NYAMPHANDE NRM AREA MIOMBO INVENTORY AND MAPS

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CLUSA NATURAL RESOURCE MGMT PROGRAMME - PFAP
Eastern Province, Zambia 1999-2003:

MIOMBO MAPPING AND INVENTORY

1. BACKGROUND: ACTIVITIES SINCE 2000

AGRIC ACTIVITIES

Cooperative League of USA's Natural Resource Management Programme (CLUSA-NRM) worked with Eastern Province farmers starting in 1999. The first areas of intervention were Mambwe, Chipata, and Katete Districts. In 2000 the project moved into Petauke District. Activities of CLUSA-NRM in Eastern involved:

- Organization of farmers into a trading co-operative for groundnut, sunflower, and paprika growing

- Extension services for conservation farming and business skills including literacy

- Using agricultural skills as a lead-in to improved **production, sustainability**, and **marketing** of honey, planks, and non-timber forest products
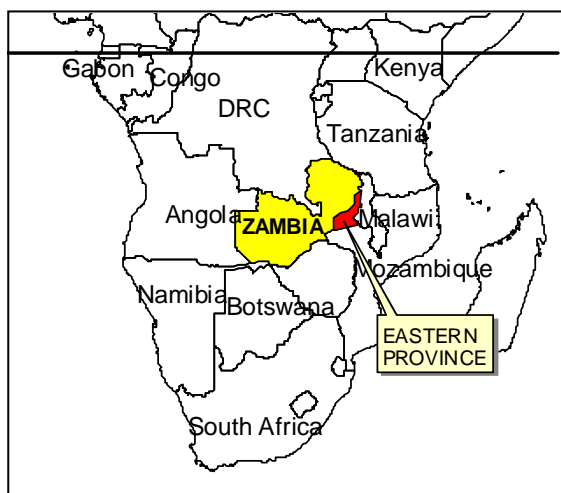
AREAS WHERE CLUSA-NRM WORKED IN EASTERN PROVINCE, ZAMBIA

Adult literacy centers
Agric depot sites
Warehouse site
★ Group facilitator / ATC
Forest mgmt site
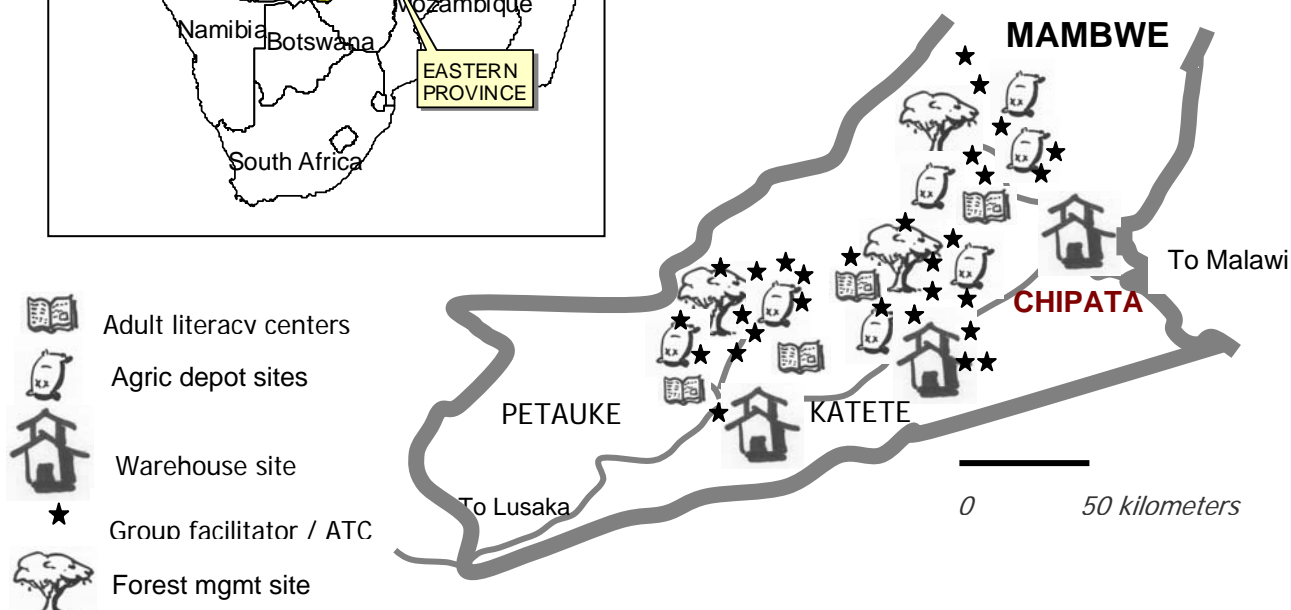
Farming Activity at CLUSA-NRM sites

A lead contact farmer transfers conservation farming techniques to others in his group. Conservation farming is rows of easily-weeded and methodically-rotated crops, potholed in advance if appropriate.

CLUSA-NRM passed conservation farming messages during its whole project life.

FORESTRY ISSUES and ACTIVITIES in NYAMPHANDE (PETAUKE) AREA

Forest Management: Addressing the waste of valuable timber trees

An issue highlighted during scoping in 2000 was the widespread waste of valuable hardwood timber branches and trees as fields were cleared and burned for agriculture. This waste affects the number of years that any remaining high-value trees (totals of which are estimated in this report) will last for sawyers to supplement farm income with cash for school and health needs. CLUSA-NRM forestry component decided to take the timber waste issue on as a central sensitisation theme, and it is a central policy featured in the 10-year Management Plan that was signed between Chief Nyamphande and Forestry Department/Eastern Province in 2004.

In 2002, CLUSA-NRM sponsored training for sawyers on better tool-sharpening, straighter sawing, use of appropriate tools, and recuperation of wood from down and abandoned trees, logs, and cants.

CLUSA-formed groups took annual censuses of these resources so they could negotiate a reduced-price timber license in the Nyamphande area. This was put into practice over two seasons. CLUSA-NRM's Producer-Owned Trading Cooperative, composed of farmers selling products through their own marketing body, bought over 400 planks, stored them in Chipata, and sold them over the year.

WASTED DOMESTIC HARDWOOD:

Poor work quality and not following regulations lead to low prices, low profits to producers

WASTED, EXPORTABLE HARDWOOD:

15 PLANKS LOST

= ZK 75,000 lost profit for producers

= $US 700 lost profit for exporters

MORE PITSAWYER TRAINING AND ORGANIZATION WILL IMPROVE PROFITS TO PETAUKE WORKERS AND TO FORESTRY DEPARTMENT

The sawing, plank producing, and cant collection programme came to an end before the USAID funded portion of the project did in 2004. The POTC did not have sufficient resources or personnel to continue their share of the timber programme. However, Forestry Department and the sawyers have gained some skills in the process, and the programme could be taken up in earnest again with little additional organization and funding.

More training is needed for the relatively new sawyer groups formed, and locally-based monitors of work quality would benefit any future programme immensely.

Besides timber that has been wasted, there are relatively few exploitable stems of the most easily-marketed *Pterocarpus, Pericopsis, and Afzelia.* Information from the inventory on sawtimber trees is in the SAWTIMBER section.

Forest Regeneration: Nursery establishment to increase stocking of high-value species

The inventory results show that there are few highest-value species (*Pterocarpus, Pericopsis*) regenerating throughout the NCNRMA. There are many more lesser-known timber species, especially *Terminalia serice*a and *Brachystegia spiciformis*, mixed with non-sawtimber species in the regeneration counted.

From 2002 to 2004, nurseries were established in schools and at the Chief's palace in Nyamphande. The programme started out with a well-designed sensitization topic list to be discussed each month at the nursery sites. School children and teachers got conservation messages to bring home with their hands-on experience, and each nursery grew two thousand trees for planting around community forests and in plantations.

Interest in the programme waned as students were too frequently uncompensated or unavailable; and the message that valuable forest trees were disappearing at an unsustainable rate was gradually lost. By the third season, most trees produced were fruit trees, while they should have included more hardwoods and utility wood. In the end, it was agreed that it is difficult to sensitise communities on "a disappearing resource" when living near large tracts of treed land -- even though the species composition is favoring smaller and less valuable trees.
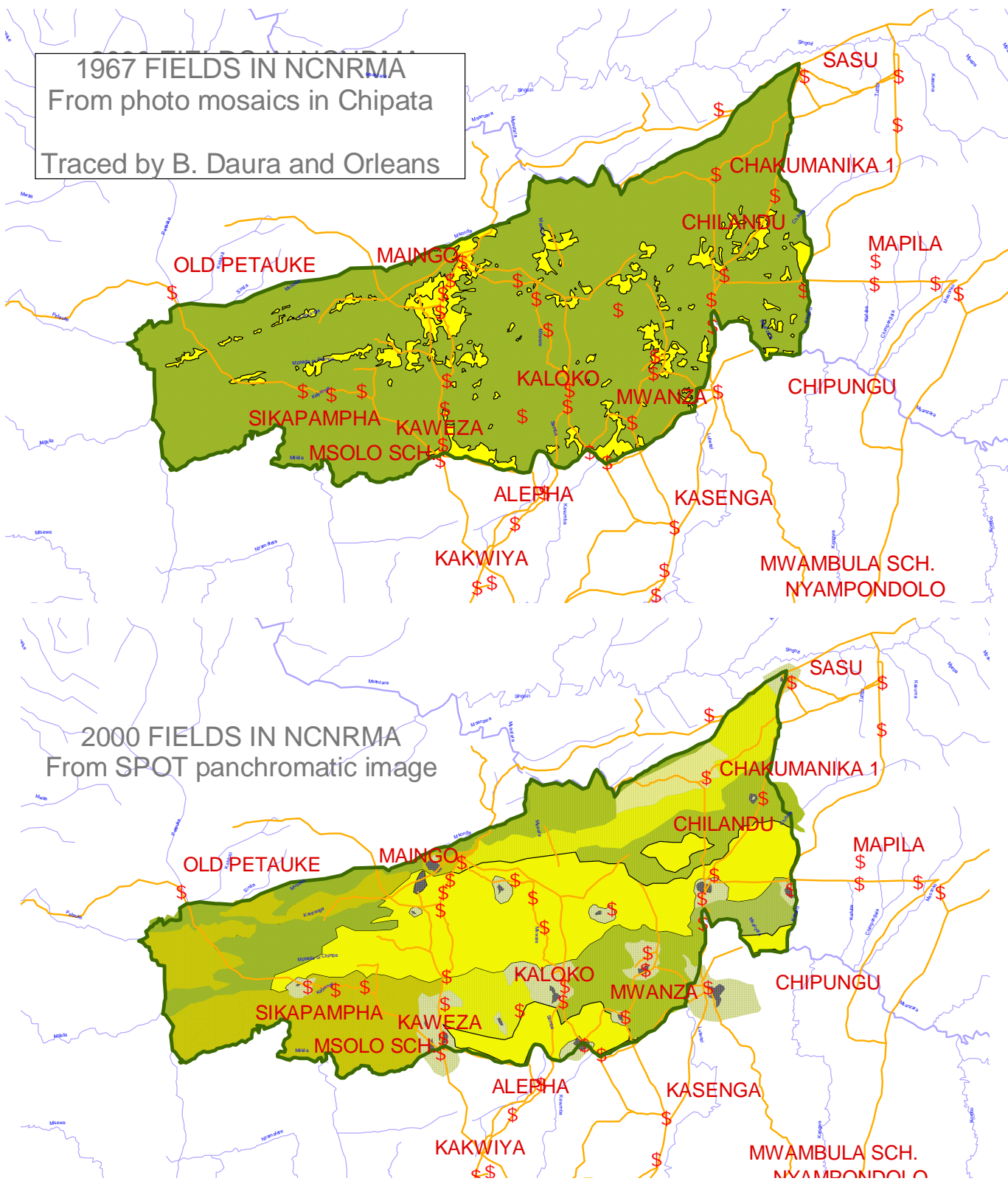
Land use: how many hectares are left for forestry purposes?

Forests produce benefits that can be taken for granted when it seems like the tree supply is endless: clean water and air, wildlife, fertile soil, fruit, energy, construction materials, and medicine that would otherwise be unaffordable. As long as some forested hectares remain uncleared, these benefits will remain available to some degree.

However, Chief and headmen, when asked how many hectares or limas of uncleared forest remain to allocate to subjects or retirees in their areas, are unable to answer. When a chief's forest land is used up, we see emigration on a large scale such as around Chipata and Katete. This scenario depends on the graciousness of the receiving chief to accept immigrants on his own limited territory, the number of uncleared hectares available to allocate to newcomers, and the population growth rate of standing residents.

One of the benefits of the mapping subcomponent of the inventory is that a map of currently-forested land was drawn from a satellite image stratification. This gives an approximate forest land area that chief and headman can use to plan allocation for the future. The following figure shows a 1967 version of fields in NCNRMA, traced by FD's B. Daura in Eastern Province, combined with a year 2000 version of agriculture and fallow area traced from the satellite image.

You can easily see the increase in the extent of the agriculture/fallow area over 33 years.

1967 FIELDS IN NCNRMA
From photo mosaics in Chipata

Traced by B. Daura and Orleans

2000 FIELDS IN NCNRMA
From SPOT panchromatic image

The top map is from 1967 photomosaic of the area. The bottom map is from the year 2000 SPOT image.

Land use: Establishment of Permanent Community Forests

A NCNRMA management plan solution to unplanned land clearing was to provide for communities to set up Permanent Community Forests (PCFs) that will remain uncultivated and unallocated for fields. The inventory/mapping crew went in the field with village headmen and walked around PCFs with GPS units for downloading and mapping in the office. The resulting map is shown.

NYAMPHANDE NATURAL RESOURCES MANAGEMENT AREA
Petauke, Eastern Province
PERMANENT COMMUNITY FORESTS

Status	Count	Hectares
as of 2004	12	809.8
potential	6	3523.9
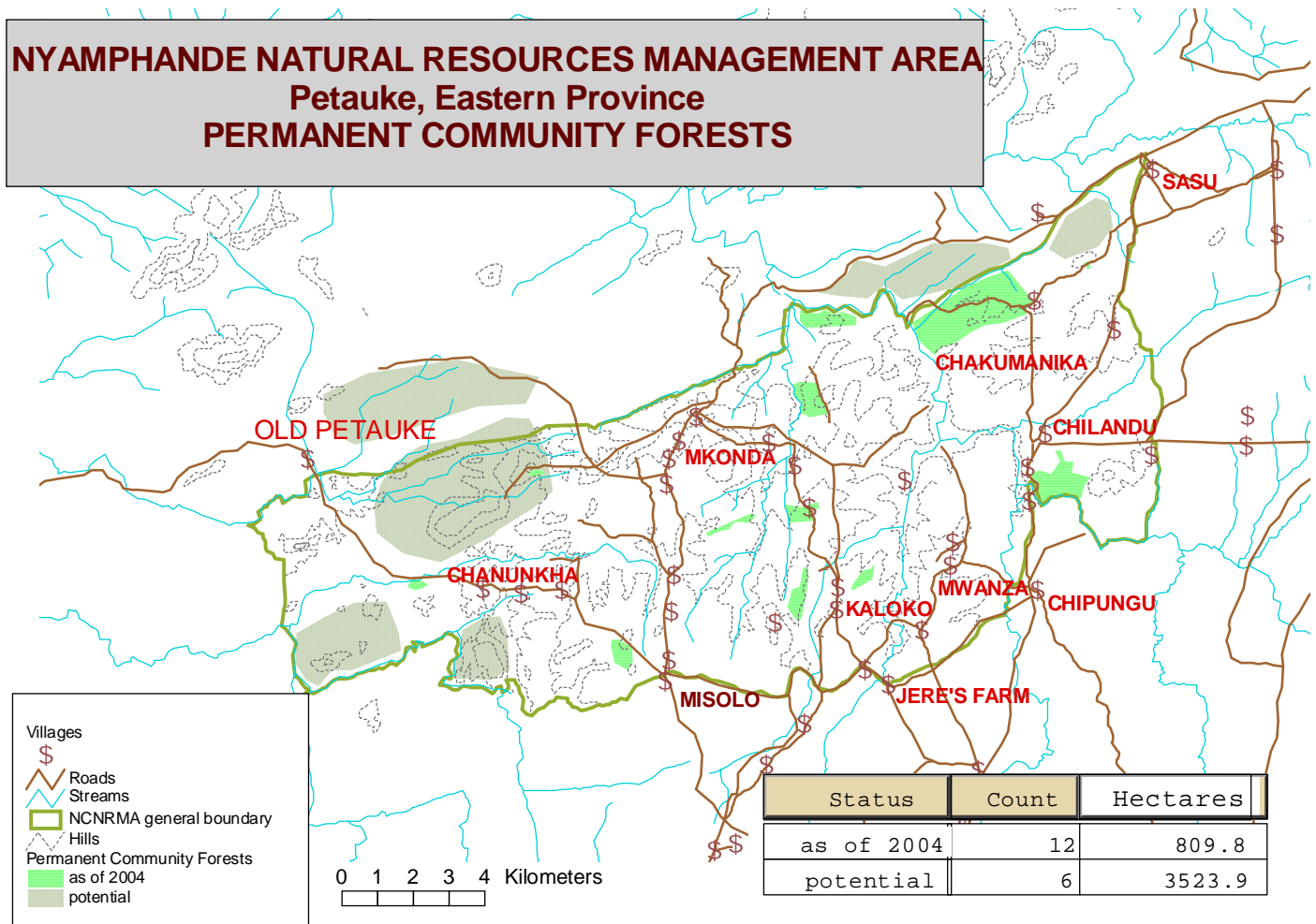
The PCF programme had mixed success: some village headmen understood the purpose of the exercise better than others. The main shortfalls were:

(1) Chief or Headman deciding to allow people to cultivate inside already-established PCFs (whether by choice or by accident).

(2) Communities setting aside tiny forests that could not possibly serve functions like water-filtering or wildlife regeneration or pole supply because of their size.

(3) Conflicts between villages on where one village ends and another begins.

It would be helpful to review current PCF locations: tiny ones should be made bigger, and boundaries under conflict with neighbors should be avoided.

Forest Products: Improved honey collection and marketing system

The POTC of CLUSA-NRM initiated a village-based training programme on beehive construction and efficiency, comb collection, and honey processing. Forest management is tied into honey production in at least two ways: (1) Barkhives cut from live trees frequently leave perfectly-good charcoal wood to waste as the ringbarked tree dries and eventually falls. (2) Some other uses of barkhive-producing trees (especially Brachystegia and Julbernardia) do conflict with the use of these trees in the honey business; therefore it would be ideal to establish a dialogue between beekeepers and the other users (charcoal producers, herbalists).

The CLUSA-NRM input ended at end 2004, but farmers, forest producers, and women's groups are still interested in continuing this work. Commercial honey is marketed through the FD in Petauke for the moment.

Information on barkhives recorded in the inventory is in the section on NON-TIMBER FOREST PRODUCTS. More work could be done to attempt predicting annual potential honey yields.

Forest Products: Improved broom manufacture and marketing system

With the help of a Peace Corps Volunteer in Kaloko (Garret Olsen), two women's groups started a broom-weaving supply chain with an outlet at Forestry Department in Petauke. The group needs more organizational skills and would provide a good target group for future project work.

Information on brooms recorded in the inventory is in the section on NON-TIMBER FOREST PRODUCTS.

Inventory as a basis for planning harvest long-term

The rate at which valuable trees are being harvested or burned up during field clearing is not documented, but it is clear that chainsaws working the area are speeding up the rate. As a consequence, chainsaws were temporarily banned with the agreement of user groups and the chief as long as the inventory was being completed. In this way the trees available to the user groups could be more accurately counted and numbers would be more reliable at least for the three years of the ban.

The present report is the result of two seasons of plotwork carried out by a small crew of two CLUSA-NRM staff with two local FD personnel (a field extension agent and the District Forestry Officer) and two village forest resource informants. Nontimber and timber products available from counted trees on sample plots were recorded on field sheets presented in the Inventory Tools chapter, using input from all team members.

This report presents the averages per hectare and the total resources calculated from the 113 sample plots. The function of the data is **to inform user groups and Forestry Department of how much is out there today, and -- using data about smaller size classes and regeneration — how much may be expected to be out there tomorrow.**

Market data on the worth of individual types of products in the area were gathered anecdotally to assess an approximate kwacha worth of forest land in the Nyamphande Natural Resources Area.