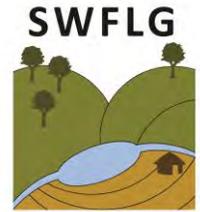


## **Challenges and Opportunities for Sustainable Forest Management in South-West Ethiopia**

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### **Summary**

This briefing note is the first in a new series introducing issues relating to forest and land use management in the South-West Highlands of Ethiopia, a unique area in Ethiopia with national, regional and global significance. These briefs are produced under the auspices of the South-West Forest and Landscape Grouping (SWFLG) and in this case specifically by the “Non-Timber Forest Products – Participatory Forest Management (NTFP-PFM) Research and Development Project”. This has been operating in the south-west since July 2003.

The Afro-montane forests of the South-West Highlands are a scarce resource for Ethiopia. They are one of the two remaining blocks of high forest in Ethiopia and this area is the origin of wild *Coffea arabica*. The forests provide climatic stabilization and hydrological moderation, both of which have implications for development, poverty reduction and climate change management. The forests have regional importance through their effects on the flow of the Baro Akobo river system which contributes to the Nile River, while the forests are globally important for carbon fixing and their genetic resource conservation.

These forests are under increasing pressure, primarily as a result of the clearance of land for smallholder agriculture due to population growth and in-migration, but there are also important losses of forest to estates developed by the state or investors. In addressing this challenge, the NTFP-PFM project seeks to support the development of a community-based approach to forest management, especially through PFM linked to enhanced production and trade in NTFPs, such as coffee, honey and spices, as well as other forest products. These developments require capacity building in government agencies and amongst communities, as well as institutional development with new forms of CBOs for PFM and trade. This must be a multi-stakeholder approach taking a landscape approach to resource management planning, as well as involving close cooperation with the government to ensure a suitable policy environment. This series of Briefing Notes seek to inform such debates.

### **Characteristics of the south-west forests**

The forests of the South-West Highlands of Ethiopia are predominantly of the broad-leaved, evergreen type. In the higher areas, above 2,400m amsl, bamboo (*Arundinaria alpina*) is found, while in the lower altitudes below 1200masl the high forest grades into lowland forest and then woodland savannas.

Much of the highland forest is secondary in nature having been cleared in previous centuries when the population in this area was much greater. The present forest has also been altered more recently by communities who selectively collect various products from the forest, enhance stands of some species for harvesting, and also clear small patches for cultivation.



**Typical high forest in the South-West Highlands**

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The most important forest, in economic terms, is the high forest between 900masl and 1800masl within which *Coffea arabica* is found intermittently as an indigenous understory bush. While coffee grows wild in this forest, many of the natural stands have been enhanced through the re-planting of natural seedlings, the clearance of competing shrubs and the thinning of the canopy. In extensive areas a modified “coffee forest” is found with only selected species retained - coffee as the shrub layer and a few trees for shade.

Other economically important plants in the forests are spices, such as the Ethiopian Cardamom (*Aframomum corrorima*) and Long Pepper (*Piper capense*). In addition, the flowers of many trees and shrubs provide nectar / forage for the bee colonies whose honey is of great importance, especially in the high altitude areas. Beehives are traditionally made from logs taken from selected trees, but also from bamboo (as seen below).



Beehive made from bamboo and ferns

## Importance of the forests

### a) Local importance

The forests play a central role in the lives of the forest and forest-fringe communities. They provide building materials and firewood which are essential elements of shelter, especially because of the rainfall and the cold in the higher areas. They are also the source of new farm land both for coping with natural population increase and for maintaining crop yields as old fields become less fertile.

There are also over 300 non-timber forest products (NTFPs) which communities in the area use (Tadesse Woldemarian et al, 2004). Many of these are only used domestically – such as medicinal plants, but some, such as climbers have a local market, while coffee, spices and honey have national and international markets. These NTFPs contribute, in varying ways, to the livelihoods of different ethnic and socio-economic groups, with the better-off households more involved in these for wealth accumulation and the poor using them as part of their survival strategies.

### b) National importance

The forests in the South-West Highlands are of national importance for a variety of economic and ecological reasons, but primarily because of their coffee production. This is estimated to be at least 60% of the country's production. In addition, much of the country's output of Ethiopian Cardamom and Long Pepper comes from these forests. Honey production from the area suffers from high moisture content, but when this is reduced the honey and wax are of a high quality, being free of any pollutants, and the wax especially fetches a high price when exported.

The forests have been a major source of timber in the past but this has declined in importance in recent years. A few saw mills still exist, and local pit sawing takes places, but the extent of timber extraction has been greatly reduced compared to the 1980s.

Apart from the economic benefits, there are a number of important environmental services which the forests provide. The most important of these is the moderation of stream flow in the Baro-Akobo system, with reduced peak flows and enhanced low flows. This reduces the flood damage caused by the rivers and ensures dry season flows. Another impact of the forests, and the wetlands within them, is to reduce the sediment load in this river system and ensure high water quality. These hydrological characteristics are important for livelihood and development purposes, especially for hydro power development in the area and for irrigation farming in the Gambella lowlands (NBI, 2006).



Baro River near Masha

Climatic stabilisation is another benefit from these forests which is difficult to quantify. In particular the forests help to moderate temperatures locally, and through the process of evapo-transpiration, which raises the humidity of the air masses passing over the forests, may increase rainfall, both locally and more widely in the downwind areas - which are mostly the Northern Highlands. Hence, without these forests the north of Ethiopia would probably be drier and more prone to droughts.

Recent analysis of the annual economic and environmental costs of deforestation in the Baro-Akobo basin has suggested that the value of income and benefits lost is over US\$40m per annum, even with the value of increased agricultural production offset against this (NBI, 2006; Sutcliffe, 2009).

### c) International importance

The forests of the South-West Highlands have an importance beyond the borders of Ethiopia. They are the key controlling influence on the flows of the Baro-Akobo River system which is the second most important tributary of the Nile from Ethiopia. Indeed the Baro-Akobo accounts for 42% of the water in the White Nile just downstream of Malakal in the Sudan. The forests help moderate this input into the Nile and so stabilize its flow. They also ensure that the sediment load entering the Nile at this stage is low and this reduces costs for dam operation and hydro power generation and irrigation projects.

Globally the importance of the South-West Highlands is primarily in terms of its genetic resources, especially coffee, this being the area where coffee originated, still grows wild, and where it was first domesticated. The area is also important for the carbon sequestration in these forests and the consequent role of the forests in limiting climate change. Hence these forests are important for the REDD+ programme in Ethiopia.

### Challenges and threats to the forests

While it is thought that the forests of the South-West Highlands were expanding at the end of the 19<sup>th</sup> century, during the 20<sup>th</sup> century there has been a progressive and for many years accelerating reduction in their size. Figures are not accurate or precise, but one study suggests that over 27% of the forest was lost during the period 1971 to 1997. (Reusing, 1998). During the same period 60% of the high forest showed some signs (as seen through and remote sensing) of negative human impacts. A more recent study has suggested that in Southern Nation, Nationalities and People's Regional State over 50% of the high forest present in 1990 is expected to have been destroyed by 2020.

The main driving force behind this forest loss is population growth, both due to natural increased and through in-migration. This has led to an increased demand for farm land – a need which is usually met through forest clearance. Also of note in this process is the way the present forest fringe farming systems require the clearance of forest land in response to declining yields on existing fields.

This clearance of forest land has been accelerated in recent decades by improved communications and communities to maintain the forest in the long term.

in-migration, and in the last few years by the Land Registration process which has led farmers to claim forest land as their own through preliminary clearance.



Forest-agriculture frontier near Masha

There has also been the loss of specific blocks of forest for agricultural development initiatives, either state farms – as under the previous government, or local and international investors as at present. This has often been undertaken without appropriate EIA (environmental impact assessment) procedures (despite the legislation), and without consultation with the local communities who hold specific use rights to these areas and for whom the forest provides many vital resources.

### Opportunities and ways ahead

Despite these challenges, positive scenarios are appearing for the forests of the south-west highlands. In the first place the Federal and Regional government are committed to the application of participatory forest management (PFM) as the way to maintain the forest resources of the country. PFM, which was introduced through projects such as the NTFP-PFM one, is being scaled up and addition EU support is being provided in several regions, including SNNPRS.

The NTFP-PFM project which originally started in 7 gots is now covering more than 100 gots and is bringing more than 100,000 ha of forest, the core of the south-west highlands forest, under community management. The legal basis for this is being developed in a participatory manner with project support and a new regional forest proclamation has been approved. This, and the associated regulations, will provide clear and secure rights to the local communities over the forests and enhance the uses they can make of it. These benefits from the forest will balance the responsibilities of ensuring sustainable forest management which the communities now have.

In particular this project is supporting the development of a variety of forest-based enterprises which will add value to the forest and so make it attractive for

REDD+ supported carbon payment may be one way in which the portfolio of benefits can be expanded. Multi-kebele cooperatives have been established to create viable organizations for the marketing of forest products. On the other hand the responsibilities for management are being organized through Wereda Forest Management Associations, which has branches at the got level, making the smallest communities responsible for managing the forests they know well and traditionally use.

Active forest management, which adds value to the forest and generates increased income for benefit sharing provides the way in which the forests of the south-west will be maintained. The benefits of this will not just be for the local communities and the local government, but also for the region, the country and beyond for the Nile Basin and for the global environment.

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## Briefing Notes (produced or in preparation)

2. Collective Forest Land Certification: a milestone for tenure security and sustainable PFM in Ethiopia
3. PFM Institutional Development: experiences from the NTFP-PFM Project
4. Bamboo Forest Restoration through PFM: experiences from Masha
5. Economic Assessment of the Costs of Deforestation in South-West Ethiopia
6. Forest Policy Development : engaging PFM with the policy process in SNNPRS
7. Evolving Interpretation of Participatory Forest Management in South-West Ethiopia
8. Forest-Based Enterprise Development: comparative experience of cooperatives and PLCs
9. Land use change in the highlands of south-west Ethiopia, 1973-2012
10. The *Korerima* Value Chain: enhancing the value of forest products
11. Competitive and Sustainable Forests: making forests pay their way in south-west Ethiopia

## South-West Forests and Landscapes Grouping

This grouping brings together three partners who have been working in this part of Ethiopia for more than 12 years: University of Huddersfield, Ethio-Wetlands and Natural Resources Association and Sustainable Livelihood Action. They have recognised the need for serious attention to be given to the forests and forested landscapes of the south-west highlands of Ethiopia. At present the grouping has two other projects in this area besides the NTFP-PFM Project.

## NTFP-PFM Project Summary

The "Non-Timber Forest Products – Participatory Forest Management (NTFP-PFM) Research and Development Project in South-west Ethiopia" started in July 2003. Its first phase ran to July 2007 and the second phase runs until mid 2013. The project has a "research and development" orientation, in which it combines an integrated technical approach to the sustainable use and management of forest resources with a participatory and gender sensitive strategy for improved rural livelihoods.

The project tries to explore and disseminate successful ways of applying Participatory Forest Management in Ethiopia so that forests can pay their way and become viable and competitive land uses which are sustainably managed by rural communities. This involves policy support, PFM institutional development, forest enterprise development and the economically viable marketing of forest products

## Project Funding Agencies



**European Union, Environment Budget**



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**Royal Netherlands Embassy, Ethiopia**



ROYAL NORWEGIAN EMBASSY

**Royal Norwegian Embassy, Ethiopia**

## Project Partners



University of HUDDERSFIELD

**The University of Huddersfield:** With 18 years experience of field research, project management and consultancy / advisory work on natural resources in Ethiopia.



**Ethio-Wetlands and Natural Resources Association:**

The first Ethiopian NGO to focus on forest and wetland issues. It has worked with most of the donors in the country and has run projects in three of the country's eight rural regions.



**Sustainable Livelihood Action:** A European Economic Interest Grouping which focuses on capacity building to support local NGOs and organisations in developing countries. Its staff have over 25 years of experience in Africa, Asia and Latin America.



**Southern Nations, Nationalities & Peoples Regional State**

For further details see: [www.hud.ac.uk/wetlandsandforest/](http://www.hud.ac.uk/wetlandsandforest/)