

Report on a visit to Tanzania - 11th March - 8th April 1989

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This report was written following a visit to Tanzania in 1989. It includes comments on a workshop held at Morogoro (Section 2) and field observations made in the Amani region with special reference to *Maesopsis* (Sections 3 & 4). Various suggestions concerning the conservation of the East Usambaras are made in Section 5.

1 Introduction

From the 13th to 17th March 1989 I attended the workshop of The Usambara Integrated Forest Project at Sokoine University of Agriculture, Morogoro, where I gave a paper entitled "Tree species invasions and sustainable forestry in the East Usambaras" jointly with Alan Hamilton. Following the workshop I visited the East Usambaras for 2.5 weeks, to look at the changes which had occurred since my first visit in early 1987, as well as investigating various areas of the Amani region I had yet to discover. Towards the end of my stay it was felt that enough interesting observations had been made to justify a written report. Furthermore being a painter and decorator, and also a part-time self-financed Ph.D. student, I do not have the constraints and vested interests the majority of people interested in the East Usambaras may have. That includes people working for governments, aid agencies, universities, and conservation organisations. What follows are my personal views and reflect some of my philosophical and ethical beliefs which include:

- a. saving natural environments, including tropical rain forests,
 - b. support sustainable development of the third world,
 - c. advance knowledge, including free transfer of information and ideas and
 - d. aim at multi-disciplinary and cooperative ventures,
- Some points which I shall raise in this report, will I hope, be of some use to some of the people interested in the East Usambaras, and perhaps stimulate further discussion.

2 Workshop of the Usambara Integrated Forest Project

Having never participated in a conference before I have nothing to compare the workshop with, but nevertheless the following remarks may be made.

2.1 Meeting

The meeting was well run and attended. Apart from the unavoidable poor command of English and numerous

strong accents, comprehension of what the different speakers were trying to convey was made even harder by the bad acoustics of the room and low voice of most participants. A system of loudspeakers is essential at any future meeting.

The field meeting to the Ngurus was most attractive, but in practice with such a large number of participants and with such a range of ages and physical capacities. It was in fact impractical. We never reached the natural forest, but saw some beautiful scenery and observed a good example of deforestation caused by agricultural encroachment.

Several people I met had reservations about the location of the meeting. They wondered why the workshop was organised in Morogoro and not in Tanga, as a meeting in Tanga would have given people actually working and living in the area a chance to join in. Also, the absence of representatives from Forest Division, IUCN workers, and tea estates meant that the Meeting turned out to be primarily academic.

2.3 Achievements and shortcomings of the meeting

The meeting obviously kept people's interest in the future of the East Usambaras well alive. Even for some people, like myself, it stimulated further thoughts and activities. It has also a good opportunity to get to know people who have been involved in the Usambaras.

However, as a result of the meeting it is clear that despite some improvements there is still a lack of coordination on all horizons including that between scientists, between Tanzanian forest managers and scientists, between field workers and scientists and between aid agencies.

For instance numerous scientists are solely interested in their own particular study without trying to integrate their research protocol with other researches, or collecting and presenting data which may be of use to other disciplines.

Aid agencies do not seem interested in cooperating and in coordinating their respective efforts. Their own national

interests and justifications of their aid effort to their home population seem to come first. Also there seem to be a tendency for them to keep "parts of Tanzanian territory" to themselves.

On the Tanzanian side it seems that there are no clear guidelines as to what particular interests and wishes the Tanzanian government, scientists, and people have. More initiatives should emanate from inside Tanzania, for instance from Forest Division.

Finally, it was difficult to see how this research-orientated workshop related to the April 1988 management-orientated one?

2.4 Resolutions

Few disagreements between the various sides arose after the resolutions were proposed and very rapidly all people present agreed to them without reservations. This was possibly due to the fact that no practical decisions were taken apart from a call for regular meetings of a similar nature. Surely there is a need for urgent action and decision making? The lack of commitment and action observed at the meeting was due mainly to one single important factor. Several interested parties were not directly represented or absent and included: IUCN/EEC, Finnida, Forestry Division, Dept. of Agriculture and tea estates. Also the absence of a leading figure who could be called upon to act as a referee/coordinator/instigator and who would have no connections with donors or receivers.

2.5 Communication

The publication of the proceedings of the workshop will undoubtedly be a major tool in sustaining communication. However, steps should be taken to further improve communications between all the people involved in the Usambaras, thus including aspects on conservation, ecology, systematics, forestry, agroforestry, agriculture and sociology. In order to achieve this, it is suggested that the production of a regular (bi-yearly?) newsletter giving information on who's doing what, publications and reports produced, visits and so on, would help. Somebody based at Lushoto might be the most suitable individual for setting up such a newsletter. Because publications relating to the East Usambaras are often hard to trace or obtain, people should submit copies of all their material to the following organisations:

1. Library of the Oxford Forestry Institute, University of Oxford, South Parks Rd, Oxford OXI 3RB (which also means the insertion of an entry in Forestry Abstracts),
2. Institutions in Tanzania, including Morogoro and Lushoto, In addition steps should be taken to set up a collection of East Usambaras material at the Amani Library. For instance different specialists should produce files of photocopies of particular subjects which could be easily consulted by visitors

3 Visit to the East Usambaras, Amani region

My trips around the Amani region allowed me to make the following observations:

3.1 Kwamkoro Forest Office

The officers' situation has not changed in the past two years. It is as if nobody realizes that their work and commitment are essential to the present and future conservation of the forests of the East Usambaras. They still have virtually no access to available information on the East Usambara forests. Lately some of the Finnish material has been sent to them, but until then the only outside information they had received was advertising catalogues offering mechanized logging machinery with emphasis on computerisation to reduce operating costs! No transport has yet been made available to the officers to monitor the 2200 ha of their Forest Reserve. FINNIDA funding should provide this essential direct support. However, the Forest Officer's house is due for completion soon thanks to IUCN. Despite their isolation and lack of resources the Forest Officers were most helpful in showing me around some of the forests and still show very keen interest in their forests and their conservation,

3.2 Various activities carried out

During excursions to several Forest Reserves, casual collections of fungi encountered on fallen logs was carried out. This small collection should enable us to have a small idea of the taxonomic diversity of the East Usambaras fungus, 1 group of which very little is known at present. Small wood samples of known long-lived forest species were gathered. An estimate of their age will be obtained, as this is an essential piece of information in understanding forest dynamics and predicting yields in forests managed on a long-term sustainable basis.

3.3 General observations

3.3.1 Deforestation

Widespread forest clearance has occurred over the two years since 1987. Large areas have been cleared following land degradation caused by cardamom cultivation leading to soil exhaustion and erosion. A hopeful sign is that IUCN has managed to convince some villages to maintain some of its land under forest cover, giving hope that sole forests will survive in addition to existing Forest Reserves (F.R.).

3.3.2 Boundary planting

Old boundary plantings, demarcating Forest Reserves from public land, seem to be quite thin in some areas and include a lot of *Maesopsis* which should be removed.

New planting has been carried out, but apart from the number of saplings produced, there is no information available on how many metres of boundaries have been planted and how successful establishment has been. But it is clear that there are problems with Eucalyptus survival. The choice of species to be planted is questionable see later.

Encroachment of Forest Reserves by local farmers seems to be a problem and seems to stem from poor boundary planting. Some farmers have, in some areas, planted cardamom inside Forest Reserves. IUCN approach has

been to change the boundary in favour of the farmers, This situation is rather worrying because it is illegal and it sets a precedent for further forest encroachment. This is a new type of forest destruction, although it is slow at present, which could get out of hand in the future. It is ironic that such destruction appears to be supported by IUCN.

3.3.3 Proposed Nature Reserve

It is clear that the safeguarding of the proposed Nature Reserve will only come about with good planning and quick action. Such a suggestion is supported by field observations. On many sides of the Nature Reserve there are no buffer zones with agricultural land and it has been observed that the area is now still being used as a source of wood. On the Western side of the Amani-Sigi Forest Reserve trees up to 40cm in diameter had been cut for house pole production. At the Eastern end of the Kwamkoro Forest Reserve (along the river Ngurue) encroachment of the forest was noticed in the form of cardamom cultivation. Pressure can only get worse in future.

There will also be a need for a clear demarcation between the Nature Reserve and the area set aside for sustainable forestry.

Observations support past suggestions that the natural forest is under threat from *Maesopsis* invasion. For example on a ridge of the Amani-Sigi F.R. *Maesopsis* were observed about every 50 m and in some old gaps up to 6 individuals were recorded. *Maesopsis* is more common on the ridge than on the slopes because of higher disturbance in the past half century.

Agriculture seems to have been practiced inside the Amani-Sigi F.R. up to the very top of the mountain. Several large clearings were observed where no trees regenerate (vegetation mostly consists of *Aframumum*), and where large areas of the surrounding forests are clearly secondary in structure (low canopy height, few large trees, lots of *Dracaena* and no humus layer under canopy).

3.3.4 Logged forests

Some of the Kwamkoro F.R. logged areas and *Maesopsis* plantations were visited. In heavily logged forest, apart from *Maesopsis* and some *Trema*, there is no regeneration taking place, some areas being simply large extents of *Lantana* and climber tangle. In less heavily logged forest, there is plenty of *Maesopsis* but there has also been some regeneration of other tree species. In those areas canopy closure will soon occur, but it is impossible as yet to determine whether primary forest tree species will regenerate.

In *Maesopsis* plantations, nothing has happened and no silvicultural programme to be implemented has been finalised. Experimentation on how to convert them into hardwood forest to be exploited on a sustainable basis should be carried out as soon as possible. My paper, "Tree species invasion and sustainable forestry in the East

Usambaras" (co-authored with A.C. Hamilton and given at the Morogoro workshop) could be a basis to such a programme. In the forest where logging took place in 1986 and where some care was taken at leaving some large trees standing, it appears that fewer *Maesopsis* has become established. There also far less climber-tangle (i.e. *Lantana*), Such weedy vegetation prevents regeneration, suggesting a much faster recovery time of the forest community. Mr E. Assey (Forest Officer at Kwamkoro) reported that *Ocotea* is regenerating both from suckers and seeds.

3.3.5 Conversion of *Maesopsis* plantations

Following the paper given at the Morogoro workshop and discussions with the Kwamkoro Forest Officers, it was agreed that some experimental work should be put forward and submitted to Forest Division for approval. The aim is to find a management technique which is environmentally sound, and which keeps casts of harvesting and post-harvesting to a minimum. It is intended to, in conjunction with the Forest Officers, produce proposals on this matter in the near future. If and whenever the go ahead for the logging and conversion of the *Maesopsis* plantation comes about, we will then have the necessary information to successfully implement a plan on a large scale.

To implement our proposed silvicultural method for logged forest and converted *Maesopsis* plantations, the canopy gap size will have to be kept to a minimum. For very large trees, it might be necessary to cut some of the larger branches or even the whole crown before felling the tree.

3.3.6 Regeneration of *Cephalosphaera*

It has been observed that when mother trees are left in sufficient number, there is adequate regeneration of *Cephalosphaera* in not too heavily logged *Maesopsis* plantations and in forests where the understorey has been cleared for cardamon cultivation.

In old *Maesopsis* plantations (those planted in the 1960s) young *Cephalosphaera* were observed under *Maesopsis* canopy and mature specimens were recorded nearby. It is believed that no *Cephalosphaera* underplanting was carried out. It was noted that young *Cephalosphaera* became established in humus-poor soil, such as under *Maesopsis*, and even on mineral soil of old logging tracks. It is not known how far the seeds are dispersed, and therefore how many mature female trees must be left to have extensive regeneration. However squirrels seem to be active dispersers of *Cephalosphaera*, they carry the large seeds in their mouths and only eat its outer layer, which may cause no loss of viability. Regeneration of other hardwood species was generally not noticeable with the exception of *Tabaernamontana*. In case the usual pattern of deforestation typical of the East Usambaras (sequence of cardamom, pitsawing, bananas, all trees killed, and annual crops, i.e. cassava) could be halted after the end of the cardamom productive cycle there should be little problem in getting *Cephalosphaera* to regenerate.

3.3.7 Pitsawing

The ban on pitsawing in some forest Reserves, particularly in the southern part of the East Usambaras, appears to be properly enforced. It has been noticed that when the ban was declared parts of the logs were left behind and have yet to be sawn and removed. However it appears that in other parts of the range, on public land for instance, pitsawing is out of control as existing legislation is not enforced. Forest Officers are clearly aware of the situation, some even have vested interest in the business and this seems to be also the case of some of their superiors. Loggers have also been cutting trees on tea estate land which is presently a hot issue as several tea estates have pending court cases against them.

4 IUCN/EEC

Only a few general and some specific comments will be made here.

It is impressive to see the changes which have occurred since 1987 when nothing was being done to preserve the environment and manage resources on a sustainable basis. Now there is hope that some long-term solutions and management strategies will be achieved. The future of both peoples lives and forest survival depends on it, but clearly the intended 3 year duration of the project is too short to make the system self-perpetuating and an extension (without a break in activity) is essential.

Despite its evident success the project is beset with problems and numerous deficiencies.

1. Its economics are appalling, with money running out all the time, meaning that energy is put into asking for it instead of working in the field. Also some workers actually run the project on their own money when the funds run out. This seems to be a typical IUCN venture as far as funding is concerned, where administrators don't seem to care too much about the well-being of their field-workers, including their efficiency and moral.

2. The IUCN/EEC project has yet to tackle the chief cause of deforestation, i.e. cardamom cultivation, the major source of cash for a large proportion of the local population. A solution to this important problem has to be found as soon as possible, either in the form of sustainable cardamom cultivation or alternative crops of similar economic value must be found and promoted.

3. As mentioned earlier, the proposed forest Nature Reserve has very poor buffering, even some encroachment and logging. IUCN should put more emphasis on the agricultural area near the proposed Nature Reserve, as the pressure on the forest will increase with decreasing soil fertility, increasing soil erosion, increasing population pressure, and chronic shortage of fuelwood and building poles on public land. As mentioned earlier cardamom cultivation and tree cutting are already observed. Boundaries also contain a fair proportion of *Maesopsis* which is invading the forest and is a threat to rare species, *Maesopsis* should be removed or at least should be

coppiced before it starts producing seeds.

4. It seems that IUCN has a rather cavalier attitude towards exotic species, particularly their invading potential and that is quite clear as far as tree species are concerned. Worldwide it is well known that species invasions have become one of the major threats, not only to natural habitats but also to man-made ones. Often, introduced species have produced short-term financial advantages, but turn out to be catastrophes in the long-term. It has been observed that little has been done to curb the *Maesopsis* invasion, and that several IUCN staff at Amani seem to be in favour of keeping it, when other species could be economically more valuable and not have environmentally deleterious impacts on the ecosystem. It was noted that boundary planting is proceeding with species such as *Cedrela*, which are already invading the forest. Also there are talks about widespread introduction of species with high reproductive potential for agroforestry purposes. Lessons from the past in the East Usambaras and worldwide have so far been taken very lightly. Surely IUCN, whose major concern is to protect the environment and favour present and future resources, should be aiming at eradicating invaders wherever possible, or at least controlling them. Instead it seems to favour the spread of invading species and also introduce new ones!

5 The future

Hereafter I shall put forward a few suggestions but I wish to stress that they are only complementary to plans made for the East Usambaras by Forest Division, IUCN, Silvestria and Finmap with funding from FINNIDA and NORAD. The following points I feel need particular emphasis and complementary suggestions.

1. Need for further cooperation. There is clearly a lack of cooperation between IUCN, Forest Division and the Dept of Agriculture as well as other Aid organisations. Lots of promises are made, but in reality little is being achieved. For instance there has been very little Finnish involvement in the East Usambaras in terms of financial aid or projects since the management plan was completed. It is not entirely clear why it is the case, since FINNIDA have declared themselves willing to support the implementation of the plan. The IUCN Nairobi office appears ambivalent about the plan and the full-scale involvement of FINNIDA, yet anybody interested in forest conservation should welcome such a change in attitude. A Forest Division project to carry out the full management plan, complementing the continuing IUCN project, could attract funding from FINNIDA.

2. Buffer zone. The need to set up buffer zones between the proposed Nature Reserve and agricultural land will include the matter of compensatory payments to farmers and is a critical issue. Such compensation can only be feasible with an input of foreign money. Around Forest Reserves and particularly the Nature Reserve special attention should be paid to the local population's wood

supply both in terms of fuel and building poles as to relieve pressure on the forests.

3. Development of tourism. Tourism in the Amani region has good potential, and could have positive effects on both biological conservation and the local economy. This is the case because the region has several kinds of resources within a small area with great attractiveness and ease of use. They are:

Botanic Garden. Linked with its rehabilitation emphasis on fruit trees could be a place including fruit tasting for tourists. Epiphytic orchids and other local flowering plants could also be attractive. A collection of native trees and shrubs should be made.

Saintpaulia. Being a very popular house plant, this would draw a large number of visitors. However several conditions must be fulfilled. The various species of *Saintpaulia* must be preserved, both in the wild and in the Botanic Garden. Using natural rocks a collection of the different species should be set up within the Botanic Garden. To protect the various species in their natural habitats, the few areas where *Saintpaulia* occurs should be located, the involvement of Forest Officers is to be considered. Further steps should be taken to protect and possibly maintain the sites (for instance the site in the *Maesopsis* plantation at Kwamkoro could easily be wiped out). There is need for further information on the ecology of the different species.

Nature Reserve. Some virgin forest safaris could be set up. These are currently being advertised in the USA for

Central America and are bound to become more popular. The fact that the Amani-Sigi and Kwamkoro area contain the tallest African tropical trees makes the place most attractive. The designation of the Nature Reserve as a Biosphere Reserve under the UNESCO Man and Biosphere programme would further highlight its importance.

Frogs. A well-known diversity with easy access.

Library. This is an important resource because Amani is a perfect spot for reading and is an essential back up for people interested in natural history. To be attractive the library needs to have relevant books, and files dealing with the various aspects of interest (i.e. *Saintpaulia*, flowering plants, birds, history, etc ...), and such files should contain photocopies (bound) unless originals are available.

Other aspects of tourism don't have to be expanded upon as they are pretty well known. These include good climate, scenery, easy access to the sea and also some interesting historical value. These aspects will need little further development.

Perhaps even more potential lies with the educational tourism for undergraduates (usually from the USA), who pay to come as a group and study the forests, conduct small research projects, etc. This is a growing field and Amani, with the development of a good research station, has a fair potential for it.

Article's history

Minor editorial corrections made in 2000s.