

HELSINGIN YLIOPISTON MAANTIETEEN LAITOKSEN JULKAISUJA
PUBLICATIONES INSTITUTI GEOGRAPHICI UNIVERSITAS HELSINGIENSIS
A139

TRADITIONALLY PROTECTED FORESTS AND
SACRED FORESTS OF ZIGUA AND GWENO
ETHNIC GROUPS IN TANZANIA

JUSSI YLHÄISI

Julkaisija:
Helsingin yliopiston maantieteen laitos
Department of Geography
Faculty of Science
PO Box 64, FIN-00014 University of Helsinki
Finland

ISBN 952-10-3095-X (nid.)
ISBN 952-10-3096-8 (PDF)
ISSN 0300-2934

Helsinki 2006
Dark Oy, Vantaa

This thesis consists of the following articles:

- I) Mwihomeke S, T Msangi, C Mabula, **J Ylhäisi** & K Mndeme (1998). Traditionally protected forests and nature conservation in the Northern Pare Mountains and Handeni District, Tanzania. *Journal of East African Natural History* **87**: 279-290. Nairobi, Kenya.
- II) **Ylhäisi J.** (2000). The significance of the traditional forests and rituals in Tanzania: A case study of the Zigua, Gweno and Nyamwezi ethnic groups. *Silva Carelica* **34**: 194-219. Joensuu, Finland.
- III) **Ylhäisi J.** (2003). Forest privatisation and the role of community in forest and nature protection in Tanzania. *Environmental Science & Policy* **6**: 279-290. Oxford, UK.
- IV) **Ylhäisi, J.** (2004). Indigenous forest fragmentation and the significance of ethnic forests for conservation in the North Pare, Eastern Arc Mountains, Tanzania. *Fennia* **182**: 109-132. Helsinki, Finland.
- V) **Ylhäisi, J.** (2006). The change of traditionally protected forests and leadership in Zigua, Tanzania. Submitted for publication.

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ACKNOWLEDGEMENTS

First of all I would like to express my gratitude to the villagers in Vuchama Ngofi, Simbomu, Kangata, Mkata, Kwamagome, Kibindu Komkonga, Kwachaga, Kwalugulu, Kwamkono, Kwamsisi, Kwankonge, Kwedikwazu, Magamba, Manga, Mazingara, Mzungu, Suwa, Negero and Pozo.

The study is part of two research programmes: 1) “Popular Participation in the Management of Local Natural Resources: the role of endogenous institutions in Tanzania, Zimbabwe and Mozambique”, and 2) “Community-based Natural Resource Management Systems in Tanzania, Conditions and Impediments” in the Institute of Development Studies in co-operation with the Department of Geography, University of Helsinki. I am thankful to the Academy of Finland, the Finnish Cultural Foundation, the Huhtamäki Foundation, the Rector of the University of Helsinki, and the Tanzania Forestry Research Institute for the financial support and facilities; the comments and help of Dr. Matti Nummelin, Professor John Westerholm, Professor Juhani Koponen, Vice Rector Paul Fogelberg and Professor Ari A. Lehtinen.

My main field work in 1997-2000 was done in cooperation with the Tanzania Forest Research Institute (TAFORI) and with the support of professor J. Saramäki and for the assistance of senior researchers Mr. T. Msangi and Mr. S. Mwihomeke of the Silvicultural Forestry Research Station of Lushoto to which I was affiliated. The support from the following persons and institutions has greatly helped me improve my understanding of the issues related to the study: Dr. Pekka Virtanen from the University of Tampere; Handeni Integrated Agroforestry Program HIAP; the Tanzania Forestry Action Program in Mwangi and Mr. P. Ansbach; the Survey & Mapping Photogrammetry Dept. Dar es Salaam; the library of the University of Dar es Salaam and the Eastern Africa Collection, the Dar es Salaam Town Library Archive; the Library of the University of Helsinki; the Embassy of Finland in Dar es Salaam; Dr. Hulda Gideon in the Centre of Science and Technology (COSTEC) in Dar es Salaam; the district commissioners and their staff, especially the natural resources officials and the foresters in Handeni and Mwangi Districts; Dr. S. Mesaki, Mr. C. Shehoza, Mr. Ngola, Mzee Mnango, Mzee B. Mdoe, Mzee Ally Mwampesen, Mzee Paulo Sangali, Mr. Ramadhan Nguzele, Mr. Salehe Mtambo, the late Dr. Murira, Ms. Mirja Ruokonen, and Mr. Anderson Kagisa.

I have been fortunate as a European researcher to spend four most challenging years in Tanzania. I have seen the heavy rains like *El Niño*, long draught, different seasons of activities: harvesting, planting, etc.; but also huge variations between years and effects of them on infrastructure, roads, fields, forests, agriculture, quality of air, and the differences of food and water in the villages. I have seen community hunting rituals in the middle of the forest under moonlight, felt the inner fire of the dancers when I participated in a ngoma around fires and drums. I have participated the healing of a young woman and hoped for easier days for her. I have been singing endlessly in long funerals, seen the hard times of peasants and participated in transporting maize from the Prime minister. I have caused enormous fear for small children in scattered settlements, I have met analytical people who have had time for discussion and showing their life.

All this does not mean that I see everything which is local or traditional as marvellous and good. Firstly even the local people do not see things so, and secondly the conditions

of the forests also varies greatly and indicates that the effect on the traditions may also have varied.

My greatest debt, though, is to the Handeni and Mwangi elders who gave so freely of their time and of their knowledge. Without them this research could not have been written. I hope I have deserved the confidence. And the interviews could not have been done without the cheerful co-operation and assistance of my research assistants Mr. Mlungvuana Mbazi, Ms. Magarage and foresters Mr. Hemedi Mkotti, the late Mr. Charles Mabula, Mr. Leonard Kileo, and Mr. Merisho Shabani. All these people are in a very real sense of co-authors of this study, and they are also great persons who are genuinely interested in their work.

Warm thanks are also due to Prof. Harold Brookfield, Prof. R. Chambers, Prof. P. Pellikka, Ms. Hilikka Ailio, Mr. T. Blom, Ms. Kirsti Lehto, Ms. A. Töyrymäki, A.Mtiba, B. Lenze, E. Gidion, D. Mwendu, G. Mwigu, Mzee Nasoro Kiyungi, Mr. J. Kulam, Dr. G.C. Kajembe, Dr. J. Kessy, Mr. Musa Mndemi, C. Miswala, I-A. Sinkano, Y. Chuma, K. Lukumbuzia, T.E. Mluki, Z. S. Hoza, Mzee Athumani Omari, Yusuph Mbuji, Musa Mwanyumbu, Mohamed Rajab, Rajab Serif, Juma A. Mchelo, S. Kiduo, Rajabu Sefu, Athumani A. Mbuji, A. Abdala, Mohamedi A. Mngumi, Helima Juma, S. Juma, the late Prof. Wembah-Rasid, Prof. R. Kalliola, Mr. Kiduo, Athuma M. Mkulago and Ali Masimba, Mr. Walesi, W.A. Mwangi; Bashiri Kinanja, Eliewaha Msuya, Amani Mroki, Isdine Saidi; Disnys Kazuve, Ms. Jane Kiri, Mr. Saidi Kamanya, Harune Nasoro, Hamisi Nyange, A.Waziri, Hasani Lebulu Mwidini Kinanguka, Hamfurey Kilauo, Shughuru Msami, Shughuru Kiraa, A. Waziri, Ibrahimu Falisi, Ramadhani Lerve, Juma Msoma, Kisaileni Angovi, Colonel Nsa Kaisi, Mr. Lassi Lyytikäinen, Dr. Pekka Nokso-Koivisto, Mr. Kimmo Elomaa, Ms. S. and K. Hietanen and Mr. V. Pesonen and support of my colleagues of the Department of Geography and Institute of Development Studies. Thanks for language corrections to Ms. Julie Uusinarkaus.

Finally, my the most greatest and the most deserved acknowledgements to my relatives and family. I have the best Matti, Helena and Ahti. You have been my secret power source and wonderful companions. To Riikka Laatu my wife, I hope, knowing your passion for waiting, I could find something totally new to make you even happier. I am thankful for all support and patience.

You made this possible and I am glad of it. Thanks!

Finnish Abstract, suomenkielinen tiivistelmä

Tansanian Zigua- ja Gweno-etnien pyhät ja perinteisesti suojellut metsät

Tutkimuksessa selvitettiin perinteisesti suojeltujen metsien merkitystä koillis-Tansaniassa. Tällaista tutkimusta ei ole aiemmin juuri tehty. Kylien alueilta löytyneiden metsien suuri määrä - n. 25/ kylä - oli yllätys. Näiden metsien suojelu on perustunut vanhoihin esikolonialistisiin perinteisiin. Tämän järjestelmän suuri vaikutus ympäristönsuojeluun on ollut aiemmin tuntematonta. Edelleenkin tutkittujen yhteisöjen kaikista maista n. 2 % on suojeltu perinteisesti. Siirtomaaisännät näkivät metsät vain pakanallisina kulttipaikkoina ja heidän silmissään niillä ei ollut lainkaan merkitystä ympäristöhallinnassa.

Tutkimusaineisto käsittää yli 900 metsää, näistä 40 % koskemattomuutta oli vanhinten mukaan häiritty tavalla tai toisella. Metsien yksi erikoisuus on ihmisten intensiivisen toiminnan ja koskemattomien 0,1-200 hehtaarin kokoisten metsäalueiden yhdistelmä. Metsien koskemattomuus on perustunut sanktioihin ja tabuihin. Ziguoiden alueelta löytyi 13 erilaista perinteisesti suojeltua metsätyyppiä. Niistä osa on suojeltu pyhyyteen perustuvien syiden vuoksi. Merkittävin metsätyyppi liittyy sateenkutsumiseen. Maallisempia syitä, joiden vuoksi metsiä on suojeltu, ovat mm. niissä tapahtuva piileskely, oikeudenkäynti ja koulutus.

Metsiä hoitavat instituutiot ovat suuressa muutospaineessa, ja tutkituista 5 klaanista ainoastaan 2 oli viimeisen 30 vuoden aikana järjestänyt saderituaalin. Moni kulttipaikka on ilman sateentekijää, eikä paikkaan sopivaa rituaalia enää edes osata, koska tekijät eivät ole siirtäneet taitoa jälkipolville. Samanlainen peruuttamaton muutos on menossa poikien initiaatoriittien kanssa.

Tansanian metsäntutkimuslaitoksen TAFORI:n kanssa yhteistyössä tehty kasvillisuusselvitys pyhissä metsissä paljasti ne luonnon monimuotoisuuden kannalta merkittäviksi. Mahdollisuutta käyttää metsiä endeemisten kasvi- ja eläinlajien suojelussa selvitettiin. Metsien koko, sijainti, topografia, puusto, hoitajat ja perinteinen käyttötarkoitus selvitettiin.

Uusi metsälaki vuodelta 2002 (jonka valmistelussa tutkimustuloksia on hyödynnetty) on yleisesti ottaen tuonut tullessaan paljon hyvää yhteisöjen metsänhallintaan. Se mahdollistaa myös pyhien metsien suojelun ensimmäistä kertaa siirtomaakauden alun jälkeen. Gwenojen pyhien metsien suojelijat ovatkin yhdistyneet ja sopineet menettelytavoista viranomaisten kanssa mikäli metsiä loukannut henkilö kieltäytyy perinteisistä sanktioista kuten esimerkiksi uhraamasta härkää vainajahengille. Monet ziguanuoret eivät enää tiedä pyhistä metsistään, mutta osoittautuivat hyvinkin kiinnostuneiksi omasta identiteetistään kuultuaan asiasta. Kaikissa tutkimuskylissä enemmistö piti perinteisesti suojeltuja ja pyhiä metsiä myönteisenä asiana.

Abstract

In Tanzania, indigenous forests can still be found whose existence is based on the management systems of precolonial society. This study covers material from over 900 forests. There are similar types of forests elsewhere in Africa, and similar forests can also be found in indigenous cultures on every continent. In this study they are called traditionally protected forests (TPFs). They have a high level of endemism and a rich biodiversity. The field study was carried out during the years 1997–2003 using participatory methods.

An active debate is going on concerning the capacity of local communities to manage their environment. The role of indigenous people and their institutions in the development of the physical environment is a central issue in the debate. This study discusses the opportunities that the local people have had to decide on how to conserve, maintain, utilise, and manage their environment during different political periods. The study explains what kinds of changes have taken place in these forests and institutions in northeastern Tanzania among the matrilinear Zigua and patrilinear Gweno ethnic groups.

About 2% of the land area of the communities was still protected by the precolonial structures. The communities have established their protection systems for different reasons, not only because of their beliefs but also because of different secular and clearly environmentally motivated reasons. There are different TPF types. Less than half of them are directly related to spirituality, and more than half are not. In earlier research elsewhere, it has been commonly understood that spiritual reasons played the main role in the protection of these environments. This study is also part of the postcolonial geographical discussion on the precolonial landscape and environmental management which was started by Carl Sauer.

In the Zigua case study villages, only two out of five first comer clans have performed rain rituals in the past 30 years. Many of the most respected sacred sites do not have a ritual maker or even a person who knows how to perform rituals any longer. The same is happening with male initiation rites. In all case study villages there have been illegal cuts in the TPFs, but variations can be seen between the communities. The number of those who neither respect indigenous regulations nor accept indigenous penalties is growing. Positive developments have also taken place. Nowadays, the Forest Act of 2002 is in effect, which works as a cornerstone of community-based land ownership and also allows elders to protect TPFs, and by-laws are created with the support of different projects. Moreover, during the field study it was found that many young people are ignorant about their village's TPF sites, but interested in learning about their history and values.

Key words: unofficial local forest conservation and management, colonial impact to environment and values.

1 Introduction

It is believed in many religions that nature is the dwelling place of the gods. Examples can be found in many cultures. In their pre-Christian history e.g. the Germans, Britons, Finns, and Celts worshiped under specific trees. The Hindus, Shintoists, Maris, and numerous smaller cultures around the world practice their “natural religions” in the nature. For this purpose, these communities have designated special sacred forests which are protected (more in article I).

The rarity of studies on sacred forests, especially in Tanzania, according to the bibliographical study (the small number of studies on this topic in African ethnomedicine has also been noted by Anyinam 1999: 129), make this study important. The vegetation in the forests is also unique. These forests are important as a part of local history and local identity. Their value is augmented by the fact that in the villages are no built structures from the times before colonialism and because of this the importance of the TPFs to the local cultural identity is emphasised.

The study sites are located in the Handeni and the Mwanga Districts. The main ethnic groups are the Zigua in Handeni and the Gweno in Mwanga in the North Pare Mountains (NPM). The field study areas are shown in Fig. 1. The Zigua and the Gweno have their own languages, which differ from the national language Kiswahili. The two research areas are ecologically very different. The NPM are a part of the Eastern Arc Mountains (EAM). Handeni is located on the lowland, closer to the sea. In Handeni are still remains or relics of the ancient coastal rain forests, but the main vegetation is a miombo type of forest (Campbell 1996). In the EAM rain is relatively regular and reliable, but in Handeni rain is much more unpredictable. The local communities in the area of the Zigua ethnic group were traditionally independent without a paramount chief or king. The Zigua communities are matrilinear as are most of their neighbouring ethnic groups. The Gweno people are, however, patrilinear, and their institutional setting developed into a kingdom which had clear natural borders towards the North Pare Mountains. There were also immigrant ethnic groups from other areas, but they were integrated into the ‘nation building’ through training programmes and a collective interests in maintaining peace and ownership for the people living in the mountains. The surrounding much drier lowland plain than the mountains was used by hostile Maasai pastoralists. The Gweno and Zigua are cultivators. Shifting cultivation was the mode of production in Handeni before the villagisation period, and this method is still very common. In the NPM cultivation is practised on permanent fields because no more land is available for shifting cultivation (in article IV, hereafter, articles will be cited by their Roman numeral). Because the Ziguas lived in autonomous, independent local communities, forests were also needed to maintain the functions needed in the independent territories in every studied community.

1.1 The central concepts of the thesis

Protection in this study refers to the limitations on human use set by the local communities or the districts and the central government. The meaning of forest protection differs from forest conservation in the sense that forest conservation is ideologically targeted to conserve

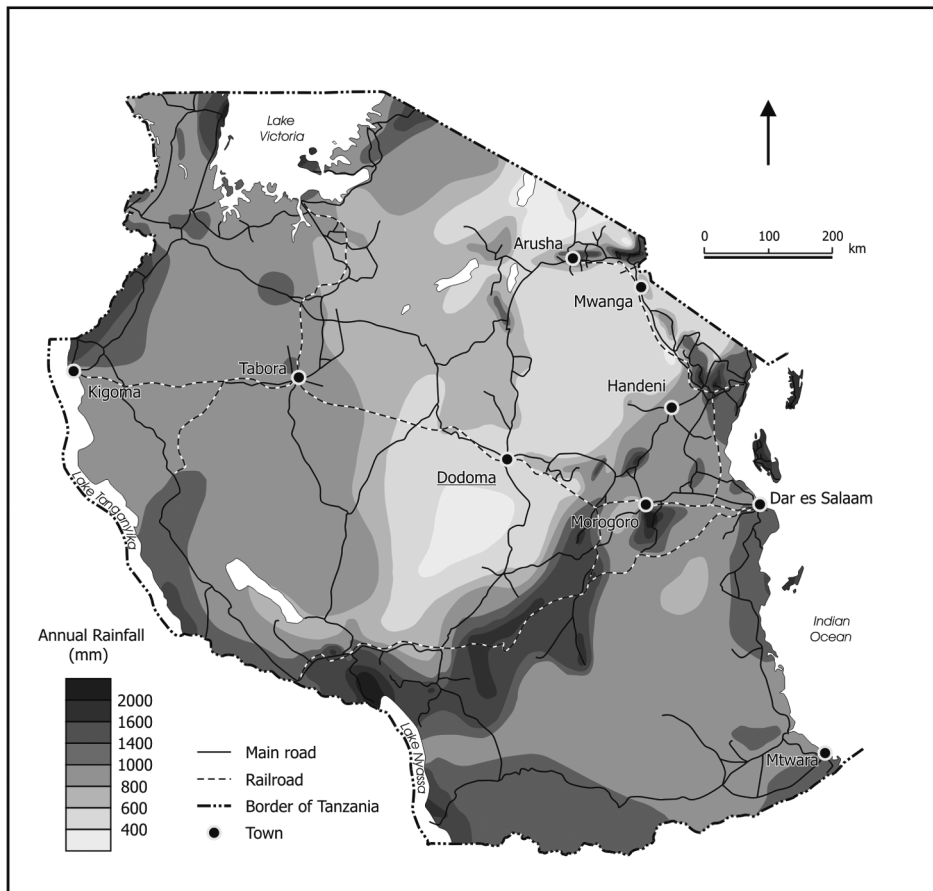


Fig. 1. The District Towns in the study sites, Mwanga and Handeni, and the mean annual rainfall in Tanzania. The dry areas north of Handeni town and around the Pare Mountains and the north and west sides of the West-Usambara mountains have been pasture farming areas of the Maasai people. The highest rainfall areas on the map have been the closed forests. Woodlands and shifting cultivators are located in 600-1000 mm rainfall areas. Source: Government of the United Republic of Tanzania (1971). Mean Annual Rainfall.

the forest and the environment, but forest protection can have numerous targets such as timber production, the protection of ritual sites, hiding places etc., and the final target is not necessarily conservation.

In this dissertation, a traditionally protected forest (TPF) means a forest which has been conserved from open access situations in different ways depending on the type of the TPF. Traditionally protected forests (TPFs) are part of traditional forest management, the roots of which lie in precolonial times. Forest management was and is still practiced by local communities.

Traditional does not mean static and unchanged. Due to political, environmental, cultural, technological, and spiritual changes, traditional methods have also changed. The meaning of the term indigenous is very close to that of traditional. In this study the term indigenous refers to people living in the communities who were born there and whose ancestors are or were remembered in community rituals. It also refers to areas where the original

vegetation (and endemic species) still exists (and has not been burned, planted or seeded) (cf. Kajembe 1994). The local community here means all people living in a village of the present day, or in the area of the clan of the first comer.

Traditional forest management means management which has been organised by indigenous people in different eras. The opposite of traditional forest and environmental management, which is organised by elders and on which there is no written documentation in Africa, is management organised by professional foresters and officials whose methods and objects are (or should be) regulated by forest, environmental and land policies as well as by written laws defined by the parliament and by-laws defined by the district councils. This is called official management. (III) The practice of community-based natural resource management (CBNRM) in co-operation between professionals and local communities is now in its second decade. CBNRM was developed to allow communities to participate in environmental management and conservation which before have been controlled only by environmental officials and foresters. Unfortunately there are many cases where the co-management has been only a new model of control by the central government (Howitt 2001: 369-377).

Good CBNRM is focused on people, their livelihoods and local organisations, their knowledge of their environment and local management systems. Co-management includes information exchange, new ideas, technologies, and occasionally, funds from the government (III).

1.2 The ethical questions of the study

In this study the main ethical issues are related to freedom of belief and good relations between members of the community, as well to the existence of the physical environment: biodiversity, forests, trees, plants, animals, and their habitat sites. The collected data can be also misused to change present power structures in such a way that the sovereignty of the local communities and institutions is diminished. An example of this could be an insufficiently planned CBNRM project.

In participatory methods, such as in rural rapid appraisal (RRA), ethical issues are very central. Respect, safety, democracy and the empowerment of the participants are essential elements of the methodology itself. Attitude is also important in RRA, the principles of which include sharing, learning, and avoiding meeting only "important" people, accepting the politeness of the local people and the timidity, avoiding being blind to the unknown, and avoiding the attitude of being right (Chambers 1983).

After the pilot study, we could see that 40 percent of the TPFs are somehow disturbed or destroyed, but there are large variations between the villages. If there is a trend of increasing disturbance, it is the responsibility of the researcher to inform the local communities about this trend. This may generate discussion and stop or retard the destruction. In this study, the information motivated local people representing different religions and age groups to think about and discuss the situation of the TPFs. The local herbalists and the botanists of the Tanzania Forestry Research Institute conducted an ethnobotanical study of the TPFs (Mwihomeke *et al.* 2000). According to the study, TPFs are valuable biodiversity reserves. This result increased the motivation of the study group as and stimulated the interest of the people in the sample villages. Detailed locations of the identified tree species are not mentioned, nor are the GPS coordinates of the forests and trees listed. The only site of snakes

which was found is not shown on a map for safety reasons.

It is possible that the field work has caused an increase in the cutting of trees in the Mkata village, but this is difficult to prove because many TPFs were already severely damaged during the pilot study. During the last visit to the fields, rumours were also passed on that black and white colobus monkeys had been transported to an ecotourism site near Arusha.

One of the study results is the finding that the TPFs are a quick and effective way to find ecologically important biodiversity sites which are also suitable, e.g. for in situ conservation. It is also possible to use this knowledge in a harmful way for illegal logging and animal collection. In the NPM, the new by-law is an effective tool for the caretakers of the TPFs and village councils to protect these sites and to get legal support. The by-laws make the work of the wrongdoers more difficult and also more immoral, whatever religion they practise. Now they are stealing from the local communities, not from the government which has inherited its legitimacy from the colonial period. (III)

In order to diminish the risk of the results of this study being used for the wrong purpose, detailed data (without GPS coordinates) is shown only of three villages in the Zigua area, and two in the Gweno area. In the two villages of the Gweno area, it seems that the value of the TPFs increased in the minds of the local people during the study. As a result, according to visual observation the forests were healthier during the last field visit than at the beginning of the study.

The risk of losing endangered species is not the only ethical issue in this kind of study. Actually, much more emphasis was laid on protecting the participants of the meetings. The preconception was that the “traditionalists” who still practise their beliefs are somehow pushed aside in the churches and mosques. During the study, the method was to find out slowly during the transect walks, informal discussions and meetings with the locals who are “traditionalists”, and to have private discussions with them, or group discussions with like-minded people. In the general meetings the stability of the community, respect for and the security of all participants were always more important than the data collection. In spite of this, the village meetings were colourful, and some people seemingly wanted to discuss problems related to the management of the TPFs and the practices of the recent past. Even in these situations the meetings were constructive, and the people seemed somehow reassured after the discussions. The discussions were directed from time to time to new issues when the group discussions became too pointed and personal.

At the beginning of the study, the target was to discover the caretakers and institutions behind the TPFs, and the hidden agenda was to consider whether external support for their work was needed. For this reason forest co-management alternatives are of interest to the study (III). Much critical research exists on the risks of co-management (e.g. Howitt 2001). Because of these risks, a lot of attention has been paid to identifying the possible spread of the increasing hidden control from the central government or e.g. from different environmental organisations abroad who offer funds for co-management. International funding agencies can be extremely active when they find important and unique sites for biodiversity conservation. Ethically, the TPFs are an exception in the CBNRM. Only changing values, modern life and co-management practices which have not been properly planned are a threat to the TPFs. Ecotourism can be a way of co-management. From this kind of revenue, the sharing of a CBNRM can be a problem if the revenue only falls into the hands of outsiders or a selected group of people instead of being shared among the community. The new

land and village laws and community-based land ownership, however, are good at enhancing equality in the communities.

1.3 The still existing precolonial management of forests

In Tanzania forests can still be found whose existence originates on the structures of precolonial society and environmental management. These forests are remnants of a former indigenous vegetation, but they are also related to precolonial indigenous institutions and spiritual structures. There are similar types of forests elsewhere in Africa (e.g. Biggeli *et al.* 2003), but they can also be found among indigenous cultures on every continent. In this study they are called traditionally protected forests. About 2% of the total land area of local communities is protected traditionally by the Zigua communities. In the case study areas, these protected areas are located in the small evergreen remnants of the coastal forests of Tanzania, or they are part of the forests of the Eastern Arc Mountains. This area is the endemically richest in vascular plant and vertebrate species per area of the 17 most endangered tropical forest ecosystems in the world (Myers *et al.* 2000). TPFs have been very little studied in Tanzania and Africa. In India this kind of forest is at present very much respected by environmentalists and conservation specialists, and a relatively large number of studies have been done about sacred forests around the Indian sub-continent (Jayarajan 2004). TPFs are a central part of the National Biodiversity Strategy and Action Plan of India (2003). The significance of TPFs in the conservation of biodiversity received attention after the compilation of the large book *Cultural and Spiritual Values of Biodiversity* by UNEP (Posey 1999). Anthropological interest has been concentrated on ceremonies, rites, rituals, songs, dances, tools, and ornaments, but the sites and areas where the societies practised the above activities have been observed in general terms only.

Not much written information exists on the state of the environment during precolonial times (cf. Sluyter 2002) from the area which is at present called Tanzania. The existing information is also mainly connected with the caravan routes which formed the contact with the global markets in various ways. Large areas of forest were constantly cleared for cultivation, and the presence of erosion and the shortage of fuel wood was reported by early travellers as early as precolonial times, at least in parts of Usambara, western Ugogo, in Unyanyambe around Tabora, Uhehe, and Sukumaland, but not from the NPMs (Koponen 1988: 368). Instead, the Zigua area was said to be well to do (Giblin 1992). In spite of these historical observations, Koponen sees the situation in those days as good when it come to environmental management. "As there was no 'Tanzania' as a political or social unit, there was also no single country-wide system of ecology control, but instead many local systems, or *modi vivendi* between man, society and environment [sic]. In a long process of trial and error and careful oral transmission from generation to generation, the people in precolonial societies had gathered and stored extensive amounts of ecologically sound knowledge of their own functioning and their immediate environment which was brought to bear in their systems of production and reproduction." (Koponen, 1988: 365) The people of Tanzania lived and most of them still practically live in a subsistence economy.

1.4 Different uses and types of traditionally protected forests and sacred forests

Traditionally protected forests and sacred or ritual forests have different kinds of protection statuses, depending on the particular clan and the purpose of the forest. The protection varies from a very strict total ban on use to very soft regulations. A total ban means that even entering the forest except for ritual purposes is forbidden. One important finding of this study is that precolonial environmental protection not only arose from the sacred or supernatural (this is sometimes alleged, see e.g. Baland & Platteau in the epilogue), but also from specific functional needs of the community and the management of the environment. In Table 1, the different TPF types are divided into two categories: 1) sacred forests and 2) profane forests. Both categories are classified according to different purposes, but many profane forests also have minor sacred sites. The sacred forests were and are the most important forests of precolonial societies, and they had the strictest prohibitions on access and secular utility. People everywhere make a distinction between the sacred and the profane. Items which are sacred are treated with reverence, deference and prohibition, and must be protected from the profane or secular (and from everyday life). Taboo is used as a type of traditional management method, but it is used only in certain situations. The word taboo refers to prohibited and sacred things or people which cannot be touched (by ordinary people) or even mentioned. In a larger context a taboo means an absolute prohibition on sexual behaviour, food and drink, and also behavioural norms. Taboos are always related to systems of belief. Table 1 is a summary of the descriptions of the different types of TPFs (more in V). Many forest types belonging to profane forests have supernatural elements, and sometimes these elements are so clear that the forests could well be classified under the first sacred forest category. However, the most important thing in this classification is the

Table 1. Traditionally protected forest types of the Zigua ethnic divided into two categories: I) forests with supernatural, ritual, spiritual and sacred elements. II) functional forests protected for the needs of the community. The different columns show activities can or cannot take place in the different types of the forests.

I) Forests with supernatural, ritual, spiritual and sacred element	traversing	fell down a tree	farming	hunting/ gathering	grazing	lodging
1) Rainmaking forest	no	no	no	no	no	no
1a) Figure forest for timing of the rainmaking ritual	no	no	no	no	no	no
1b) Sacred hunting forest for sacrifice	no	no	no	only ritual	no	no
2) Training forest for boys	no	no	no	no	no	no
2b) Bath forest for boy trainees	collecting	no	no	collecting	no	no
3) Bath forest for girl trainees	collecting	no	no	collecting	no	no
4) Koluombwa	no	no	no	no	no	no
5a) The firstcomer site	no	no	no	no	no	no
6a) Boundary forest with ritual sites with neighbouring clans	no	no	no	no	no	no
II) Functional forests protected for the needs of the community						
5) Tongo	yes	selective	yes	yes	yes	yes
5b) Tongo without a burial site	yes	selective	yes	yes	yes	yes
6) Boundary forest	yes	selective	no	yes	no	no
7) Hiding forest	yes	no	no	yes	yes	yes
8) Forests for councils or courts	yes	no	no	yes	yes	no
9) Herbarium	selective	selective	no	yes	no	no
10) Springs, water sources	yes	selective	no	yes	selective	no
11) Compensation forest	yes	owner clan	no	yes	selective	owner c.
12) Forest causing rains	yes	no	no	yes	yes	no
13) Forest reserves for future farming	yes	selective	elders' rule	yes	yes	elders' r.

fact that sacredness in category 2 forest types can also be thought of as a sign or warrant of the fact that the area must be conserved for a certain other purpose than its sacredness. In the first category the purpose of the preservation is sacredness itself. Hamilton (2000:58) has suggested a topology to classify different kinds of protected trees and forests which are governed by other actors than the government. He finds eight different categories: 1) cosmic species (trees of life), 2) trees of unusual size, age, or species, 3) historic trees, 4) sacred groves and temple groves, 5) temple-support forests, 6) trees and groves of malevolence, 7) patterns of landscape harmony, and 8) restoration and dedication forests.

1.5 The local environment and perceptions of the environment by outsiders

Meeting and interpreting a foreign culture has always been a challenge for researchers, colonialists and planners alike. There are many guides on the topic. Still, many issues remain either unrecognised or misunderstood for various reasons: the personal interests of the outsider, prevailing views, or political limitations. Sluyther (2002), in his case study of the Mexican landscape in the Veracruz lowlands, gives an excellent model of how Europeans totally misread the environment and the indigenous production system. In West Africa, Fairhead & Leach (1995) studied the Europeans' total misunderstanding of the local sifting cultivation and the meaning of indigenous intact forests and the environment. Also, the desires and fears of the local people affect both the way various phenomena are presented and the way an outsider interprets these phenomena. (Especially when studying a culture where written traditions, norms, laws and rules do not exist or have not existed, one has to rely e.g. on semiotic interpretations.)

In addition, in geography, in general, it is well known that peoples' perceptions of landscape and the environment differ. Perceptions of natural resources, beauty and the sacredness of a landscape also vary (e.g. Simonsson 2004, Gesler 1999). It may also be noted that what is often known as the 'bush' (a loosely defined part of the territory) by an outsider plays an active role for the local community in the social reproduction of the group or the lineage (Fig. 3). In fact, the 'bush' is believed to be inhabited by supernatural beings which have a strong influence on the life of the people living in the surrounding area. It is therefore a sacred portion of the territory where many rituals take place which serve to strengthen the harmony between living people and supernatural powers (acting on behalf of dead ancestors) on the one hand, and the unity among these people themselves on the other. These areas, as they are the home of the supernatural, can also be sources of gifts of game given to the community by their ancestors (Batak leader in Palawan, in the Philippines in 1992).

The principle of the inalienability of the lineage land patrimony (maternal inheritance among the Zigua people) is all the more strongly adhered to as an important symbolic meaning is attached to it. The land is emotionally identified with the ancestors to whom it is believed to provide an everlasting shelter land, a 'sacred trust' in the holding of the ancestors who are buried in it and who need to be continuously addressed through appropriate rituals (Baland & Platteau 1996:193; II). The objective of keeping the land under the control of the community is viewed as an inescapable way of maintaining the latter's social integrity. This kind of a view has facilitated the existence of many languages (e.g. in Papua) and a regionally heterogeneous social structure (e.g. in the area of the Zigua and their neighbours). The meaning of the bush as a sacred place or a place of ancestor spirits for the locals was

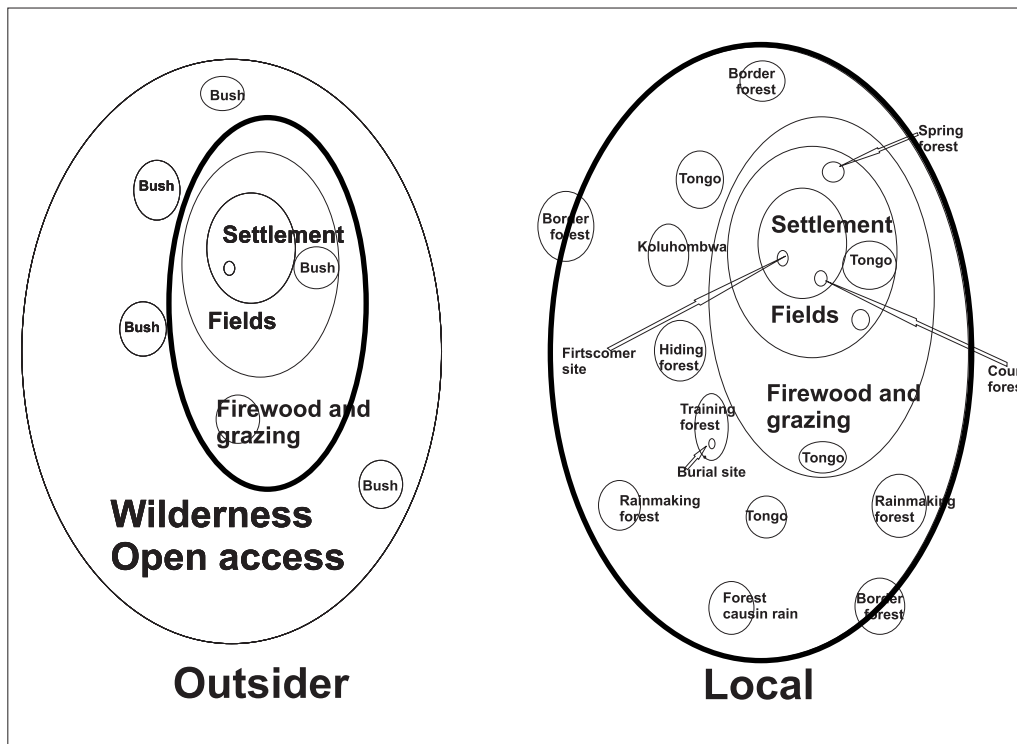


Fig.2. Two different perceptions of the landscape, vegetation and the environment: that of the outsiders and locals. The bold lines indicate the border of the local community as seen through different perceptions.

not apparent to outsiders, and at the same time the structures and functions in the environment were lost to them. The European colonisers were firstly illiterate in the indigenous environment (e.g. Fairhead & Leach 1995, Sluyther 2002) and secondly they were not able to change their policy and their selected direction towards these lands. Understanding that there are protected areas managed by the local communities is a big step, but the second step is to see variations and different kinds of bush with different meanings and purposes as well as restrictions. Rules of access to local resources truly manifest and symbolize the social identity of the group which first colonised the area where the resources are located. The first group occupying an area has always been keen to put a mark on it. These signs, trees and forests simultaneously served as corporate ownership structures as well as established political intergroup boundaries. (Baland & Platteau 1996:191-192) This is very much the case in the North Pare Mountains where the Gweno clans have protected their ancestors' first settlement sites as a type of a traditionally protected forest (see more in I, II and Kimambo 1969), but also in the case study village Kwamagome and in the stories of Nkanta in Mkata. The meaning of sacred forests is actually twofold. Firstly these forests link the soil and environment with memories in the form of a 'founding myth' as the starting-point of a people's history. Secondly it is the ancestors' land which can belong only to locals. (Baland & Platteau 1996:192)

The protection system and the sizes of protected areas vary along with the production system of a community. Hunter-gatherers use larger areas than agriculturalists, but do not normally have protected forests while they do have protected trees, rocks, caves or springs

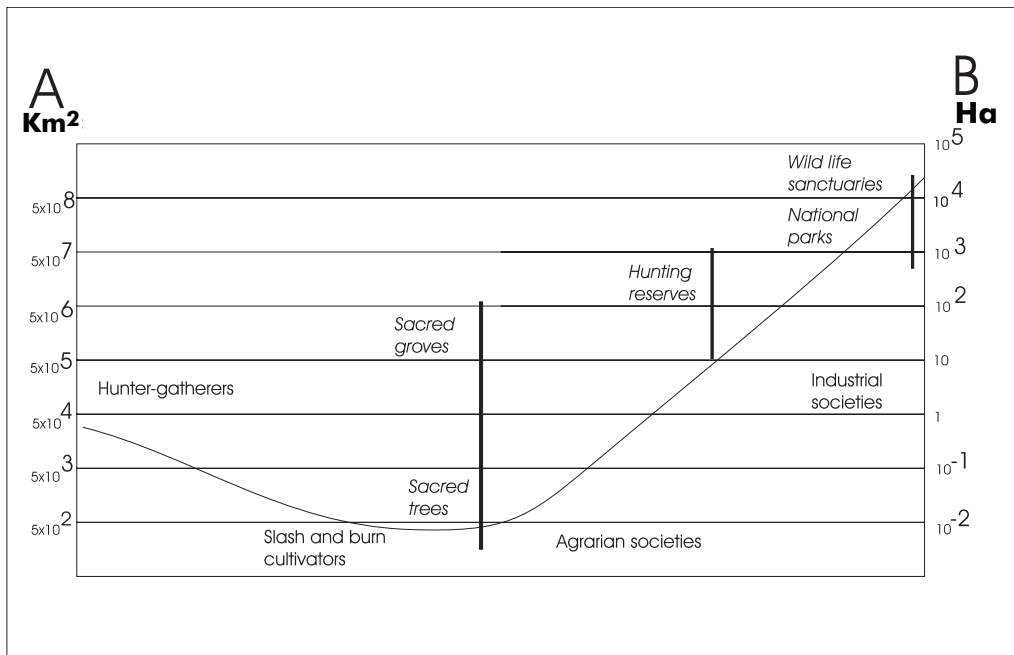


Fig. 3. Different communities by production systems and their relations between sizes of territory (scale A in km²), and sizes of protected areas (scale B in ha) around the world. The hunting-gatherers, slash and burn cultivators and small agrarian societies are mainly ecosystem people. Instead the large agrarian societies and industrial societies are biosphere people. Gadgil M., 1996. Managing Biodiversity. In Gaston K., (ed.) Biodiversity A Biology of Numbers and Difference. Pp. 345-366.

(Gadgil 1996). Their mode of production is not based on clearing pieces of land and permanent settlements, unlike that of shifting cultivators or permanent agriculturists. This can be one explanation for the findings of Gadgil (1996) presented in Fig. 2, but future studies may still change the present conception of his work. Pastoralists and cattle herders seldom have protected forests, but they do have sacred trees and mountains the same way as the Maasais have (Maundu *et al.* 2001: 12). One can roughly say that the smaller the mobility of an agricultural society, the smaller the protected areas (Gadgil 1996). Shifting cultivators often have protected areas of the size of 0.01-100 hectares, but larger areas exist. As examples, the Zigwas in Tanzania were found to have a protected area of 200 hectares, and Niamir (1990) mentions the size of TPFs as 12 km² in Burkina Faso.

Just as traditionally protected forests (some of them are sacred and some not, see Table 1) have been an important part of precolonial land management systems, so have sacred trees and planted trees. Different ethnic groups have different sacred tree species, and the reasons for sacredness and protection also vary considerably. Another example of a precolonial land management system is the “*ngitiri*” of the Sukumas, in the northwest of Tanzania, which consists of setting aside tracts of land for later use. These and other local nature conservation and forest management models still exist, although the colonial powers, missionaries and the laws and policies of the socialistic period did not respect them.

1.6 The precolonial period and its reflections on the present

A commonly shared opinion in anthropological and religious studies is that precolonial societies were a mixture of interacting forces: ethnic, religious, political, production and economic. Koponen (1988: 180) sees that they were undifferentiated except in one sense: "Functionally and institutionally they had no separate institutions in charge of different functions. Rather, the same institutions acted simultaneously in several functions. This gave the societies such solidity that the examination of one side without taking the others into account may be seriously misleading." According to Mshana (1992), the Pare people's highest development target was the society and good relations among its members. He sees that harmony in social relations was of more interest to the people of that time than, for example, increasing food production. This does not mean that they were unworried about food. In a ritual it was important that all clan members participated in the gathering, otherwise the ritual did not function. The people belonged to the community, and the community expected involvement and participation in the beliefs, ceremonies, rituals and festivals from its members. The absence of a person affected the well-being of other members of the community. The Zigua communities were autonomous, and practically, a community could only base its decisions on conditions within its own area. Instead, the Pare and Gweno communities were subject to a king who governed the geographically compact small mountain area and its communities. The environmental management systems of these kinds of autonomous communities were, and still are, not only based on decisions made by the community members at a given time, but were always also influenced by the presence of the ancestors. The past was omnipresent through their ancestors. This could also be one reason why matrilinear communities in a large area of the land in northeastern Tanzania remained independent before the colonial time in their decision making without becoming dominated by larger communities.

The duties of the chief were not only 'political' or 'ritual' or 'religious', but also economic and territorial. The history of local communities is found generally in the stories about farmers in the Zigua searching for land. The stories normally include a male leader and several women who are the founders of matrilineages. (Giblin 1996: 130) The first comer in the area started the clan and a new community with its own sovereignty. He and his descendants were the leaders of the community. The ritual place has always been created by the first comer in the area. The first comer site is one type of TPFs (Table 1). The land was controlled by the chief. In inheritance the leading principle was that land should remain within the lineage or within whatever descendant group was operative in this respect. The clan, *lukolo* in the Zigua language or *koo* in Swahili, is the owner of a particular territory. The word *lukolo* has been also used when describing the groups of people in the same localities, although there is a particular term for the locality: *si*, or *isi* in Zigua (in Swahili *nchi*). This equating of the meanings of the clan and the people of the same localities was made because the communities of Zigua were founded in one shared place, a village and a ritual place (for a particular clan), although people were not necessarily of blood relation (Oppen 1992). The above is a very common phenomenon in Africa, called a segmentary community.

Colonialism and German rule brought taxation, and in order to collect taxes, a system of *Akidas*, new "secular" leaders, as well as bringing plantations and missionary stations with schools close to the settlements. In addition, forestry reserves (Fig. 2 in IV) and other

reserved areas (Fig. 3 in IV) were established for the use of the colonial government. The local people were not allowed to cut trees or even enter these reserved areas (Sunseri 2005: 384). With the arrival of the British, the forestry reserves remained and new ones were even established. The legal system was divided between British law and traditional law.

Independence in 1961 brought with it African socialism and the Ujamaa villagisation policy and new settlements (e.g. Sitari 1983, Kikula 1997, Daley 2005a). The development was centrally led from Dar es Salaam, the government centre. The Ujamaa policy did not affect traditional settlements in the North Pare Mountains. However, it strongly affected the settlement pattern in the area, which is now called the Handeni District, the central Zigua area. At present, despite the change to a multi-party market-based society, Tanzania is still governed by the CCM, the former single socialist party, although now the party is governing with a mandate given by the people which has been tested in two free multi-party elections (on the mainland). The CCM has won both elections on the mainland without real competition from opposition parties. The politics of the party and the government have changed to support privatisation and a market economy (Daley 2005b). The new Forest Act 2002 allows forest reserves to be managed partly by the local communities. This is a change towards a more participatory society, and to a shared control of the reserves by the government and locals (e.g. Woodcock 2002).

Changes have taken place quite frequently in the recent history of Tanzania. The pre-colonial time was obviously not stable, as well. In this study the precolonial time is described in more detail than the times between it and the present, because this was the period when sacred forests and traditionally protected forests and the institutions taking care of them were established.

Today according to the field study of the traditionally protected forests of the Zigua, 40 percent on average of the TPFs are severely or completely destroyed. The remaining 60 percent are intact or slightly disturbed. However, the intact forests are in danger of disappearing in the near future. The main causes of destruction have been farming, the cutting of building poles, firewood, timber, charcoal making, and grazing (see also Mwihomeke *et al.*, 2000:191 and I).

An active debate is going on concerning the capacity of the communities to maintain their environment. The debate is constructed around the question of the opportunities that the indigenous people or local people have had to decide on how they conserve, maintain, utilise, and manage their own environment during the different political periods. The physical environment and the role of the indigenous people and their institutions in the development of the physical environment is a central issue in the discussions.

The cultural and biodiversity conservation and environmental management originating from precolonial times have recently been recognised to some extent in Tanzania. The National Forest Policy of 1998, the Forest Act 2002, Iddi (2002) and Newmark (2002:129-130) all mention the traditionally protected forests. On a global scale, the United Nations (UNEP 2003) Africa Environment Outlook brings forth the TPFs of Zigua as examples of the possibilities of biodiversity, environment and community-based conservation. The international community has also made commitments to the protection of sacred forests, e.g. UNESCO in its declaration on "Sacred Sites – Cultural Integrity, Biological Diversity" (more in Nummelin & Virtanen, 2000: 225-6).

2. Objectives

The aim of this thesis is to study indigenous precolonial management systems related to forest and biodiversity protection. The description of the indigenous, traditionally protected forests in local communities was the first task. We were interested in the physical characteristics of the environment such, as topography, vegetation, fauna, soil, and water resources. Also accessibility of the forests as well the as population density, settlement pattern, infrastructure and condition were studied. (I, IV & V). The second aim was to analyse the original, indigenous use of these forests (I, II & V). The third was to examine the attitudes of the local communities towards the TPFs, the environment and biodiversity conservation (II, IV & V).

The social and cultural factors affecting the management of the traditionally protected forests and the environment of the society are divided into two types, which are intertwined. The first one, ownership, is discussed briefly in the study (III & V). The significance of ownership varies from one ethnic group to another in Tanzania. Ownership rights can thus have different meanings. Ownership can, for instance, be individual, communal, or related to labour input. Usage has always been limited in TPFs, but approved types of usage vary. According to the pilot study (I), many traditional rules affect the use of the forests. Certain tree species may have been reserved, and it has been forbidden to cut certain species even from one's own yard. The right of use may be linked to place of residence, family, clan, guild, gender, age, or other distinction. For example grazing may be forbidden in certain parts of the forests.

The second set of factors is influenced by education and knowledge, religion, politics, power, social structures and the legal framework, which are reflected in the values, norms and beliefs related to the management of traditionally protected forests (II, III, IV & V) as well as the changes which have taken place in local communities, TPFs and institutions (V & IV). In the thesis five political periods are studied: the precolonial period, the German colonial era, the British colonial (and early independence) era, the villagisation period, and the present market economy (V). Usually the manner in which the political objectives in different eras have been put into practice has had a greater impact on biodiversity than "pure" nature conservation (III & V and Epilogue).

3. Structure and methods

Two facilitators (one of each sex and language of the study areas) were trained. The pilot study in the Handeni villages was organised by the village chairmen. The selected villages can be seen in Figure 1 in Article V. The village chairmen invited key informants knowledgeable about the traditionally protected forests to meetings. It was explained to the local people that the data would be used as background material in the preparation of the new forest act and land act. The majority of the participants in the meetings were clan leaders, respected village elders and village council leaders. Altogether 293 persons participated in the meetings. The participants of the village meetings were asked about the following issues: 1) the names of the traditionally protected forests in their village, 2) an estimate of the size of the forests, 3) the names of the main trees, 4) the caretakers of the forests, 5) the topography, 6) the habitats, 7) the condition of particular forests, and 8) the traditional use of the forests.

The data was analysed by using basic statistical methods (more in I and V).

After the pilot study findings and visits in some of the TPFs in the villages the hypothesis was that the sacred forests are remnants of the former coastal forest (Burgess *et al.* 1992). The TAFORI carried out an ethnobotanical study of the sacred forests, and a comparative study was also made outside the sacred forests to define differences between traditionally protected forests vs. public land forests. In the botanical research sampling, land formation, soil type, altitude, tree species, shrubs, herbs, lianas and relative frequencies were identified with the essential help of local “botanists”. The age composition of trees and their diameter at breast height were assessed to describe the status of forest succession. Part of the data is published in Mwihomeke, Mabula & Nummelin (2000). The assessment of the recent situation in January 2003 is based only on visual observations made by the author. More details about the data collection of traditionally protected forests are presented in Articles I, II, VI and V.

In the third phase of the study the attention shifted from statistical and visible issues to social and institutional issues. The framework for the case studies of the five villages was designed based on the literature survey and the pilot study. In Zigua, the Handeni District, three case study villages Kangata, Kwamagome and Mkata, and in Gweno, the Mwanza District, two case-study villages Simbomu and Vuchama-Ngofi were selected to represent different conditions of the forests according to the results of the pilot study.

In Zigua, Kangata represents a village where most of the forests have survived according to the elders. Kwamagome represents a village where the destruction of the forests is more common, and Mkata represents a village where undisturbed forests constitute a minority (Fig. 1 in V). The hypothesis was that the differences in the forests’ conditions correlate with the status of the traditionalists in the different villages. In Gweno area the selected villages differ from other villages in the sense that there are more traditional forests than in the other villages. The condition of the TPFs differs between these two case study villages. In Vuchama-Ngofi the traditional forests grow stately and intact and are a dominant feature in the landscape. In Simbomu the traditional forests have been badly degraded. Some forests look like thickets or secondary forests (IV).

In each of the five case study villages the aims of the research were presented to the locals. The main findings of the pilot study were also explained. The data collection method was based on rapid rural appraisal, RRA. The method was selected because 1) the literature gives almost no previous data about the TPFs and their management and also 2) considerable variations were seen between the ethnic groups but also between communities. Because the forest lands were legally owned by the state but community-based land ownership was being planned, there was 3) a need to know about the collective opinions rather than the private opinions of the people about the future of the TPFs. The data was collected using open and semi-structured discussions during group and village meetings with different groups of people, elders, women, men, and youth, to seek out the social and cultural factors presented above. In addition, forest officials, traditional caretakers of forests, and immigrants were interviewed. Maps were drawn to perceive the location, size and type of use of the TPF in the villages as well as the traditional borders of the communities. RRA maps were also useful in planning transect walks. The site specific data was collected during the transect walks. Transect walks as well as informal discussions and observations were used in the data collection, and valuation matrices were used in the village meetings to elicit illustrative con-

clusions and to stimulate discussion so that it still remains structured and to create a visual record of the conversation (various participatory methods are described in e.g. Chambers 1983 and 1997, Ulvila 1995, and Laitinen *et al.* 1995).

The specific issues of interest of the case studies were the same as in the pilot study. During the case studies, the aim was to check and compare the correctness of the preliminary results with the villagers' point of view and collect the complementary information needed, such as the geographical location of the forests in the villages, the demography, the economy, the natural resources, history, and special characteristics of the villages, people and their attitudes towards the present and future use of the forests. Local people's interest in the traditionally protected forests and their use, the categories of sacred forests, prohibitions existing in the villages, and the role of the caretakers of these forests were examined.

Information related to topography, natural resources, settlements, roads, and the TPFs is shown on village maps to describe the land management situation (IV & IV). For the NPMs, forest cover and farmland change maps were compiled, which are presented in Article IV. These maps are based on topographic maps, other maps, air pictures, satellite images and field work (more in IV).

Article I, (Mwihomeke *et al.* 1998) gives statistical information about a total of 920 traditionally protected forests which were found in the sample villages in the research areas. A preparatory study was carried out in cooperation with the Tanzanian Forestry Research Institute (TAFORI) at the Lushoto Silvicultural Research Station. The village councils and the old, highly knowledgeable elders were invited to meetings to discuss the traditionally protected forests. The discussions in the meetings were informal, and 293 persons participated in the meetings. A total number of 23 villages were selected in the Handeni study area, which represents a sampling intensity of 39 percent of the 59 official villages in the Handeni District. In the Northern Pare Mountains all of the villages of the in the Msangi and the Ugweno divisions in the Mwanga District were studied.

Article II, (Ylhäisi 2000) discusses the values of the local people related to traditionally protected forests and rituals. Values were measured in village meetings where each person involved in the exercise to allocate to 23 categories of needs and values. An analysis was made by summing up and sorting the data by geographical area, gender and age group. Religion, livelihood and location were also considered. It was found that people still value traditional rituals and traditionally protected forests even in villages where Christian and Islamic religions have gained a stronghold. Many of those who do not value the original use of the forests any longer, still value the conservation of these forests. Recently new religions' role in environmental destruction has been understood, but the TPFs have not been mentioned in these discussions.

Article III, (Ylhäisi 2003) explains the professional (western-educated) management systems which affect the local people and communities in their life and work. Also, the effects on the forest environment as a result of different ownership models and management practices are examined. Furthermore, it adds to the research on the role of local people versus the state in various natural resource management systems. The traditional responsibility for the environment of the local communities has been eroded by various factors: the nullification of their conservation methods, the exclusion of local people from mainstream decision making and the management of natural resources, and the ambiguity of land ownership during the colonial and socialist era. As misuse became common, pilot projects on alternative

management methods were started, and as a result of their success the Parliament decided to return management rights and give ownership rights to local communities. The significance of customary land law, forest policy and legislation to local communities is discussed in Article III. The new land and village laws and community-based land ownership are good in that they encourage the communities to have a more equal partnership than before, but they also help the communities control their environment against illegal loggers as well as the legal forest companies. The new forest law requires village councils to have management plans for their forests. The Department of National Resources in the District approves the utilisation plans.

Article IV, (Ylhäisi 2005) evaluates the extent and effects of the fragmentation of the forests, especially indigenous forests, in the Eastern Arc Mountains, and particularly in the North Pare Mountains (NPM). In the NPM the forest fragmentation proved to be worse than presented in previous studies. The importance of the local TPFs for biodiversity conservation and local management practices are studied. The biggest TPFs are presented in the vegetation maps. The existing ecological corridors and those which have disappeared during the past 15 years are also presented. The altitude of the TPFs is important because other indigenous forests have disappeared from these altitudes. The by-law has empowered the traditionalists and also village councils to protect TPFs with the legal and official support given from the Department of National Resources in the District.

Article V, (Ylhäisi 2006) describes the case of the Zigua, for whom the change to a global market economy with its values started in the late precolonial time 150 years ago. The different kinds of TPF types are identified. The TPFs of the three case study villages are identified on the village maps. In addition, life, institutions and activities such as the rainmaking ritual and initiation rites are studied in the case study villages. Also, the life expectations and attitudes towards the existence of the TPFs of the younger generation are studied as well as their knowledge concerning their villages' TPFs.

4. Main results

The main results concerning the following issues are briefly described in this chapter: the change of leadership, the production system, the loss of autonomy, land rights and traditionally protected forests.

4.1 The precolonial period

There were very few centralized or sophisticated polities (although they are the most studied) in Tanzania compared to the number of loosely structured societies (Koponen 1988: 191-209), and forest or game reserves or natural parks (reserved areas in Fig. 4, V) did not exist. Neither were policies or development plans given from above. The communities had only TPFs and sacred trees to limit their management. The integrated kingdoms were e.g. the mountain kingdoms of the Pare and Usambara Mountains. These kingdoms had particular ecological and topographical areas which they could easily protect by unifying themselves against outside enemies. According to Kimambo (1969), in the Pare Mountains the expansion of the polity was effected through the modification of the ritual emphasis from clan- or lineage-based shrines to kingly rain-making shrines (Kimambo 1969, Kimambo &

Omari 1972, V).

Precolonial leadership was inseparable from the spiritual and ritual duties of the chief (Salokoski 2006). Rainmaking, land fertility and control of witchcraft were entrusted to the chiefs (Giblin 1992: 77), although in some societies he only 'lead' the ritual with the know-how of the rainmaker. The people belonged to the community, which expected involvement from its members and participation in its beliefs, ceremonies, rituals and festivals, but the community also expected a shared well-being. The absence of a person from a community ritual affected the well-being of other members in the community. The target of harmony in social life in these communities is natural and understandable as the societies, are autonomous and their decisions are based on the livelihood which is able to be taken from their own environment, not only today but also in the past and the future. It can also be assumed that it is forbidden to destroy the harmony of the source of their livelihood and the home of their ancestors. These kinds of societies do not often move to other ecological environments because their indigenous knowledge has developed and is sustainable in their ancestors' land (e.g. Conte 1994: 44).

Rainmaking, rites of purification, planting and harvesting rituals as well as the rights of passage to adulthood were important to the unity of the society. The spiritual duties of the chief also legitimised land ownership for the whole community. Land, resources, and production control methods, together with religion, were used as tools to achieve the ultimate goal of communal harmony. The place set aside for rituals has always been created by the first comer in the area (also Giblin 1992: 73–77, also Hasu 1999: 62, on Mount Kilimanjaro, Spear 1997: 21 on Meru). He and his descendants were the leaders of the community. The first comer area is one kind of TPF (more in V). There are thirteen different kinds of TPF types. Less than half of them are directly related with sacred in origin, and more than half are not (see Table 1). In comparison with earlier research, it is a new finding that other than spiritual reasons have also played an important role in forest protection.

The Zigua people lived in small hamlets. In some places, however, larger open villages with up to 200 inhabitants existed (Beidelman 1967: 69, Koponen 1988: 350, 351). The locations of these villages were mobile compared to European villages. The shifting cultivation production system and the abundance of land favoured a mobile way of life. The climate made building materials easily available, but the materials also quickly eroded because of insects. While the settlement pattern changed, the TPFs remained static as well as did the mbago forests around the settlements. Zigua settlements were located in relatively few areas, where people could find adequate amounts of water and moist soil, leaving drier areas uninhabited. According to Giblin (1992: 119, 130), continuously cultivated plots were important because guarding the crops from birds and bush pigs and monkeys was easier than protecting patchy plots. Farmers created soil and vegetation formations by performing frequent and extensive burning to allow the growth of new fresh pasture, to prevent the bush from swallowing up paths, and to keep wildlife and insects away. According to Giblin (1992), fires, clearing and grazing created a favourable environment for livestock, particularly in heavily settled locations. The fires affected large areas which were further away from the settlements, and they influenced the vegetation communities and the development of forests into miombo type of forests as a primarily fire-derived ecological formation dominated by *Brachystegia* and *Isobertinia* trees (Campbell 1996).

4.2 The colonial period

The first mainland mission was built in 1868 at Bagamoyo on the coast and at Zigua in 1878. As early as 1884 missionaries interfered with ancestor veneration and destroyed ritual forests where such rituals were performed (Giblin 1992). In Tanzania the German colonial period started in 1890. Germans, just as other colonialists had done, overlooked the interaction between the local people and the environment. Instead, the German colonialists were interested in the management and development of the production of natural resources and considered the locals to be a threat to the environment. In this way they legitimised their control of the most important material resource of the locals – the land – and isolated the locals from the best lands and forests. All land to which private ownership could not be established was, according to the Germans, without any owner and transformed into “crown land” in 1897. The government had the authority to demand alienation from local people at any time (Okoth-Ogendo, 1999: 3). For the locals, conservation for the public good meant restrictions of their private rights: the rights to graze their animals, to cultivate, and to cut timber and fuelwood (Anderson, 1988: 258). The above principles have stayed in force until the latest changes: the community-based natural resources management, CBNRM experiences, the new policies, and finally laws (III).

The colonial government needed local village chiefs to collect taxes, which were collected according to the number of huts in the village. The chiefs found this difficult. Traditionally, the chief was also the patron of the villagers and the villagers were his dependants. It was contradictory for the chiefs to collect taxes for the Germans. The fact that the taxes were mainly to be paid in money (Giblin 1992: 91), which did not exist in the villages, made the task even more complex. The time spent on paid work outside the village resulted in less time spent on agricultural work in the village, and the salaries were so low that saving was not possible. The chiefs were not interested in organising people for this kind of work. At the same time the chiefs were not capable of paying the taxes which the Germans demanded from the whole community. As a result the Germans replaced the chiefs with *Akidas* (educated persons from the coastal Swahili area). The *Akidas* had political power but they possessed little of the legitimacy that the precolonial leaders had had. According to Giblin (1992: 115, 116), it seems that perhaps the *Akidas* tried to counter the influence of the indigenous chiefs by serving as Islamic teachers and prayer leaders. Between 1900 and 1915 was the first time that, people in Zigua professed Islam in large numbers.

The result was that the *si* identity, group participation and social co-operation decreased in the villages. The original chiefs lost their position, and the structure of the societies eroded relatively quickly. The family became the highest level of solidarity in the communities. The ritual which both reaffirmed *si* group identities and sanctioned political authority fell into disuse, and the decline of precolonial authority erased the political relevance of the *si* identity.

In 1905–1907 the *Maji Maji* uprising took place. It was organised by the locals and was the largest revolt against the oppressive regime in Africa. E.g. sometimes forests that had a particular spiritual meaning were controlled by the Germans (Sunseri 2006). It was a surprise for the Germans, especially the number of different ethnic groups and the geographical extent of the uprising, which covered two thirds of the colony. About 300,000 locals out of a population of over 4 million died. After *Maji Maji*, the local traditional leadership lost

its power and acculturation accelerated in religion, education, economy, etc. The name of the rebellion, *Maji Maji*, means holy water, which was believed to make the German bullets harmless against the locals. The Zigua and Gweno ethnic groups were, however, not part of the rebellion.

In 1904, the first official forester of the colony and the Forest Conservation Ordinance designated three-quarters of a million hectares of crown land as forest reserves where no settling, farming, grazing or other unauthorised use was allowed. The new forms of governance by the colonial administration over traditional societies did not only serve to erode the authority of traditional institutions, they also had a negative effect on village level social conventions that previously controlled natural resource use. Almost all montane forests which are still reserved were reserved during the German colonial time. By 1913, the reserves covered some 7,500 km², about 0.8 per cent of the total area of the country (Koponen, 1994: 533). After 1906, certain valuable mountain forests were subject to commercial exploitation and, for example, only a few African pencil cedars (*Junipers procure*) remain today (Schabel, 1990: 136). There were also 15 wildlife reserves, covering about 5 percent of Tanganyika, before the First World War (Baldus, 2001).

The British colonial period started with disaster after the battles of the First World War. Altogether about 165,000 people died as a result of violence and lack of food. A series of major famines affected Handeni between 1898 and the early 1940s. Famine conditions were exacerbated by the decline of the precolonial collective production system, although they were related to several other factors during the German period: monetary taxation which forced food sales, locust plagues and lack of rain. Bovine *trypanosomiasis* and *theileriosis* (East Coast fever) epizoa were common. (Giblin 1996: 143) The British had a concept of ethnicity in organising their colonies, and they created “clean tribal boundaries”. Inside the boundaries every ethnic group had their own law: the local customary law. This was taken so far that people living outside their tribal boundaries were resettled to the area of their own “tribe” (Jermain, 1997: 232).

The British shared the Germans’ interest in forest protection, and one of their first tasks after the war was to reclaim the old reserves and empty them of the people who had entered them during the war. They also added sizeable additional areas of miombo woodlands (*Branchystegia-Jubernadia* savanna woodland) to the reserves. The new reserve areas became important because a new railway connection made large-scale exploitation of these forests possible.

Before German and British rule, the moist tropical forests were three or four times more extensive than at present. Their reduction is principally a result of clearing to make room for plantations of coffee, tea and rubber, which were grown for export. Other densely forested areas were cleared for sisal plantations (in the V in Fig. 1 all plantation fields are sisal and established by the Germans and British). Many drier wooded areas were cleared for cotton, tobacco, and groundnut. The unsuccessful attempt of the British to turn Tanzania into a major groundnut exporter also caused massive deforestation in southern and central Tanzania. The biggest social and ecological impacts of colonial export crop production were indirect. Social differentiation in the communities increased depending on whether the farmer participated in export production or continued traditional food production. Old rules regulating land tenure, production and distribution on a sustainable basis began to break down (Barraclough & Ghimire, 1995: 79-82). These changes affected leadership in

the local political authority. The foundation of their power and legitimacy changed from being based on rainmaking skills to mediation with the colonial administration.

Altogether conservation areas covered 98,244 km² in addition to the forestry reserves which covered over 100,000 km². During the British colonial time in 1952, much of the forest in the forest reserves was already secondary forest, despite the conservational targets (Lind & Morrison 1974: 209) of the reserves.

4.3 Independence and the Ujamaa period

The traditional chiefdoms created by British rule were officially abolished in 1962 soon after independence. The independent government of Tanzania continued the policy of reserved areas, and even expanded their number and size.

From the 1967 Arusha Declaration (Ujamaa or socialist guidelines), the economy was state-dominated until the 1990s. After the nationalisation programme in 1967, land was not a commercial commodity and was not to be treated as such. At the same time, the forceful 'villagisation' exercise resulted in the uprooting of about 9 million rural people from traditional villages into new locations with serious environmental consequences. In 1976, 85% of the population lived in Ujamaa villages (Sitari 1983: 5). The total population was about 17 million in 1978 (Koponen 1996: 23).

A uniform village size was used all over the country irrespective of ecological differences, and old traditional methods such as the circulation of settlements, farming and animal husbandry for the sustained use of land were discarded (Kiunsi 1994: 29, 30). According to Kikula (1997: 14), villagisation was the beginning of the trend away from shifting cultivation towards permanent agriculture. Villagisation resulted in the abandonment of the traditional scattered and semi-permanent settlements for concentrated and permanent settlements. In many places it also changed agriculture from shifting cultivation to permanent. In 1974, the majority of the local population was forced to settle in registered villages (Open 1992:13). Leaving the sacred sites and ancestor cult places was a mental upheaval for the indigenous people who used to live in a certain *si* formation (Sitari 1983).

The 1975 Village Act ("Ujamaa Villages") gave the village authority over certain natural resources that fell under the category of village land. However, a village had no mandate over any resource in its area of jurisdiction if there was a protected area. It had only a mandate to utilise certain land which the government could take over when needed for the public interest.

The government foresters and the Forest Division of the Ministry of Agriculture, according to Hurst (2003), gradually marginalised themselves from the development core of the nation after independence. They were not capable of changing their practices and adjusting to changes needed in the new demands in Tanzania. Instead, they continued the discourse of colonial forestry. The foresters were educated in British or foreign institutions, and they were adherents of international forestry ideology. The foresters working in international forestry organisations (e.g. FAO) were also taught the same values, principles and attitudes. Foresters commanded large areas of the Tanzanian landscape given for them to take care of, but they forgot the socio-economic dynamics of the communities around them. This became evident e.g. when comparing their role with that of the agricultural extensionists who saw themselves as advisers of local people. This attitude is also reflected in the way the foresters handled the

issue of the key consumers of the non-monetized forest products who were women. The first trained female forester was employed by the Forestry Division as late as 1978.

More land from the forest reserves was required for cultivation, especially in the high-density areas, and as a consequence forest lands were gazetted. At the same time, it was expected that the foresters manage to increase the profits of the sector. The foresters had very little interest in the peasants' need of wood. Native Authority Reserves were left to local authorities with little support from the Forest Division, and the forests on public lands received even less support, with the exception of the exportable species (e.g. *mninga* and *mvule*). The foresters limited their work inside the borders of the forestry reserves (which was, at the time, common throughout the world) (Hurst 2003: 366). Repairing the damages caused by mismanagement of the 1960s to 1990s is now a challenge throughout the world.

The weaknesses of the local governments led to the collapse of all essential services such as roads, communication systems, sewerage, refuse collection, etc. In some areas recovery is not yet in sight nearly twenty years later. The government's revenues from the forest reserves have been always extremely limited compared to the expenditures of the sector. The socialist experiment brought the country close to bankruptcy, although the global markets did not save most of the capitalist African states.

4.4 Recent times

The influence of traditional leaders is today informal, but their knowledge is still being used in land issues, especially in conflict situations. The natural resource governance system, which was based on customary social relations (kinship, neighbourhood), has increasingly been transformed into one based on national legislation, government institutions and village administration, especially on public lands.

Despite the high numbers of reserved lands and forests, about 45% of the country was affected by different types of degradation in the 1990s (Kiunsi, 1994). The deforestation rate was at about 0.3% annually, but twice this rate in the mangroves and humid tropical forest areas (Barraclough & Ghimire, 1995: 79). In Africa, the forest loss between 1990 and 2000 was nearly 0.8% annually (UNEP, 2003).

Unfortunately, problems occur in the protection of government forest reserves and parks. According to the fairly recent report of the Tanzania Country Study on Biological Diversity (1998:51), only 9% of the protected 'low rain forests' and 33% of the 'Afro-montane/ Alpine shrub' areas are still covered by natural vegetation. According to Newmark (2002: 11), most of the borders of the reserves are poorly defined. In the field beacons have disappeared, and even border tree lines have been illegally cut (Persha 2003). Vegetation growth has obscured marked boundaries; demarcation is often incomplete. Large non-forested areas inside the reserves confuse the picture even more. The most common reasons for the destruction of these areas are human encroachment and fires. Especially in the North Pare Mountains, fire has damaged over a fourth of the closed forests just in recent years, mainly inside forest reserves (see Fig. 3 in IV). Also, the forest plantations of exotic tree species - about 115 km² in the EAM - are in the former natural forest areas and threaten the survival of indigenous species.

Many reasons for peoples' behaviour can be cited, which originate from the history of the forest reserves since their establishment during the colonial period (more in II, III and

IV). The government's takeover of the management responsibility for common property resources has often resulted in open access situations, particularly in the establishment of a new forestry reserve. In an open access situation there are no tenure rules. Nothing is being managed. Anyone uses the resources at his or her pleasure with no constraints. In the case of the NPM, the situation of forest degradation is already somewhere between shrinkage and attrition according to Forman's (1995) categorisation in Article IV. The loss of the indigenous forests in the NPM during 1982–1997 was 31%, and the loss of all types of forest was about 37%. During the same period the cultivated land area increased by 68%. In 1997 the total area of the indigenous closed forests was no more than 5% of the land area. Only about a fifth of the Government Forest Reserves (FRs) remain closed forests. Fires damaged over a fourth of the closed forests in 1997. Areas protected by the government are essential for the conservation of biodiversity in the EAM and the NPM. Unfortunately, the situation is not better elsewhere in the country.

In the Handeni District, altogether 660 traditionally protected forests were listed by the elders during the pilot study (Fig. 1) in 23 villages (I). Almost 50% of TPFs are located on a hill or hill slope, and about 30% on flat land. The rest of the forests are around rivers (10%) or around rocky and cave sites (almost 10%). On average, all the main habitats exist in every village, and 60% of the traditionally protected forests in Handeni are intact or slightly disturbed. The remaining 40% are severely or completely destroyed. According to the participating elders, the main causes for the destruction are farming, the cutting of building poles, firewood and timber. Forest fires, charcoal making and grazing were very seldom mentioned. Earlier TPFs were near or beside settlements, but because of the villagisation programme, TPFs are nowadays sometimes far away from the new main settlements of the clan, which makes their control more difficult. The sizes of the TPFs vary. Some of the TPFs are as small as one remaining sacred tree, or not even that, and some are over 100 ha. For the three case study villages, the largest existing TPF is 83 ha and the average size is quite high, 6.9 ha. In the pilot study the average was 4.7 ha. (I)

In general it is obvious that the elders did not overestimate the sizes of their forests, but instead they underestimated their sizes. This was also the case in the study villages. In the three case study villages, the difference comes mainly from the largest forests, which were always underestimated, even as, the smallest forests were generally slightly overestimated. It seems that the method used in the pilot study gives quite a good overview of the sizes of the forests. (V)

The perceptions of the officials of the role of the local people have changed from the colonial times to the present. Environmental officers during the colonial period had the opinion that local people are harmful to their environment. Today, officials feel that communities are losing their traditional conservation practices and indigenous knowledge, and because of that the communities have become again harmful to the environment. The officers also feel that communities are in transition into areas of high biological diversity, and their traditional conservation practices and knowledge are not applicable to these new areas. Even communities used to living in these areas are on the way to making compromises between their conservation practices and economic growth. (The Tanzania Country Study on Biological Diversity 1998: 107) The by-laws, laws and cultural prohibitions on land and forest use in practice do not have any influence in preventing people from using the land and forests. People prefer and follow the unwritten policies that enable them to survive. People

are aware of the fact that by colonising land haphazardly, they are destroying their most important partner in survival (Mvungi 1998: 164,165).

The NPM is a special case because there still is a high number of small forest patches with natural and indigenous vegetation there. The reasons for this are the local culture and religion, which are retarding the process of the diminishing and elimination of the small patches of traditionally protected forests.

Forest and nature conservation cannot be detached from the environment. Those in power (e.g. the government and forest officials) have now come to a situation where they no longer have the resources needed to continue an authoritarian style of management. At the same time attitudes towards local people and their capacity to manage their environment have also become more positive in general. In this situation the government has realised that it is necessary to listen to people, or preferably to anticipate or foresee their opinions.

Former absolute power holders in land ownership matters (the parliament and the president) have succeeded in renewing the power systems in such a way that the new rules (the new Forest Act) entail the possibility for independent decisions on the use, reproduction and protection of the environment at the local level. At the same time, for the first time in history, it is possible to distribute state forests to local people and communities as forest reserves. Most of the unreserved forests are still within village boundaries. In 1999, about 323,000 hectares of unreserved forests in 544 villages were managed under the new concept entitled Village-Based Forest Management. The size of these was 20-27,000 ha (Alden-Wily & Dewees, 2001: 14, 19).

Recently, conservation and environmental management originating from the precolonial time have been recognised to some extent in the National Forest Policy of 1998 and the Forest Act 2002. One concrete example is the by-law agreement in the NPM. The Mpungi and Mishitu association in the Divisions of Usangi and Ugweno, the Tanzania Forestry Action Plan NPM (TFAP NPM), and the Department of National Resources in the Mwanza District have made a local agreement, by-laws (Appendix 1 in IV), to continue and support the traditional protection of the forests. It allows the caretakers of the TPFs to protect their forests. In the agreement a solution is also given for sacred sites which have lost their caretakers for different reasons. The most common reason is that the caretaker has adopted Christianity or Islam. In such a case a village government will take the responsibility for protecting the forest. Cases like this can be found in the Simbomu and Vuchama Ngofi villages. Another positive feature in the agreement is a mechanism whereby the caretaker can leave an unsettled case to be dealt with by the village government. There are several reasons why this helps protection. Caretakers are normally elders and for them, because of their age and poor health, it is difficult to wait outside the courtroom for their case to be handled. It is also difficult when close relatives are responsible for the disturbance. It is easier for everybody to use an "outsider" village government in this very common situation.

The agreement also creates a mechanism to replant disturbed TPFs with the aid of government foresters. This is a very important strategy in general, and a good example everywhere in Tanzania (Iddi 2002:63). The agreement also gives a recommendation to use indigenous tree species when replanting.

About 77% of the TPFs in the NPM are located in the most fertile altitudes between 1200-1400 meters where no government forest reserves (FRs) exist. The total area of the TPFs with riverine forests, which have been protected by local communities, is considerable,

about one-third of the size of closed forests inside FRs. In that sense the importance of the TPFs for biodiversity conservation becomes evident. Their conservation is based on the local caretakers' situation and customs. (IV).

Positive results from the above by-law are already noticeable. The sacred forests of Simbomu were not in good condition in 1997 and 1999, but in January 2003 these forests were seemingly healthier and recovering. According to the village leader, the reasons for this were the new awareness of the uniqueness of the forests during the survey made between 1998–2000 and the legal instrument given to the village council by the TFAP agreement in 1997.

The correlation between the values of the people and the forest quality was clear. Almost 80 percent of the participants in the village meetings valued TPFs to some degree (the comparative figure in Simbomu was much lower). A little less than 50% of the participants in Simbomu still valued these forests (II). The same type of correlation between values and the condition of the traditionally protected forests was found in the Kangata, Kwamagome and Mkata villages in the Handeni District. There are thirteen different kinds of TPF types. Less than half of them are directly related to the spiritual or sacred in their origin, and more than half are not. In comparison with earlier research, it is a new finding that reasons other than spiritual have played an important role in the forests' protection. In the study the forests are identified on the village maps.

Life and institutions have changed a great deal in the study villages. In the case study villages, only two first comer clans out of five have performed rain rituals in the past 30 years. Many of the most respected sacred sites do not have a ritual maker or even a person who knows how to perform them. The same is happening with male initiation rites. According to the study, the life expectations of the younger generations are also changing. If the forests are unused, many people consider the restrictions concerning their use meaningless. There have been illegal cuts in the TPFs in every case study village. (V) More and more people neither respect indigenous regulations nor accept indigenous penalties. Both cases are problematic for indigenous local people. (II, V)

Positive developments have also taken place. Nowadays, the central government allows elders to protect the TPFs, and by-laws are created with the support of different projects (III, IV). In addition, during the field study it was found that many young people are ignorant about their village's TPF sites but are interested in learning about their history and values (V).

The position of the traditionalists is changing due new influences from outside the community. The new institutions (e.g. churches) are also changing by adapting to local needs. These processes are very evident in the new religions. For example, the right timing of rain is vital to these subsistence farming communities. The churches and mosques have adapted to the conditions of the area by sharing the concern for a good harvest with the people. For instance, in 1996–1997 during a long drought which lasted for eight months in Kwamagome, the churches organised rain rituals in the churches. It took six days before the rain came. People agreed that the rain ritual is very important. (II & V)

4.5 Management alternatives and the value of TPFs in biodiversity conservation

Traditionally protected forests are ideal for *in situ* conservation. Sacred sites could, in the present language of conservation, be called man-made *in situ* biodiversity banks, which could be even used for *ex situ* purposes if the community allows. In some cases, community needs and biodiversity preservation objectives can be achieved simultaneously (IV & Kothari 2001). The culture, customs, by-laws, institutions, and organisations of local communities, and the indigenous habitat sites of very specific plant and animal species also support this idea. In the case of *ex situ* conservation, a TPF could be a place for plants and animals which have lost their habitat for some reason. Alternatively, they can be new habitat areas when the populations of some species need to be increased. In places like the NPM, which is an ancient forest habitat on “island type” mountains that are part of one of the most endangered biodiversity hotspots in the world, the ecosystems are at the stage of attrition: there is a need for an active counterattack to protect the biodiversity in the remaining forest remnants. For environmental rebuilding, different instruments could be used such as corridors, stepping stone forests, *in situ* and *ex situ* conservation, education, information, support, and co-operation with local communities to develop and help connectivity between indigenous habitat sites. (IV)

In Africa, not only in Tanzania, it seems that in the future only a few ecosystems will be able to regulate themselves. Instead they are heavily influenced by human activity, and the people decide the future of biodiversity (Western 2001: 202, 203). It is important that the largest indigenous forest patches are not totally isolated from each other. Dependency on large forest reserves can only have disadvantages, because natural catastrophes (like fire, storm, and diseases) can cause local extinction by destroying entire endemic populations. For example, in 1996 the second largest closed forest in the NPM lost 50% of its vegetation due to fire. At the same time, the largest closed forest lost almost 50% of its vegetation due to fire. It is therefore less risky to have separate areas of indigenous closed forests (e.g. TPFs) than one or two larger isolated forests, especially when the small forests can also be stepping stones between the bigger FRs. In some places the TPFs can be a part of created corridors which connect different ecological areas. The riverine forests are ideal for this purpose (IV).

4.6 The future of the TPFs

Democracy (in the form of elections and participatory planning) seems to be the next system of government in Africa. As far as conservation is concerned, a dialogue between people, the central government and local officials will be essential. There are many advantages in the changing policies. Local peoples' participation in the decision making process will bring along more transparency and control in environmental administration. In Tanzania there are about 10,000 registered villages. All of them have democratically elected village councils and governments which again elect the officials in the village. The new land and forest legislation defines village boundaries. The areas inside the boundaries are governed by the villages. The new legislation gives the local people extensive decision making rights in their lands (III).

It is important that public forestry institutions and their workers are knowledgeable about new developments in biodiversity research and the opportunities and limitations of

biodiversity conservation. It is especially important that they know about the conservation area network of plants, animals, and their habitats in fragmented forests. It is also important that the professional foresters who work in public organisations respect and support the rights of the indigenous societies to continue the traditions which support the conservation targets. It is time to test the capacity of academically educated professionals to adapt, in a limited time, to the challenge of stopping the rapid degradation of the environment. It is a question of the survival of endemic habitats and species.

The villages, in order to implement the laws, clearly still need information and education. Awareness creation can be started by studying the history of the TPFs, their present condition, and discussing their future. For instance in Mkata, young male villagers initiated serious discussion, and even action, about creating a written history of their village traditions (V). The finding that the value of the TPFs for people in different age groups is not significantly different is also interesting (II). This is a promising piece of information when planning the future of the TPFs. Some clan elders are destroying these forests. That kind of elder is coming a double error. Traditionally, they are the guardians of these forests and their ancestors' graves and the clan's secrets and history. Those who cut sacred sites for their material needs have betrayed their task. In various meetings it was understood in general that it is necessary to find a solution for the future of the TPFs. The national government needs to make guidelines and the village councils rules for protecting these forests.

The destruction of the environment and forests can soon reach a stage of no return despite reconstruction programmes if the ecosystem has changed too much (e.g. Myers 2003). This is unfortunately possible e.g. in the case of the NPM where the vegetation can turn towards poor scrub and grassland rather than a forest ecosystem (IV). Historical, cultural, environmental, and scenic values will be lost, animal and plant species will become extinct, and biodiversity will suffer if the previous destruction of the forests continues. This means that the process in Tanzania is not only a Tanzanian problem. It is also time for the people of the NPM to realise that the environment in which they live and which has given a relatively stable and sustainable living is a unique one, and that this uniqueness is in danger of being lost and converted a vegetation type which exists in the surrounding low lands. In the Zigua area and in the Handeni District the sacred forests are small remnants of vegetation from different climatic conditions, and the forests will be lost if they are disturbed. Traditional forests should be recognised as an essential part of conservation strategy.

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