria. Meningitis still is a periodic killer, but the threat of measles has been reduced. Though the demographic figures of the 1990s do not have the same precision as the earlier ones (Podlewski 1966) indications are clear: the mortality rate is lowering, just as has occurred earlier for the Mafa (Hutter 1985).

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An impressionist measure for this trend is the naming of the children. Kapsiki naming follows birth order (van Beek 1978¹⁶) or more accurately - the order of pregnancies: every name indicates how many pregnancies have preceded a certain child. Comparing names for new-born children in 2003 with those in 1972 shows that the gaps between consecutive siblings have decreased. Whereas in 1973 often names jumped from "no. 2" to "no. 8" - indicating death of the intervening siblings - in 2003, this was much less the case. In many more cases the living siblings had consecutive names.

The mean number of living children had increased, from 3.5 to between 4 and 5. Transition theory calls for fertility figures to follow a decrease in mortality, though after a time lag (Caldwell 1989) Brandt 1999). Figures on fertility are not available; the only field impression stems from the almost total disappearance of the names with "meha" (lit. "old"), implying the 11th, 12th etc child. There may be a tendency to have fewer than ten pregnancies, but any serious fertility decline is still far off and the Kapsiki society is in full explosion: high fertility, decreasing child mortality.

The second demography concerns cattle. The mean number of cattle per household between 1973 and 1995 rose from 1.3 (van Beek 1978:17) to 3.6 (Avontuur 1997:44). This rise favoured the Fulani type cattle, the classic long horned humped *Bos indicus* - that are so common in the West African savanna.. The Kapsiki short horned *Bos taurus* variant, though better adapted to harsh conditions, produces less meat for the market. Still, especially for ritual purposes, some proper Kapsiki cattle should be part of the flock (van Beek 1998). An increase in cattle numbers aimed to boost meat production, but the new flocks with the *Indicus* cattle consume considerably more grass and fodder than the old ones and bear heavily upon the savanna vegetation.

Expanding agriculture and this increase in cattle grazing resulted in almost the entire plateau being brought under either cultivation or grazing in the mid 1990s. One clear indication was the cost of roofing straw. In the 1970s almost all houses were straw roofed round huts, and bundles of roofing straw were almost never bought or sold. The usual way to roof a new hut was for the proprietor to furnish the straw and then to call upon his friends to make up a working party. Together the men plaited the straw rope for roofing, and produced

¹⁶ Among the Bainawa the number names seem to follow a nine-based count (Collard 1969). Her report on the Kapsiki system is erroneous, as it omits the tenth child; Kapsiki naming definitely follows a decimal system.

the loosely tied straw lining for the roof. During the 1990s this changed. Long grasses suited for roofing became scarce, and corrugated iron became a routine choice instead. In the seventies this was deemed quite expensive though "modern" Kapsiki who has some cash, like tailors or merchants started the trend already. At that time special sales cars toured the area to promote the *tole ondulée*. From 1989 these stopped and the major villages, like Mogode in the 1990s all have their own shop selling corrugated iron.

5. Themes in Kapsiki ecology

The course of political history had clear repercussions for Kapsiki ecology. Several trends and tendencies can be gleaned that allow for these dynamics and might offer a glimpse of its eventual adaptability. History showed the opening and recent closing of resources, in addition to demographic growth, as major elements. In this section we shall discuss the repercussions of these major trends under various headings: ecological and economic diversification, intensification versus extensification, the influence of markets, and the polarisation of income.

5.1. Resource dynamics

Kapsiki agricultural dynamics has to be put against a background of climate change. As elsewhere in West and Central Africa (Bryson & Murrey 1977), the climate seems to have become dryer (Brunk & Gronenborn 2004). The mean annual rainfall in the period 1955-1969 was 1109 mm (Hallaire 1991:20), from 1970-1984 the mean was 1012 mm. The mission in Sir measured in 1992 and 1993 a mean of 926 mm. This diminishing precipitation is not so clear-cut, however. For instance 1994 with over 1400 mm of rain far exceeded these figures. As elsewhere desiccation implies not just less rain, but more erratic rainfall with wild fluctuations which in itself is a stimulus for action. Also, rains tend to fall somewhat later in the year, especially the heavy rains in the middle of the season: these have shifted from July and August to just August. On the whole, though rainfall on the plateau has been much more stable than on the surrounding plains, the dynamics of Kapsiki ecology have to be set against the backdrop of a decreasing and erratic amount of rainfall. Still, in 2003 as in 1972, most households could produce enough for their own needs; at least, enough staple, sorghum, millet, maize (called "sorghum of the Marghi", their neighbours in Nigeria). Some poor families (both in people and goods) have to rely on kinsmen and neighbours for their needs, but they are the exception rather than the norm. In any case,

subsistence allows for 62 % of the crop production; the remaining 38 % is sold at the market. Kapsiki society may be no longer is "*la société qui suffit à elle même*" (Podlevski 1965:87) as it was in the early 1960s, the subsistence orientation is still quite marked. People are used to consuming what they produce, and are loath to produce a cash crop they do not consume themselves (Avontuur 1997:27). No farmer puts priority on cash crops. Avontuur showed that crop yields in 1994 prove that 32 out of 38 researched families produced enough staple to feed themselves, while 6 - equally divided over mountain and plateau - were short on staple crops. They were mostly blacksmith families who easily make up for a lack of harvest, and the other produced enough plaited utensils (mats, chicken pens etc.) to buy the rest of the staples. Three families were in dire straits: one of whom was settled cattle-less Mbororo (Fulani) family where the husband refused to cultivate ("not his way of living") and the woman, worked hard herself in agriculture, but could not make up the shortfall. The other two were old people living with a small grandson. They relied on the kinship network for food (Avontuur 1997:29). Though quite individualistic, the Kapsiki still honour these requests, albeit grudgingly. Poor people are routinely described as "lazy", and laziness is among the worst epithet possible (cf. van Beek 1982).

The soils of the Kapsiki area show considerable variation, but on the whole are quite fertile compared to the sandy soils of the Diamare plains. The slopes of the volcanic cones, the hillsides and the plateau itself, though widely divergent locally, are richer in nutrients than the plains (...). The Kapsiki fully recognise the influence of the mountainsides and the volcanic remains: the soils on the slopes, they state, is the "shit of the mountain", and fertile as such. The plateau itself varies between red laterite parts, to places with loamy black soils, with occasional rocky patches. Also, the plateau sports river gullies as well as some permanent waterholes. On the whole, the Kapsiki recognise the plateau fields to be less fertile than slopes, and also more prone to weeds. Fallows need to be longer on the plateau.

So the two main ecotopes, mountain slopes and plateau, present specialised niches for different crops. The main crops sorghum and maize grow on both, with some ecotopical variation for the many varieties of sorghum: red on the poorer soils, the high-yielding yellow one on the mountain slope. Maize needs more fertile areas and is often grown close to the homestead, in order to benefit from household refuse and to allow protection against thieves, especially just before harvest. Pearl millet, yam, tobacco, garlic, macabo (in small quantities) grow better on the slopes, yellow sorghum, groundnuts and beans prefer the mountain soils. On the plateau, by contrast, the crops that like a damper soil thrive better: sweet

potatoes, potatoes, sugar cane (near open water), rice, manioc and fruit trees, the latter near seasonal rivers. As the Kapsiki villages spread out over the fields, especially in the last decades, an increasing number have aimed at cultivating fields both in the mountains and on the plateau. Though those that move out onto the plateau try to retain fields on the mountain slopes, this dual strategy is easier for those living in the mountains, as they are still in the position to acquire fields on the plateau¹⁷. Obviously the claims on plateau fields are less detailed and less strictly defined than those on the mountain fields (cf. van Andel 1998).

The Kapsiki are aware of soil fertility. Though they invest little in directly manuring of the fields, they practice mixed cropping to a large extent. Maize and sorghum are intercropped with beans, sesame, sorrel, groundnuts, okra, pumpkin, and bambara groundnuts. Mono cropping, though always on a small scale, is for tobacco, egg-plants, rice, tiger-nuts, sugar cane, garlic, sweet potatoes and black potatoes. Intercropping is recognised to heighten fertility and to decrease labour needed for weeding. Trees such as *Acacia albida* and *Ficus ingens* should remain in a field to enhance its fertility. Other trees are grown for timber only; shade is not considered important for plant growth. The timing in burning the fields right after the harvest is somewhat puzzling; the dry harmattan does not allow for the infiltration of the nutrients, and the only result is to render the fields unusable for cattle owners. That may in fact be part of the motivation.

Just as important as the soil type, is the angle and the presence of rocks. All slopes are strewn with rocks, large and small, and can only be cleared and cultivated by gathering the stones on terraces, a measure against run-off as well. The plateau fields are much less rocky, and do not require extensive terracing. Thus, for the cultivation of all mountain fields the hoe is by far the most suitable tool: either with a pointed blade in the rockiest fields, or one with a wider blade at the foot of the hills. On the plateau the hoe can be replaced by a plough. The ox-drawn plough has been introduced in the area from the late 1970s, starting at the central village of Mogode. The adoption of this new technique has been very slow. The cost of feeding the oxen, and the disappointing results made many early adaptors abandon the plough, eat the oxen and return to hoe cultivation. Gradually, a smaller ploughshare that could be drawn by donkeys was introduced, with better result. In 1972, only four farmers in

¹⁷ In Roufta the mountain inhabitants had 40% of their fields in the plateau; the plateau inhabitants had 14% of their fields in the mountains; all in the village of Roufta (Avontuur 1995:24)

Mogode used a plough (with a population of 1800). In 1994, in the more remote village of Roufta, about 4 out of 10 farmers own a plough. Ownership - and use - of a plough depends on ownership of fields on the plateau. Yet, even if people like to cultivate with a plough, they recognise the loss of soil fertility the plough may cause (it is said to "bury" the fertile top-soil), and people insist that in many cases the soil has to be "healed" by reworking it with the hoe. Plough cultivation follows the polarisation of wealth in the village: rich men own plateau fields, and can use ploughs. The new technology underscores the division of wealth. The total investment in agriculture has not risen, either as an investment in the soil itself or in implements. The total number of ploughs, oxen and other investments is still very low. The basic type of agriculture has remained the same, namely the hoe-type horticulture that has characterised African cultivation for so long. One reason for this persistence of the old-and-tried technology is the environment itself, another backdrop of the whole century of agriculture we are discussing (*cf.* Sterner 1997)

One technology that did change agriculture is the coming of the grain mill. At the end of the 1970s some enterprising outsiders¹⁸ introduced grinding mills in the villages. After some masculine misgivings that the taste of machine ground sorghum not being up to the standard they were used to, the women quickly settled the question by using the device in large numbers. The 1980s saw a gradual expansion of the mills, and in 1994 almost all villages had access to one. The main change was the influence on maize cultivation. Maize had been a "soudure", a modest crop important as first harvest, to be bridge the time till the main sorghum crop. The maize kernels were not well suited to the hand driven stone mills of the Kapsiki, and the women disliked grinding maize. The machine mills changed just that. Maize became a major crop, easy to cultivate, with a good yield per hectare, and an early harvest.

¹⁸ The mother-in-law of - then - President Amadu Ahidjo among them.

PHOTO 7: Ready for sowing in the next season: the best cobs of maize, 1989



5.2 Tenure

Tenure is changing into the direction of more individual ownership. Entitlement to land in principle, and for a large part in fact, follows patrilineal kinship organisation: clan, lineage, sub-lineage. In principle land belongs to those that have cleared it, a general directive still in operation on the fringes of the village territories. However, on the slopes all fields have been cleared for at least three generations, while on the plateau the last decades saw the overall division of those in fields in terms of first clearance. The land belongs to the descendants of the ones who cleared it, patrilineal descendants. Though living dispersed through the ward and over the village wards¹⁹, the lineages and sub-lineages still control most of the fields. In 1994 about half of the fields were inherited, about the same proportion as in 1972. What did change were the counter gifts for

¹⁹ The village of Roufta, scene of the research of Avontuur (1994) is somewhat of an exception in that respect. In Roufta, the clans, lineages and sub-lineages follow territorial lines: each ward harbours a clan. Changing one's residence in Roufta means gradual change in clan-affiliation. In practice of land tenure this reinforces the claims of the patrilineal units, even though these are not composed strictly according to patrilineal ideology, due to people from another clan moving in.

borrowing. In 1972, these still amounted to some pots of beer, or herding the lender's animals for a time. In the 1990s borrowing land became more complicated. A field is considered borrowed as long as the full amount of gifts to the lender has not been paid in full; besides the beer, money, goats, and utensils were given on a regular basis. Without new gifts, the field might be taken back. This new trend most clearly shows when a field is borrowed for the building of a compound, which often happens. Without gifts each year, the builder of the house will be thrown out of his house by the owner of the land. One inducement to actually do so would be the heightened fertility of the plot after several years of accumulating household refuse. In the 1970s this was unthinkable: building and living had clear priority over cultivation. Fields can be rented as well, in which case an agreed sum is paid in advance.

Sales of fields have increased only slightly in the past decades. In 1994 only 6 % of the fields were bought; selling was possible but discouraged in the 1970s, and still is today. Often, the sale of land is an indication of tension between agnatic kinsmen, brothers, half-brothers, and lineage-brothers. In the Kapsiki social system the (sub-) lineage cannot prevent one of their members from selling land; but then he extracts property from the total fund of land of the lineage. Often the others decide to buy it back. This is still the case, though increasingly land is bought back by individual lineage-members, who then state a clear individual title in contract. Accumulation of land in individual hands still is far off, but the tendency is there. Finally, borrowing land against sizeable counter-gifts and the sale of land are not that far apart. Even at the time where borrowing was "cheap", the lines between borrowed and owned fields tended to become blurred, especially when borrowed fields were passed down over generations. Then both the actual limits of the fields, and the kind of title became unclear. The present tendency towards major return gifts works in the same way. The tendency towards more individual ownership has not yet led to an increased investment in the fields and soils themselves. The general notion still is that land is plenty, and that clearing is the major issue.

5.3. Polarisation of wealth

Over the last three decades differences in wealth between the Kapsiki have become more obvious. Kapsiki society since pacification has been a society with marked differences in wealth. Yet, developments in the recent past have exacerbated the situation. Cattle are becoming monopoly of fewer individuals. Especially in villages along the main road, many Kapsiki have taken up commerce. Smuggling, trade in

groundnuts and recently trade in cattle have produced a small Kapsiki merchant class in the Mandara area, both in and beyond the Kapsiki territory. They routinely invest in cattle, bringing in flocks from the Diamare plains into the mountains to add to their own herds. Kapsiki, who make a career as officials, invest in cattle that are kept on the plateau and are guarded by their young kinsmen.

Raising livestock has become for some more important as well in the last decades. The number of people owning one or two cows has not grown (Avontuur 1997:34, van Beek 1978:16) and hovers at one third. More people were cattle-less in 1994 than in 1972. But in 1972 the rich cattle owners had more than 5 cattle; while in 1994 about the same proportion of people had more than 16 cattle! The number of goats and sheep has doubled between 1972 and 1994, with a tendency towards more goats and fewer sheep. Donkeys were scarce in 1972 but omnipresent in 1994, mainly for drawing ploughs. Within the family, the situation has hardly changed at all: the men own the livestock (except poultry); a woman, however, can invest her earnings in livestock, and may then own cattle, sheep or goats. However, selling them is another issue as that is her husband's task, either for his own profit (just as he may sell her groundnut produce for his own benefit) or for hers. He runs serious risks though if he concentrates on profits for himself, as she may leave him and 1 neighbours will know. A man enriching himself with his wives' livestock is not well respected.

The constellation of the herd is changing. The insistence of the Kapsiki on their own brand of cattle is still there, both for ceremonial and ritual purposes, and because of the better adaptation of their brand of cattle to the mountain conditions. But meat is becoming more important as a cash resource, so the balance is shifting towards the Fulani *Bos indicus*. This tendency had its roots in the early 1960s, when the plateau, with its more abundant water, was opened for grazing. The ceremonial and reciprocal obligations in purchasing cattle, like those invoked on Kapsiki cattle (van Beek 1987:15, 1999:5), are consequently disappearing. Whereas until the 970s purchase of a cow implied a lasting relationship between buyer and seller, in 1994, this had become history. Cattle purchases and sales have become business transactions.

The closing of the resources of the plateau brought another problem as well: the polarisation of wealth created a class of cattle owners and the perennial problem between cultivators and cattle owners emerged. Conflicts over cattle have increased and in 1995 constituted a major source of irritation and strife within villages.

Deli and Tizhé are having an argument. Deli accuses Tizhé of leaving his sheep unguarded and claims they have destroyed the crops in his field. He requests compensation for the damage the sheep have done. Tizhé admits that his sheep were in the field of Deli, but he maintains that no crops were harmed. "There is only sorghum in that field, at least two meters high, so how can my sheep destroy that? I went down there to take a look and I have seen that no crops were damaged." Deli threatens to go to the ward chief in order to ask him to judge the case. But Tizhé does not give in and refuses to pay. Finally, the women in the neighbourhood separate the two men when they almost start fighting.

The week after the incident, two sheep of Tizhé die. He is convinced that this is not a coincidence. "Deli is jealous, that is why this is happening", he says. "And you must know that I have always tried to help him. When his son, who is a bandit, broke into my house, I have decided not to report it because I knew Deli could not afford to repay me. I have also helped Deli when he had to be judged by the Canton chief because his son had married a girl without paying the bride price. Now you see what you get for your help. All they do in return is that they try to exploit you even more. And if you do not co-operate, they will bring you harm.

A few years later Tizhe moved out of the village and started work in Mokolo to earn a better income and to avoid this kind of problem. Also his conflict with the same Deli over a tract of land was settled: each got half and Tizhe sold Deli his part at a low price.

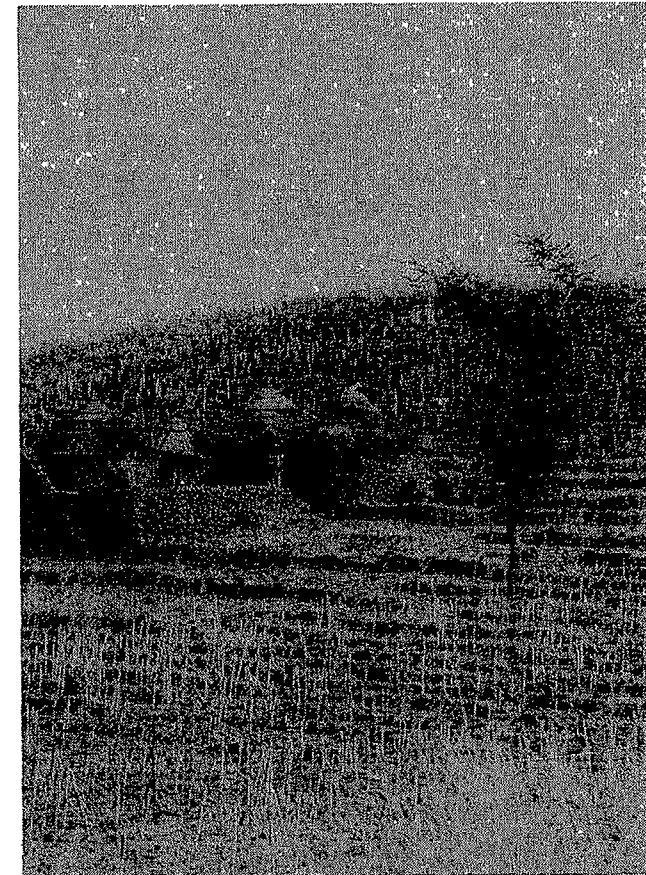
Tensions between cattle owners and cultivators are nothing new in this part of Africa but they are new among the Kapsiki. The rise of a small group of major cattle owners generated the kind of tension described above between Tizhe and Deli. In the past, any conflict between cattle and crops were routinely blamed on the Mbororo Fulani. It was assumed that their cattle were the culprit of any misdemeanour even if they were nowhere near. Now, those Fulani hardly have any cattle left after the recent drought years. The few Mbororo recognise that the quality of the pastures is decreasing²⁰, and the flocks need to roam farther and wider to feed. So, all cattle owners depend on the fallows as well as the remains after harvest. They need permission to graze the field, need to ensure that they will not burn the stubble on the fields, and have to ask for entrance on the fallow fields for their cattle. Often such permission is not granted and

²⁰ Avontuur notes a Mbororo who compares the herbs of the bush with a meal, and the herbs in a cultivated field with "coffee". (Avontuur 1997 :66)

frictions arise. Cattle owners, as well as those who cultivate large areas (often the same) tend to behave very careful in order to avoid poisoning, witchcraft accusations, and open strife. One wealthy farmer, after the death of his father and one of his sons, reduced the acreage under cultivation. He had found, after their death, a piece of *sekwa* in his compound. (*Sekwa* is a magical means ensuring the death of anyone in the particular compound who has any debt to someone in the village, van Beek 1994).

The same pressure is felt by the Mbororo Fulani, who have lived in the area for over half a century. Though many of them have taken up cultivation and have good relations with families of Kapsiki, their future in the land seems bleak, a situation closely reminiscent of other parts of Western Africa (van Dijk & de Bruijn 1994).

PHOTO 8: Deli's field in Rufta, 2002



5.4 Diversification

Diversification is a clear but not a new trend. Agriculture is still the main activity and by far most of the time is spent on agriculture, both by men and women. Though men also spend time on stock raising and the women on household activities, agriculture easily ranks first in time and energy spent. Agriculture is the primary source of cash income. Almost all households earn by selling crops, though the differences between households are large. The most important cash crop in the whole region is groundnuts. For women, who sell their own produce, groundnut sales comprise 69 % of their income; the rest comes from other small crops: other nuts, okra, garlic *etc.* Income sources for men are more diversified: in 1994, Roufta groundnuts amounted to 13% of their income, tobacco (16 %), sweet potatoes (12 %), sugar cane (12 %) and cassava (13 %) following suit (Avontuur 1997). The largest source of income for men derives from stock sales (37 %). This has not changed during the last decades: then, as in 1972, the proportion of men's income derived from stock sales was at the same level (van Beek 1978:44). Many of the agricultural sales by men are in fact produced by their wives: groundnuts and cassava, while for the cultivation of sweet potatoes the men depend on their wives' labour. Produce tend to sold immediately after harvest although the farmers would get better prices if they could wait for the prices to rise at the end of the dry season. However most do not have enough cash reserve to finance school fees and taxes and they have incurred debts during the cultivation season. Wealthier farmers can earn more from their produce by out-waiting the market.

Alternative earnings from agriculture have always been quite important and are becoming more so. All women trade (...) and most men, at least occasionally, try their hand at it. Most women brew and sell *mpeldi* the white Kapsiki beer brewed by women. In 1972, this brought them about 70 % of their cash income in 1994 this has not declined. One main advantage for the women is that they can keep the profits from beer for themselves and their husbands can never touch them. Only when they invest in livestock do things change. *Beignets* or other small food-stuff are also a favourite items for a woman to sell, usually at the weekly market. Besides crops and cattle, men sell plaited straw products (ropes, baskets, mats, even granaries, van Beek 1996). Other men complement agriculture with work as a tailor, butcher, or trade in soft drinks or industrial beer from Nigeria. Products such as dried fish, medication, cola-nuts, the occasional bottle of whiskey, cigarettes, salt, sugar, soap or matches can be traded by anyone, though some set up a real shop on market days. For many, a box of matches or sweets is an excellent excuse to go to another market, visit another village, and spend the meagre

earnings on samples of the local beer. In 1972 as well as in 1994 (Avontuur 1997:49), the men complained that eventually all the money ended up in the hands of the women. That, at least, has not changed. But, on the other hand, the women's control over any invested capital, such as cattle, has not changed much either.

Most non-farm production is house-oriented, and not commercialised, such as house building, roofing, plaiting, basket weaving (this may be specialised work). The exception - all-important in Kapsiki society - is the work of the blacksmiths (van Beek 1982, 1991a, 1992a). Iron work (not melting, see Sterner 1998), burying the dead, drumming and other music and many medicinal tasks are carried out by them, as specialists. They have to be paid for it. Blacksmiths' women make pottery and have their own medicinal specialisation, often connected with children. This caste-like group, that combines labour specialisation, endogamy and ritual obligations with notions of pollution could be called "general specialists", and have a strong connection with death. They were richer than the average non-smith (*melimu*) Kapsiki in 1972, and to all appearances still are in 2003. Though Islamisation made some dents in their marital isolation, allowing for some smiths' girls to marry into Fulanised Kapsiki families, the division between the two groups has hardly altered at all over 30 years.

5.5. Markets

Markets, the weekly high points of social life, have come rather late to the Kapsiki area. Soon after World War II, the colonial French administration finalised a system of weekly markets. Before that time, commerce with other villages was rare and dependent on occasional or regular merchants travelling the mountains with a few donkey-loads of merchandise. They would normally operate from the compound of a friend or distant relative, and from his *derha* (reception area) sell and buy merchandise. The colonial administration decided which villages were large enough to warrant a weekly market, as all villages, however small, wanted to have one as soon as pacification was completed. One reason for the markets for the coloniser was to buy groundnuts; another was the sale of European made commodities and luxury goods, as well as food. The market was the instrument to pry open the local subsistence economy, monetarise its revenues and was considered an important element in the "*mission civilisatrice*" of the French. The other civilising measure was taxes (Kirk-Greene 1957). These, plus the attraction of foreign commodities, created a need for cash and moved the agriculture in the direction of cash cropping.

For the Kapsiki themselves, markets came naturally but for them the function was different: first of all, a place to drink, to visit, and to become acquainted. The old men complained, even in 1972, that the markets had made women loose: through markets, women could travel to a neighbouring village and strike up acquaintance with other men, to be followed up with a definite move to the new man on a later market day. That the markets helped women to become more mobile, is undeniable but the fact that they started to earn more because of the availability of markets may be more important still. Beer brewing picked up through the markets, on a more regular and larger scale. There is some indication that the coming of markets initiated a new and quicker brewing process, the *mpeldi*. Informants agree that the older kind of beer, the red one made from sorghum sprouts, was around long before the colonisation. In fact, the Kapsiki derive their name from it - "Those who sprout". Sales of beer increased through markets, both in and around them. This, by the way, was not well viewed by the regional and local officials, many of whom were Muslim. Arguing that beer drinking leads to fighting in the market, the officials tried to ban beer from the weekly events, but they did not succeed. In some villages, beer sales retreated to the fringes of the market place, in other villages, beer stayed available at the heart of the market.

Markets were just one of the ways in which Kapsiki agriculture has moved into the mainstream of Cameroonian and Nigerian events. Former strategies, it has been argued (van Beek 1992), have been to stay out of history (Wolf 1987), a strategy of distance and non-involvement. The clear emphasis placed on self-sufficiency - both in food and in politics - is part of that strategy. Yet, the coming of schools, markets, shops, political authorities, health facilities and even tourists (van Beek 2003) have all helped to open up the society gradually. During the 1990s the Kapsiki merchants became well known in the area, while an increasing number of youngsters were becoming engaged in the military and the police. A few made it to high posts in the administration, one to Deputy in the National Assembly of Cameroon. Most of them have retained their links with the mountains, built large homes, and collected herds of cattle. So, the trend of demarginalisation is there, with commerce as its main venue.

5.6. Intensification and extensification

Processes²¹ of intensification and extensification have been see-sawing throughout Kapsiki agricultural and political history. The general trend is one of labour economics: intensification occurs only if needed, and when external circumstances render the more extensive approach invalid.

The Kapsiki try to harvest as much products as possible per unit of labour. As long as land is not scarce, this is a viable strategy. The tendency towards extensification has been most marked on the plateau, especially among those who can plough. The gradual increase of ploughs has led to a shift towards extensification, as in fact all plough agriculture is done on the basis of the fallowing system: some five to eight years of fallow are deemed sufficient to restore fertility, due to the resilience of especially the volcanic soils. Ploughs, then, are used to increase areas under cultivation with the same amount of labour, especially in weeding. The risk of soil degradation is becoming clear at this juncture (Avontuur 1997:46) but the main option still seems to be to increase the acreage under cultivation, not to invest in the soil. (Cf. de Steenhuisen Piters 1994)

Where necessary, intensification seems to have happened in the past, both during the fiercest slave raiding times, and for specific crops, such as those cultivated for the hotel. The Kapsiki do not have difficulties with the technicalities of more intensive agriculture, and they seem to switch with ease from one approach to another - but only when needed or profitable. So Kapsiki society will continue for some time on a course towards polarisation of wealth, favouring a few, but disfavouring most. Then intensification should set in, due to population pressure, which is definitely on its way. The notion of territorial confinement is apt here: what are the options for extension of the cultivation area? To the north, east and south, Kapsiki country is hemmed in by groups with at least a similar density (Vincent 1990). In the south the Hina and Bana are in a similar situation to the Kapsiki, while to the north, the massive population of the Mafa population prevents any possibility of movement of population in that direction. In the Nigerian west, Higi have moved into the plains of the Margui²² population. But the international border is a limiting factor as well.

²¹ Agricultural intensification implies intensive use of plots, through inputs of manure and fertiliser, and high labour investment. Extensive use minimises inputs of manure and labour in order to bring a larger area under cultivation

²² The Kapsiki use the term "Kangwaya" for those usually named "Margui", i.e. their western neighbours, in Nigeria.

Nigeria does not welcome too many immigrants and relations between the countries are tense. After all, the area where the Kapsiki and Higi live has been one of the disputed border zones between the two countries (Barkindo 1989) and only recently, in 2002 the issue has finally been settled at the ruling of the The Hague court: following the court ruling, Nigeria ceded the disputed island in the South and retained the Cameroonian lands in the North. Thus, the old dream of Ahidjo, the former President of Cameroon, that those Nigerian areas of Northern Cameroon would return, has not been fulfilled.

6. The making of an environment

Once I walked with my assistant through the – in my eyes – spectacular landscape of mountains, boulders, gullies and ravines on the border between Nigeria and Cameroon. “What a beautiful landscape”, I could not help remarking. My assistant, in the most matter of fact voice retorted: “Beautiful? I do not see any farms”.

Evidently, people from different cultures appreciate landscape differently. But there is more to it. The wilderness element, which appeals to Western civilisation, is an appreciation of an “unspoilt” environment, that the hand of man has not touched, or at least not visibly so. Such an appreciation has deep roots in a culture which has technologically dominated “nature” for a considerable time. So my appreciation is based upon an abundant production of food and commodities, where a truly non-productive area has scarcity value. In this situation Western culture has defined the “beauty of the wilderness” as opposed to “civilisation”, defined nature against culture, *i.e.* nature in opposition to man. The African walking besides me did not define “nature” against “culture”, neither did he define “wilderness” against the spoiling hand of man. His contrast is between “bush” and “farm” (Croll & Parkin 1992), between “non-productive” and “productive” and thus he appreciated the transformed environment, the landscape wrought by humans living in an environment of which they are part and

PHOTO 9: People in the landscape: women threshing, 1973



parcel. For him, the best environment was a product of interaction with man. For someone who just visits the area this interaction is not at all evident. The rugged mountains, with their great boulders, and their harsh dry appearance in the dry season, look forbidding and totally unchanged by human hand. But as we saw, in the different periods the environment was not used in the same way, and so, in fact, was not exactly the same environment.

Several factors have continually changed the ecology of the area. First, there are climatic changes. Rainfall figures indicate a gradual decrease in precipitation and more erratic rainfall patterns, with wet years alternating with very dry ones.

The next factor is political insecurity. Actual war and the constant threat of war and raids drastically influenced the interaction with the local inhabitants' interaction with the environment, redefining the area in terms of habitable – non-habitable and of defensible – non-defensible.

The third factor is knowledge and technology. Changes in cultivars, like groundnut cultivation and the rise in popularity of maize, and the occasional flowering of gardening exemplify one aspect. On the other hand, the introduction of the plough – though still on a small scale – not only stipulates more outfields as acreage, but also

makes for a sharper distinction between types of fields: flat, without stones versus the mountain slopes. This technology evidently changes, again, the fields themselves and their water management.

A fourth factor is labour. The most spectacular environmental change is the extensive terracing. The Kapsiki have, like their neighbours in the area, changed the face of the hillsides. Though not as intensively as the Mafa, they have also changed run-off patterns and created a new niche for plant cultivation as well as for non-cultivars²³. In turn, the terraces need upkeep, as water erosion and cattle tend to destroy them. So, the changed environment influences cultivation and labour input.

Husbandry is the fifth factor. Goats and sheep seem to have been a continuous presence without much dynamic, but cattle herding has changed. Though the Kapsiki *Bos taurus* has a long history in the mountains, the arrival of the Fulbe with their own type of cattle, has undoubtedly intensified cattle herding. Thus, from the late 18th century the plateau has been grazed much more extensively and this has increased the exploitation of the plateau, and even changed the typical *brousse* into pasture. This relationship with the pastoral Fulbe has shown considerable dynamics, and the ethnic definition of the two sides of the ecological picture - agriculturalists and pastoralists - proved fluid. Consequently, the definition of the environment changed, especially that of the bush.

The area's inclusion into a market economy - including a tourist one - has redefined the territory further, with its special characteristic of straddling an international border. Finally - last but definitely not least - there is the issue of demographics. The change from a traditional to a transitional stage, with its concomitant increase in population, is the last major factor in the interaction with the environment.

Let us now return to the discussion between Boserup/Netting and the Malthusians, and the "Ingold-angle". First, the physical environment has proved flexible ("plastic"), at least sufficiently so to allow for a dynamic cultural definition and to provide for different degrees of land use intensity. Environment and culture have influenced each other in the ecological history of these

²³ Kapsiki ethnobotanic classification reflects this as well. They have a system of binary nomenclature, in which the generic name is often followed by a modifier indicating the ecotope: "mountain", "plains", "water" or - indeed - "terraces".

mountains, as our environmental history has shown. The first question was the productivity of the opposition between a group and its habitat: do people adapt to the land or do they "dwell" the land, in Ingold's terms. The Kapsiki ecohistory shows that the latter is the more productive approach, for whatever the visual dominance of the physical terrain in these spectacular mountains, the socio-political, technological and demographic variables continually impinge on the process of living, redefining living in the mountains as dwelling the mountains. The interaction between man and mountain proves to have been surprisingly flexible and open to both intensification and extensification.

The final question is whether this flexibility has its own inherent limits. Recognising the mutual interdependency of environment and man's adaptive response, varying scenarios for the future are feasible. The first question is how far the malleability of the environment - plus the ways of dwelling in it - can be stretched. Both the physical geography - including rainfall - and the political positioning provide limits to flexibility. A further decrease in rainfall will affect the ecology as will the political futures of both countries, Nigeria and Cameroon. But other limiting factors are important too. Market characteristics, logistics and demographics will all leave their mark. Considering other cases from the Mandara Mountains (Zuiderwijk 1998, van Andel 1998) or from elsewhere (McNetting 1993) and viewing the ecological history of the Kapsiki, options for intensification, diversification and other adaptive strategies still are very much present for the Kapsiki, and undoubtedly will lead to different definitions of the environment. But the difference between "equilibrium" and "exploitation" will be increasingly less marked, as already has been shown in the later periods of this ecological history. Ecological engineering, from terracing to gardening and from cultivar selection to intensive manuring, makes this opposition less relevant. A widening variety of individual choices for the Kapsiki, increased awareness of long time ecological costs and benefits accruing from adaptive responses and heightened interaction with external forces will merge equilibrium and exploitation ever more closely. In the Mandara mountains the Kapsiki, their cattle, their cultivars, the other plants and - last but definitely not least - the other groups living in the area such as the Fulani - are shown to be fundamentally of one world, sharing not only a habitat but *dwelling* the mountains each in its own way in continuous interaction. This environmental history has shown that interaction to be in constant flux, and though some "eco-logics" guide it, the mutual interdependency remains,

living in an environment that is stipulated socially and a society that constructs itself as part of landscape.

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