



South West Forest and Landscape Grouping (SWFLG)

Participatory Forest Management (PFM), impact, lessons and complexity in the coffee forests of South West Ethiopia

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SWFLG is an informal grouping of organisations which are interested in the development of an ecologically sound and socio-economically sensitive approach to the management of the southwest landscapes of Ethiopia. The members of the grouping to date are: University of Huddersfield (UK), Ethio-Wetlands & Natural Resources Association, and Sustainable Livelihood Action/Wetland Action EEIG (the Netherlands). They have been partners in projects funded by the EU and several other international donors since 1996 and have built up specific expertise in the areas outlined above.

Other organisations are encouraged to join the Grouping.

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Executive Summary

The Wild Coffee Conservation through Participatory Forest Management (WCC-PFM) project supported PFM in 4 districts in Sheka and Bench Maji Zones, within the Southern Nations, Nationalities and Peoples' Regional State (SNNPRS) in South West Ethiopia, between 2010 and 2016. Here the moist evergreen afromontane forests of Kontir-Berhan and Amora Gedel are considered as part of the birthplace and a key remaining refuge of wild strains of *Coffea arabica*. These forests contain unique genetic coffee diversity within its natural ecosystem, a globally important genetic bank of one of the world's most valuable commodities.

The forest areas are home to a diverse ethnic mix made up of the long-term inhabitants and migrants from other parts of Ethiopia. Communities in the area derive up to 50% of their livelihood needs from the forests. Perverse incentives in the governance environment, notably those leading to forest tenure insecurity mixed with the criminalisation of forest use have contributed significantly to cause destructive behaviour towards the forests with high rates of deforestation and degradation. Unpopular preservationist conservation approaches and policies in the past have tried and failed to force changes in local behaviour. PFM was designed to change the incentives within

the governance environment, notably providing more secure tenure and legal forest use rights to incentivise long term forest maintenance and management.

The application of PFM in this complex governance, socio-economic, cultural and ecological context (made up of degraded forest with individuals managing intensively cultivated 'coffee forest' and natural forest with in-situ 'wild' stands of coffee) has generated numerous lessons. These not only prove the efficacy of PFM as an incredibly effective and socially acceptable 'use it or lose it' forest maintenance and management strategy but also challenge conventional biodiversity conservation wisdom as well underline the complexity of the livelihood and equity impacts of PFM. The table below distils the key lessons from this paper.

Key aspects: Devolved control and management, (the foundation of PFM), is necessary to end “open access” and incentivise forest management and maintenance.

| WCC – PFM Project Results | Challenges and analysis | Recommendations |
|---|--|---|
| <ul style="list-style-type: none"> Anchored in a Federal and Regional Forest Proclamation (2007 and 2012 respectively) devolution of forest management was operationalized through Participatory Forest Management Agreements (PFMAs) over 76,000 ha of forests devolving control and management of the forest to community organisations representing around 30,000 people. According to community members, in participatory exercises conducted in all of the project districts, feelings of ownership over the forest have increased from 1.86 to 8.14 on a scale of 1-10 before PFM and motivation to manage the forests grew from 1.14 to 8.86 on a scale of 1-10. | <ul style="list-style-type: none"> There have been several incidents of communities not getting timely and full support for their new found rights from government authorities when they reported illegal activities and cases of government officials wanting to allocate PFM forest land to investors. The project has stepped in to assist the communities in getting these issues responded to by government authorities. This external help will not be sustainable in the long run. The Wereda (District) Forest Management Association (FMA) (the Wereda level community based organisation representing got (village) level forest management groups) would require further strengthening and recognition to be able to stand on its own in dealing with these matters. With forestry being such a long term investment, building confidence in tenure security amongst communities is of utmost importance | <ul style="list-style-type: none"> In other districts under a sister project (REPAFMA), a communal land certificate/title (based on the Regional Rural Administration Proclamation) has recently been brought in to augment the PFM agreements, strengthening community tenure. This should be explored and applied. The judiciary and police need to be fully oriented on the rights of communities in PFM. An FMA suggested to pay a percentage of their forest income to such authorities to ‘make them more responsive’. This should be considered. Higher level self-sustaining community organisations are required who could give communities a voice to safeguard rights at higher decision making levels. The Wereda FMA is an initial step in this direction, its viability needs to be carefully monitored post project support (especially as a not for profit organisation), its organisational capacity strengthened and ‘scaled up’ to higher decision making levels. |

Key aspects: Devolved user rights and forest based livelihoods, are essential for rewarding communities for their increased management investment under PFM and to incentivise maintenance of extensive and diverse forest.

| WCC-PFM Project Results | Challenges and analysis | Recommendations |
|---|---|---|
| <ul style="list-style-type: none"> Forests are a fundamental importance to the livelihood of local people in the area, producing valuable products such as timber, honey, spices and coffee, often contributing at least 50% of household needs. Hence forest maintenance and management through PFM is of essential importance to livelihoods and livelihood resilience. Under PFM communities have welcomed the decriminalization of their subsistence use and of the commercial use rights for non-wood forest products but are particularly frustrated that commercial rights for wood use have not been granted. Through support from the project, cooperatives have been established and links to markets created to provide premiums for coffee, including notably for wild coffee from the natural forest. (It could be argued that although linked to PFM these benefits cannot entirely be attributable to PFM.) With the communities now actively enforcing their own forest control, informal/illegal commercial use of particularly of wood products has been reduced considerably. This used to be an important source of revenue for marginalized groups Whilst incomes from coffee and honey have increased, especially for cooperative members, some marginalized groups who are not members are complaining they do not benefit much from these cooperatives, only as paid labour to collect coffee. | <ul style="list-style-type: none"> The continued limiting of commercial user rights in PFM poses numerous challenges to incentivizing the maintenance and management of a resilient forest system. Not only does this severely limit the economic potential of the forest, but narrows the commercial value of the forest to a precariously few commodities, notably coffee. If the international price of the main commercial product – coffee, falls dramatically for a sustained period, the coffee forest could be rapidly converted to agriculture. By legalizing sustainable commercial wood use marginalized groups could be brought into the fold of PFM, building from and harnessing their knowledge, skills and formalizing their existing illegal trade links. This would minimize the negative impact of PFM on their livelihoods and maximize returns from the forest. With benefit sharing in PFM, there have often been issues in other countries in other countries around the world, sometimes the rich have got richer and the poor have gotten poorer as a result of PFM, even with a broad range of user rights. Although there are some feasible checks and balances, PFM cannot fundamentally socially re-engineer hierarchical societies and attempts at pushing this too hard through PFM – inducing self-motivation within communities to maintain and manage the forests. | <ul style="list-style-type: none"> With communities in PFM having substantially more responsibilities than communities outside PFM, it is essential that commensurate with those responsibilities come substantially more user rights and benefits, including a broader range of commercial user rights to help incentivise PFM. As community members stated on many occasions, ownership of the forest without benefits, is not ownership at all. With the high demand and value for wood products in the local towns currently met from uncontrolled illegal sources and with a need to incentivise tree management and maintenance and controlled forest management in PFM, it would seem ideal to pair up PFM and carpentry workshops for example. The best way to convince government of the merits of commercialising particularly wood use is through controlled pilots. Permission for these policy pilots would have to be sought from Regional government. Also the role of marginalized groups, who are engaged in the informal sector of currently illegal wood sale, would have to be carefully considered. Furthermore, the development of enterprises selling a greater diversity of products will help to promote the widest possible diversity in the forest and help to prevent over selection/production of a particular product/plant and maintain biodiversity. To avoid elite capture of formal timber trade, there should be a focus more on the formalisation of existing illegal activities of the marginalized groups and maximising returns from sustainable use and formal enterprises. This would, in addition to avoiding marginalization, capitalize on the skills already present within these groups. Attempts internationally aimed at encouraging forest peoples to completely delink from the forest into alternative livelihoods have a very poor track record and have often been counterproductive. |

| Key aspects: Biodiversity, especially genetic diversity of wild coffee, is a key concern for government and the global community; while diverse natural forest maintenance is important as a direct livelihood resource for people and for a host of environmental reasons from water quality to climate change | | |
|--|---|--|
| WCC-PFM Project Results | Challenges and analysis | Recommendations |
| <ul style="list-style-type: none"> Evidence from a remote sensing inventory of all the PFM forests and those outside PFM forests shows that natural forest loss in PFM forest is at an average rate of 0.18% per annum over the last six years compared to 2.6% per annum in non PFM sites, a 14 x lower rate of loss in the PFM forest. This is an impressive difference. Based on analysis of 96 sample plots, biodiversity in the natural forest under PFM has not reduced significantly in 6 years, neither has the forest diversity and structure deteriorated. In the coffee forest under PFM based on the plot data there has been a continued decline in woody species based in the forest, a 75% decline in natural tree seedlings matched with a corresponding large increase in coffee plants. The density of large trees is also declining. There was unfortunately no control outside the PFM sites to compare changes in forest structure of coffee forest and natural forest inside and outside PFM sites | <ul style="list-style-type: none"> It may be assumed that the wild coffee and other biodiversity will be saved because the success of PFM in incentivising natural forest maintenance and keeping this natural forest relatively undisturbed. However coffee thrives best with a 60% canopy cover and according to community members interviewed, closed 'intact' forest is not ideal for wild coffee either. With buffalo, forest elephants and other animals no longer an integral part of the forest ecosystem since the 1960s to keep this reduced canopy, moderate forest disturbance and canopy reduction in parts of the natural forest might be required of the communities for wild coffee stands to thrive and for other biodiversity maintenance. PFM has been less effective in incentivising the halting of degradation of coffee forest if the survey data is correct (testimony from community members and observations in the field by the author contradicted this with some planting of replacement shade trees). If the survey data is correct it would not be surprising considering the continued criminalisation of wood sales, undermining the incentives for natural tree stewardship combined with its high opportunity cost on coffee. Farmers don't have the luxury to withstand a decade or two of such opportunity cost just to ensure shade trees for the future that have no other direct financial value. | <ul style="list-style-type: none"> A comparative study on the ecology of wild coffee in non-disturbed sites and disturbed sites is important to assess the impact of efforts to conserve the wild coffee in an artificially 'undisturbed' forest. If moderate disturbance is a requirement for the maintenance of wild coffee, the sustainable forest use encouraged in PFM, might better mimic the natural environment for wild coffee than the more strict exclusionary preservation approach, for example as found within a biosphere core zone. With regards to the findings in the coffee forest the discrepancies between sample plots analysis and observations / community testimony would have to be checked. If indeed the clearance of woody species is continuing apace and the natural forest structure is not sufficiently balanced to be sustained and replenish the shade trees this has severe implications on the viability of the coffee forest system. It would be important to find out if commercial use rights over the trees in the coffee forest could in anyway incentivise the maintenance of trees/lower the opportunity cost of natural tree stewardship. A pilot area for sustainable timber utilisation should be established. It has been noted internationally that PFM works best in incentivising the maintenance of existing good condition forest, rather than in incentivising the rehabilitation of degraded forest because investment/return ratios are less attractive. If this is the case, the priority focus should be on forest maintenance of the existing natural forest considering this forest is most under threat and the efficacy of PFM has proven the highest in maintaining this. Rehabilitation of coffee forest should be a secondary priority. |

1. Background and Introduction

Participatory Forest Management (PFM) practices have spread around the world over the last 40 years with governments realising that although most natural forests are legally under their control, in reality they do not have the resources to implement effective forest management nationwide, especially where local communities are dependent on the forests (FAO, 2015). It has also become increasingly clear that centralised government control disenfranchises forest communities, undermining customary forest stewardship often resulting in de facto "open access". This has contributed to high rates of forest conversion, destructive use and provided few incentives for forest communities to invest in local forest maintenance and management.

In Ethiopia, PFM started with pilots in Adaba Dodola, in Oromia Region in the mid-1990s and, after early successes, and more pilots in other areas, this led to legislative revisions in the Federal Forest Proclamation (2007) and Regional Proclamations - particularly in Oromia and Southern Nations regions (in 2004 and 2012 respectively). These changes provided an enabling policy environment to devolve a degree of forest control, management responsibilities and user rights to communities. These regional proclamations stipulate a category of 'community ownership' over the forest, in accordance with the overriding national constitution which states that all land is vested in the state. In reality this translates into a transfer of forest management rights from the state to communities.

PFM has been up-scaled rapidly, particularly in the last 10 years. As of 2015 there were reported to be 1.36 million hectares of forest under PFM in Ethiopia. (A. Said and T. Tadesse, pers. communication, 2015). This paper examines the key impacts, and lessons, and unpacks the complexity around the application of PFM in 4 districts in Sheka and Bench Maji Zones, within the Southern Nations, Nationalities and Peoples' Regional State (SNNPRS) in South West Ethiopia through the WCCPFM Project. (See figure 1).

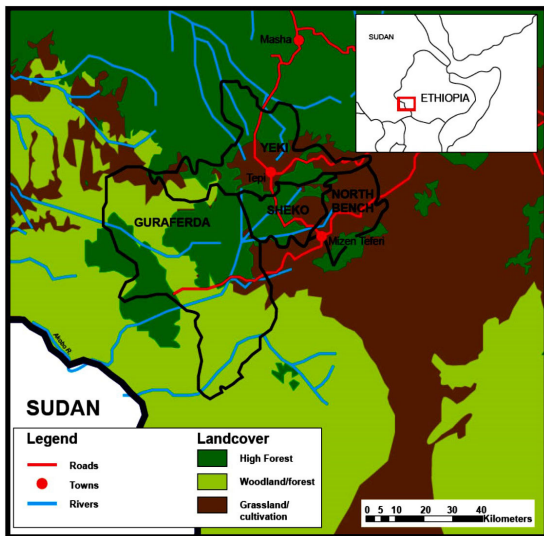


Figure 1. Location of WCC-PFM project site

Here the moist montane forests of Kontir-Berhan and Amora Gedel provide an ecological home for wild coffee which in this area has a high degree of genetic uniqueness. These

forests are thus a globally important genetic bank of one of the world's most valuable commodities. The forests also provide many benefits for an ethnically diverse population, made up of the long-term inhabitants who have traditionally had more of a forest-based culture and migrants who came from other parts of Ethiopia, especially during the northern famines in the 1980s, and who have a more agriculturally-based culture.

Prior to PFM, there had been some conversion of the natural forests to agriculture and settlement, but a particularly rapid degradation of the more accessible areas of natural forest to coffee forest was occurring when the project started. This involved the natural forest's ground vegetation, as well as the lower and middle storeys being heavily degraded and the land planted with wild coffee seedling taken from the natural forest, thereby maximising coffee production with only some large old trees retained to provide the required 60% shade for coffee. Because of the skewed aged structure in this coffee forest, especially the absence of canopy replacement trees, this is no longer a sustainable forest system in the long run.

According to community members the key reasons for conversion/degradation of the natural forest were two-fold.

Firstly, with legal government control of the natural forest this created localised tenure insecurity and de facto “open access”, where investors, migrants and locals would all ‘grab’ areas of natural forest to clear/degrade for coffee intensification or agriculture. This clearing was envisaged to strengthen individual claims to the land as tax is paid on coffee forest holdings. Secondly, with most natural forest product use criminalized, particularly wood products the opportunity cost, through diminished returns from coffee, of keeping all the natural trees and allowing them to mature in the coffee forest, outweighed the shade benefits that the trees would provide to coffee when mature.

The introduction of PFM in the area to cover both coffee forest and the natural forest, through devolved control and decriminalizing subsistence and some commercial use of forest products (restricted to non-wood forest products by the current policy), was intended to incentivise forest maintenance and management, particularly to stop the conversion/degradation of natural forest and so save the ‘natural’ ecological home of wild coffee in the natural forest.

Communities applied for PFM and went

through various steps including forest boundary negotiation and demarcation, forest management planning and community organization formation, which were requirements before signing a devolution agreement with local/district government. At the end of this 6-year project, approximately 76,000 ha of forest were under these agreements and managed by community organisations representing around 30,000 people.

2. Principles and practice of PFM in the WCC-PFM project

There has been a broad spectrum of participatory forest management practices developed over recent decades. Figure 2 provides a generalised view of this spectrum.

for guards or subsidies, respectively. Joint forest management is where communities and government share responsibilities and benefits in government forest (both plantations and natural forest), often including wood products.

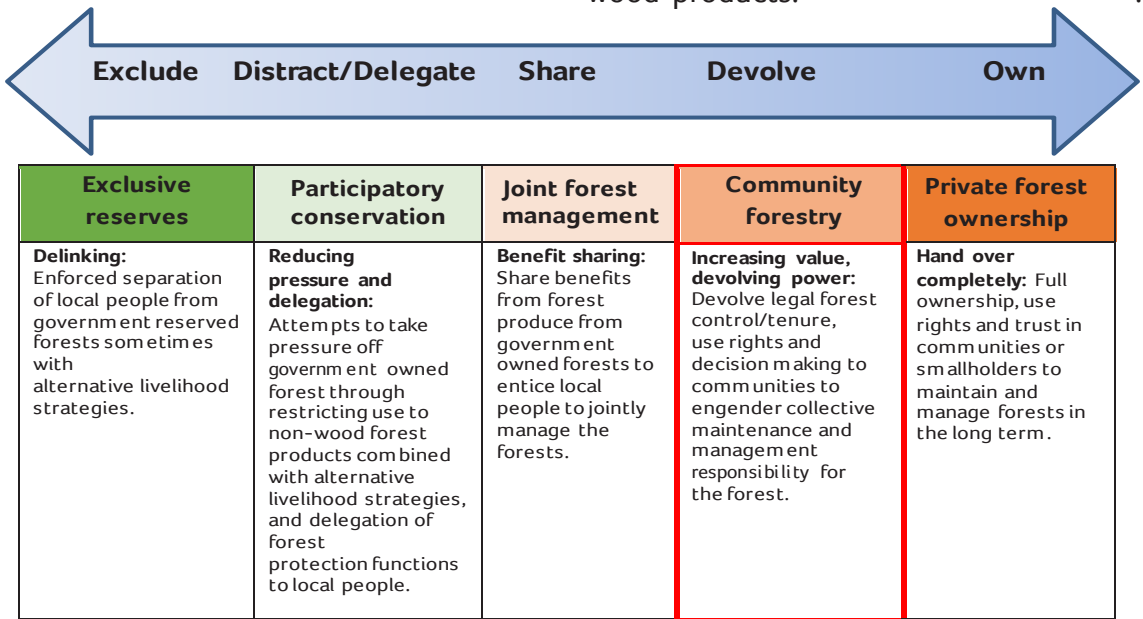


Figure 2. Generalised spectrum of participatory forest management approaches.

At one end of the spectrum where there is no participation, forests are preservationist reserves where local people are often kept out by force. Next comes participatory conservation approaches where communities are delegated conservation responsibilities in government reserves in return for limited use rights over non wood forest products and/or in return for alternative livelihood initiatives designed to distract communities from forest use. These approaches tend to require perpetual external funding

Community forestry is where some degree of tenure control, autonomy in decision making and subsistence, and sometimes commercial user rights are devolved to community organisations in return for an obligation to collectively maintain and manage a local forest sustainably. Within community forestry there is considerable variation; the 'devil is often in the details'. Sometimes responsibilities far outweigh rights, sometimes little autonomy in decision making is handed over, sometimes the complexity of the requirements to get a community

forest agreement are so high that it is not implementable without outside project support. However, where the process is streamlined and the incentives in terms of rights and responsibilities are attractive for communities, the approach has a proven track record in being a self-sustaining approach in numerous countries around the world.

At the extreme 'high' end of devolved forest management is full forest ownership. There are many examples of this, particularly in some European countries like France and Finland. There have also been cases of community forestry progressing to full ownership status in Africa, for example in Gambia, while in Latin America indigenous groups have often been granted very strong tenure rights over their forests which are getting close to full ownership (FAO, 2015). The PFM applied in the WCC-PFM project is closest to community forestry in the spectrum shown in Figure 2.

Conventional conservation and integrated development approaches to forest protection tend to be built around an intention of 'taking the pressure off' the forest. They often have carrots (alternative livelihoods support) and sticks (enforcement of protection) strategies and are built on an assumption that poverty

and irrational behaviour of local people are key causes of forest destruction.

In contrast community forestry uses the forest itself as the 'carrot' and is built upon a premise that tenure insecurity and criminalization of forest use undermines customary stewardship and demotivates community members from maintaining the forest and protecting it (Figure 3). This analysis shows that prior to community forestry, under a governance environment which create de facto 'open access', the lack of willingness of community members to invest in forest maintenance and sustainable management is seen to be a rational behaviour. Changing the incentives within the governance environment is recognised as the key to behavioural change. i.e. making forest maintenance and management a rational behaviour. In essence with changes in governance incentives, local people's dependence on natural forest resources switches from being a threat to becoming an opportunity for forest maintenance and management.

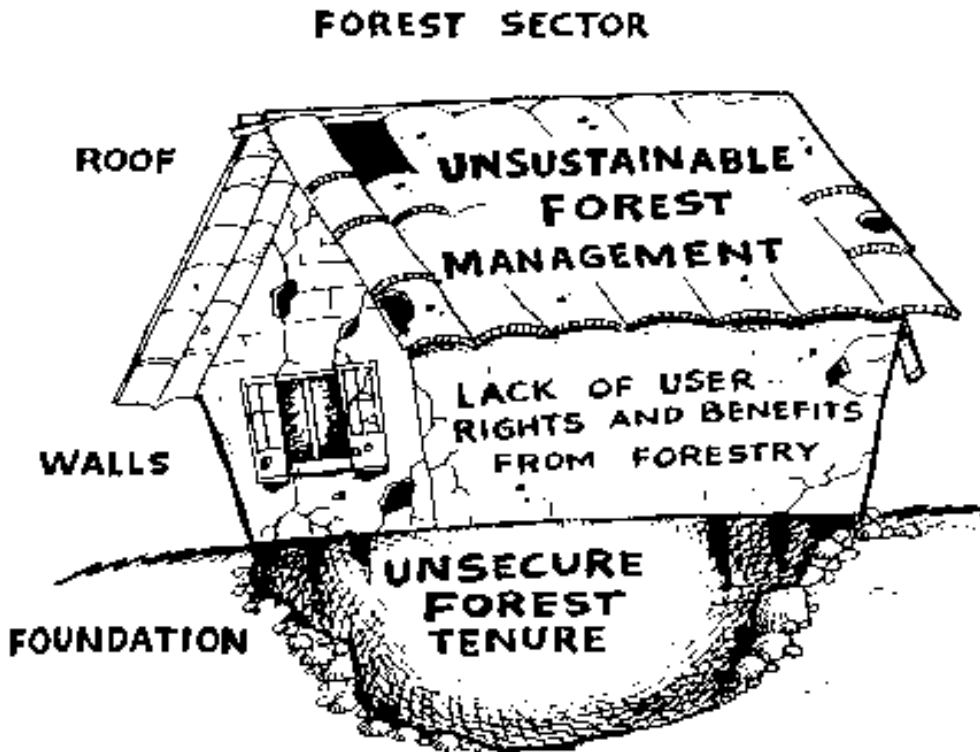


Figure 3. The premise of the problem environment that community forestry to address.

Figure 4. below illustrates the key elements of community forestry that respond to the problematic governance environment illustrated in Figure 3. Rather than directly forcing community members to protect forest or encouraging them to do so with project handouts, the emphasis is on changing the incentives within the governance environment to make it rational for communities to invest in maintaining and wisely managing the forest. It is very much like an equation in application, as A. (control) without B. (use) would lead to disillusionment. B. (use) without control could lead to destructive use. Only by getting A and B in place will

you get C and the benefits of A and B must be commensurate with the responsibilities in C. The more responsibility that is hoisted on the shoulders of communities, proportionately the stronger the control and use rights have to be to incentivise this. This is particularly relevant in the WCC-PFM project area where even under PFM, there are no commercial use rights for wood. Hence, maintaining the natural forest to preserve wild coffee stands inflicts high opportunity costs on communities. Without PFM rights of control and use they would degrade the forest to intensify coffee production.

A. Communities have rights to **legally control**, a demarcated forest area.

+

B. Communities have rights to actively manage, **legally use** and sell forest 'pay its way'

=

C. Communities have **responsibility to maintain and manage** the forest sustainably

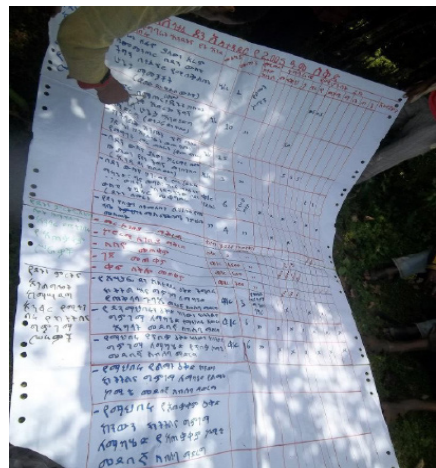
Figure 4. Devolved forest management 'equation'.

Significant work was undertaken by the NTFP-PFM predecessor project of the WCC-PFM project to work with the Regional Government in supporting a multi-stakeholder development of a new forest policy, with the intention of developing an attractive incentive balance within the policy, that could then be operationalized through Participatory Forest Management Agreements. The policy fell short on what communities wanted, particularly regarding commercial rights over wood use in PFM forest. In ongoing processes to draft a Forest Regulation, reviews of early drafts have determined that rights proposed in the policy will be reduced. So the enabling environment for PFM is far from assured.

With forestry being a long term investment, stability in the governance to both control and get future returns are extremely important to incentivise forest management. The constraints of this policy environment have had significant effects on the impact of PFM, as discussed in Section 3 that follows.

3. Some key modifications in the WCC-PFM steps applied in the project and preceding NTFP-PFM II project.

The WCC-PFM project and its predecessor project attempted to design the PFM steps to be as streamlined and community driven as possible at community level (see photos 1&2), especially with the constrained policy environment in mind.



Photos 1 & 2: The simple forest management plan developed by community members is fully understood and 'owned' by them.

Some further specific adjustments were made in the WCC-PFM project context where in-situ 'wild' coffee conservation was a major project aim. Figure 5. Outlines the PFM steps used and the adjustments are explained below.

- **Separating out externally imposed monitoring and control in the PFM establishment process.** A major part of streamlining PFM steps and procedures was ensuring that the activities are designed in a way to be as relevant and 'owned' as possible by the community members themselves, and to not impose onerous monitoring requirements. Complex resource assessment and forest management plans, imposed on community members by professional foresters have been a fundamental barrier to building ownership of the PFM process within communities and to institutionalising PFM without project support, and they have been of little practical use to anyone (FAO, 2015). In the WCC-PFM project control and monitoring requirements from government, in the form of inventory plots etc, were kept separate from the community-based processes, and the latter were based on simple, qualitative and participatory procedures.

- **Adapting the process to the challenge**

of incentivising 'in-situ' wild coffee maintenance and degraded coffee forest rehabilitation. Since a main aim of the WCC-PFM project was in-situ coffee conservation in the natural forest, which places a significant opportunity cost on community members, and also included the rehabilitation of degraded coffee forests which requires significant rehabilitation investment and imposes opportunity costs on communities, several modifications to the PFM steps were made. For example the process and formats in the management planning process were simplified; for instance separating out the natural forest and coffee forest within the management plan. Within these separate elements communities were encouraged to balance the burdens and benefits from forest management as best they could. However with continued constraints in the policy environment, particularly around commercial wood use, tinkering with the process may never produce an attractive incentives balance to offset the opportunity costs and rehabilitation investment burden placed on the communities. Only time will tell if this can be achieved. It must be noted that within the PFM agreements, extra responsibilities were added related to wild coffee biodiversity conservation, but there was no commensurate increase in community control or use rights. What

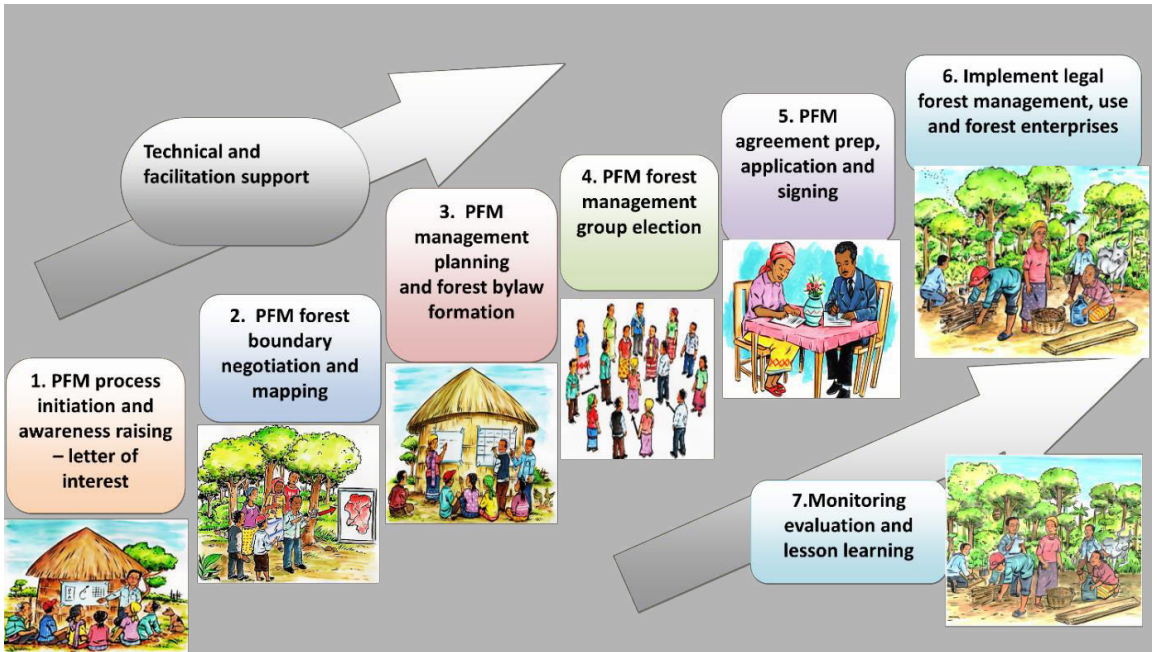


Figure 5. The simplified PFM steps that evolved through experimentation in the WCC-PFM **project** and preceding NTFP-PFM project.

the WCC- PFM project did try to rectify in relation to the incentives imbalance was to support communities in developing cooperatives and to get premiums for both forest coffee and ‘wild’ coffee.

4. Impact of PFM and analysis of impact.

When reviewing the impact of PFM in the following section, it is important to keep in mind the still far from ideal, and rather restrictive, policy environment within which PFM is constrained to operate. The impact sections below are laid out under headings that correspond to the PFM equation (See Figure 3).

As with any equation, the elements are very much interconnected, with for example continued restrictions in user rights having impacts on responsibilities for forest management.

4.1 Forest control rights

The new devolved rights and responsibilities within the Federal and Regional Forest Proclamations (2007 and 2012 respectively) were operationalised in the project area through 55 Participatory Forest Management Agreements (PFMAs) over 76,000 ha of forest. This devolved control and management of the forests to community organisations representing around 30,000 people.

According to community members in participatory exercises conducted in all of the project districts, feelings of ownership over the forest have increased by 60-80% as a result of PFM. When results were genderdisaggregated women consistently had a higher increase in feelings of ownership over the forest than men, from before to after PFM. That may be because women had a very low involvement in decision making over the forest prior to PFM compared to men, combined with the pro-active engagement of women through the PFM process and with their representation on forest management associations and forest cooperatives.

According to community testimony, the main changes and issues brought about by PFM with regards to forest control have been the following:

- There has been a very large increase in the feeling of ownership which the community has over the forest, because of the PFM agreement. Forest boundaries are now much more respected by neighbouring communities and outside users.
- Communities acknowledge that they are much stronger now than before, because of their new forest rights and organizations, especially the umbrella Forest

Management Association at district level which provides a voice for them. But, in the absence of the project to provide a link/voice for them within government, they feel they are still too weak to protect their new found rights.

- With the responsibility to control forest use, communities are undertaking regular monitoring and have apprehended numerous illegal encroaches and users in their forests. However, they reported that the government authorities have been either slow or seemingly unwilling to act on these cases. This unwillingness of government to act is undermining the ability of the community to control the forest.
- Related to the above, it was reported by community members that they had no legal rights to sell confiscated illegal products, or get any financial benefit from them, rather they are simply stored by the community members or local government. As community members apprehend illegal harvesters on a voluntary basis with no remuneration, having no ways to benefit from confiscated goods also undermines motivation to control forest use.
- In some communities there were reports of government officials proposing to allocate PFM forest to investors.

There was speculation that private interests may have been involved in pushing for such decisions. Again it was difficult for the community organisations to get action taken on this without project support. This again is undermining confidence in the strength of the devolved control that has been handed over to communities under PFM.

With forestry being such a long-term investment, confidence in tenure security for communities is of utmost importance. Tenure security is in effect the foundation of PFM; if community control of PFM forests is not fully supported by government in the absence of supportive projects the whole approach could fail. Some recommendations to address this are contained in Section 5.

4.2 Forest use rights (and related forest based livelihoods)

Devolved user rights and forest based livelihoods are essential to reward communities for their increased management investment under PFM and to incentivise maintenance of a diverse forest.

With community members reporting that they received up to 50% of their livelihood needs from the forest, and with different sections of the community reliant on

different types of forest products, it might be assumed that maintaining the forest and managing it, legalising some use (within the still restrictive policy environment) and supporting marketing of forest products, would be generally positive for the community. A complex picture is however emerging about the impact of PFM on livelihoods, as seen from the community testimony/participatory exercises conducted by the author and from reports from other project team members' discussions in the communities. The following illustrates this:

- Cooperative members reported substantial increases in revenue from specific products, which they attributed to the project support to their cooperative's formation, and market linkages. It was reported that they could directly attributed a 14.53% increase in coffee related income directly to the project, along with 35.33% income increase in honey revenue (WCC-PFM Briefing Note 14).

- In terms of livelihood improvement that is directly linked to increase in forest rights under PFM (note that sale of coffee from coffee forest was authorised prior to PFM), commercial rights to sell wild coffee from the natural forest have been granted. The challenge with this coffee, is that because of its lower density than cultivated coffee in the coffee forest, and because of its relative inaccessibility, the labour costs for harvesting are considerably more than for the cultivated coffee. With the help of the project a market link was made to a buyer who could offer a premium for this coffee. However marginalized ethnic groups are complaining that they are not sufficiently represented in the cooperative that harvests the wild coffee from the natural forest, and only benefit as paid labour.

- With 'de facto' open access largely halted through community authority and enforcement and with commercial wood sale still criminalised under PFM, the previous informal trade in wood products from the forest, which was of particular importance to marginalized groups, has largely ended in the forest. So it can be assumed that PFM is hitting the most forest dependent people the hardest, especially because of the continued criminalisation of wood use. Complaints have come from the Manja and Gubacara minority groups that used to

depend entirely on the forest (especially for wood product sale) for livelihoods (WCC-PFM, Briefing Note 14). Even apart from the marginalized community groups, many community members in general, expressed their frustration at the continued criminalization of commercial wood use as it undermined motivation to invest in long term forest and tree management as they watched valuable timber trees die and rot. This is clearly limiting the optimization of livelihood benefits that could be derived from sustainable forest management and use.

- Likewise with subsistence use of the forest now under PFM community control, with destructive practices stopped, and with rules enforced about not harvesting tree species when they are young, there will be some other immediate 'costs' especially for those most dependent on forest use. Some community members stated that the legalization of subsistence use has instilled forest stewardship within the community, and although there may be some short-term costs with regards to reduced extraction from the forest for subsistence needs, because destructive extraction is now controlled forest productivity and value would increase in the long run. It was considered that livelihood resilience has increased for the future by ensuring a sustainable

supply of forest products in the long run. So it is accepted by some community members that there are short-term livelihood sacrifices for longer-term livelihood resilience.

- In focus group discussions conducted by the author to examine the overall impact on livelihoods (subsistence and cash income), community members stated that through the support of the project, the benefits from the coffee forest had increased overall with higher prices for coffee through the market linkages created by the project. However, when including the illegal use and sale of products that happened prior to PFM in the natural forest, and even with the premium paid for wild coffee, the overall livelihood benefits from the natural forest have decreased.

Although some stated that this was an acceptable price to pay for livelihood resilience in the long run due to active forest maintenance and management, it was repeatedly stated by marginalized group members and other sympathetic community members that the burden of PFM, especially within the current policy restrictions, had fallen hardest on the ethnic groups that were most dependent on wood product trade prior to PFM. See Figure 6.

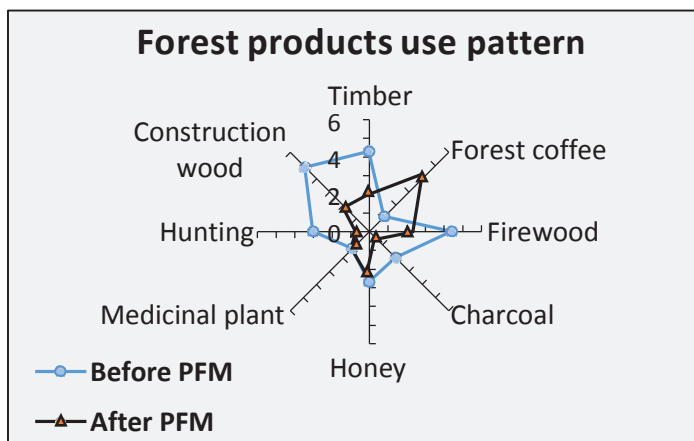


Figure 6. The perceived benefits from the forest from different products before and after PFM, (WCC-PFM Briefing Note 14).

As different ethnic groups rely on different products to different extents some will be more greatly affected than others.

4.3 Responsibilities for forest management and in-situ coffee biodiversity

Biodiversity, especially the genetic diversity of wild coffee, is a key concern for the Ethiopian government. Maintenance of the diverse natural forest is also important as a direct livelihood resource for people and for a host of environmental reasons from water quality to climate change.

Remote sensing evidence of the whole of Sheko wereda comparing kebeles with PFM forests and those with non PFM forests shows the natural forest loss rate of PFM forest is at an average rate of 0.18% per annum over the last six years, compared to 2.6% per annum of non PFM forest.

This is an impressive difference and shows that PFM has been effective in slowing the rate of forest loss substantially.

Based on analysis of sample plots in the natural forest under PFM biodiversity has not reduced significantly in 6 years; neither has the forest diversity and structure deteriorated.

Community members in all sites were asked by the author to draw the forest condition that had been maintained as a result of PFM, and speculate as to what the forest might look like in the absence of PFM. Photo 3 below illustrates one of the typical visions produced.



Photo 3: Community members illustrating their perception of the impact of PFM on the forest condition (left) and what would have happened in a “business as usual” situation if PFM had not been introduced (right).

The picture on the right illustrates that only some large shade trees would have been retained. The artist explained that the middle and lower storey trees would have been cleared and coffee planted intensively between the shade trees.

What is particularly striking is when the forest situation under PFM is compared to the situation in a Biosphere Reserve core area directly next to a PFM site (See Table 1. below).

| | Feeling of ownership compared to previous situation (government reserve forest) | Legal use rights/benefits (for home consumption and sale from the forest) compared to previous situation | Motivation to maintain and protect the forest compared to previous situation |
|---|--|---|---|
| Concerning forest where Biosphere Reserve Core Zone was applied | 0% increase in feeling of ownership | 59% decrease in the legal benefits they are allowed to get from the forest | 5% decrease in motivation to maintain, develop and protect the forest compared to when there was no biosphere under 'open access' |
| Concerning forest where devolved forest management / PFM was applied | 64% increase in feeling of ownership | 57% increase in legal benefits they are allowed to get from the forest | 87% increase in motivation to maintain, develop and protect the forest compared to before PFM when there was 'open access' |

Table 1. Comparison of community assesment of forrest situation between biosphere reserve core area and PFM site

According to community members across all the sites, motivation to maintain and actively manage the forest had increased by between 80 to 95% as a direct result of the implementation of Participatory Forest Management. The links between control, use rights and responsibilities are inextricably linked.

The biosphere reserve (which is based on a 'take the pressure off the forest' approach) and the devolved forest management paradigm (which is based on strengthening the links between communities and the forest through increased tenure security and use rights to enhance forest value and encourage sustainable use), offers a clear illustration of how superimposing models based on assumed problems by experts and building approaches based on the underlying problems identified by community members have very different results both on community behaviour and in the long term, on the forest itself, especially in the absence of project support. (Photo 4).



Photo 4: Post project support in a biosphere reserve core zone.

As community ownership and use rights were reduced through the introduction of the biosphere reserve core zone, combined with lack of enforcement of the strict protection after the supporting project had withdrawn, an increased feeling of open access was created. This resulted in the core zone being cleared. When the author visited this community, they assumed he was associated with the biosphere reserve and as a result he was initially met with an angry reception. Notably the community members who had been delegated to and paid as forest guards were angry because their pay had stopped since the end of the supporting project,

Other observations about the impact of PFM in both the coffee forest and natural forest as a result of PFM included;

- Some low productive agricultural hillsides have been converted to coffee forest through tree planting activities, increasing the land area under forest,
- Amount and quality of forest products inside the forest is improving, notably increased regeneration of valuable timber species, through controlling their cutting and weeding around them (photo 5),
- Increasing regeneration of ‘wild’ coffee plants in natural forest, the result of controlled access,
- Wild animals coming back with enforced rules on hunting, such as wild pigs,
- Through controlled access in coffee forest, re-appearance of lianas in this forest.



Photo 5: The forest management activities were self-initiated by the community organisation.

At a PFM site adjacent to the biosphere reserve site, a group of around 100 villagers take a break from their forest management activities (weeding around natural regeneration, and seedling planting to increase the forest area).

The resilience of the forest management system, however, hangs very much on the commercial value of forest products, especially coffee and honey. In all the project districts when community members were asked what would happen to their management responsibilities if the financial returns from forest product sale declined, they all stated that their motivation to maintain and manage the forest would decline.

Further, limiting user rights poses numerous challenges to incentivising the maintenance and management of a resilient forest system. Not only does this severely limit the economic potential of the forest, but narrows the commercial value of the forest to precariously few commodities, notably coffee. If the international price of the main commercial product – coffee – falls dramatically, the coffee forest area might decline dramatically with it, to be replaced by a more competitive land use like agriculture.

In addition, managed forests are manipulated to maximise production of the products that have a legal commercial value (this can be clearly observed in coffee forest) at the expense of those products that have no legal commercial value. This dis-incentivises the communities from having a diverse forest system.

Partially linked to the above point, according to biodiversity survey data of 96 sites, PFM (under the current policy restrictions) has been less effective in incentivising the halting of degradation of coffee forest. In the coffee forest under PFM there has been a reported 75% decline in natural tree seedlings matched with a corresponding large increase in coffee plants. Testimony from community members and observations in different field sites by the author partially contradicted this, showing that in some places individual have started replanting canopy trees to help maintain the level of shade needed in the coffee forest. The density of large trees is also declining from both the survey and this author's observations. In a heavily degraded forest without a 'normal' balanced structure, it is often a very long process to rehabilitate such forests to a more 'normal' distribution where dying old trees are replaced by seedlings rather than trees coming up from the second storey level, as per normal replacement.

There was unfortunately no control outside the PFM sites to compare changes in forest structure of coffee forest inside and outside PFM sites. It would not be surprising that the clearing out of natural trees from the coffee forest is continuing at pace, because of the competition impact they would have on coffee production and

considering the continued criminalisation of wood sales, undermining the incentives for natural tree stewardship. Farmers may not have the luxury to withstand a decade or two of such opportunity cost just to ensure shade trees for the future that have no other direct or guaranteed financial value.

It would be very interesting to see if the decriminalisation of wood use would have any effect in incentivising the maintenance and stewardship of natural trees in the coffee forest, and what that impact would be. Even then trade-offs would still be made between short term opportunity costs on coffee production, and long term benefits from the sale of wood from mature trees. Of course beyond the use rights for such long term management incentives, tenure security would have to be increased; in coffee forest which is divided into individual plots, individual ownership was the preferred option, but with continued membership of the community forest management group. How this individual versus collective control and use rights would work out would have to be carefully monitored and revisions made as necessary to the community forestry process and agreements.

Another very interesting question concerns the best ecological environment

for wild coffee to thrive in the natural forest. This is particularly pertinent because the premium paid for this coffee is based on the condition that it is harvested from an intact 'wild' forest. But what exactly is an intact natural, wild forest in these areas? With humans and until recently buffalo, forest elephants and other large animals an integral part of the forest ecosystem, moderate forest disturbance was the natural wild condition. And this was critical for enabling wild coffee to evolve here. This meant there was not a complete canopy cover and that breaks in this created the conditions which wild coffee requires.

The assumption that by keeping the natural forest largely undisturbed the wild coffee and other biodiversity will thrive is a dangerous one in many cases as it changes the circumstances in which plants grow. This is particularly pertinent to PFM application in this area, as the in-situ conservation of wild coffee was a primary objective of the supporting project. It is no coincidence that cultivated coffee in the area (which is directly taken from the wild stock) thrives best with 60% canopy cover. According to community members who did some scenario mapping of the natural forest in the future using visualisations, when the forest became too thick they expected the wild coffee would disappear.

This need for disturbance for biodiversity maintenance has been increasingly studied in the last few decades. Although the pattern might not be as simple as Connell suggested in 1978 (see Figure 6.), it seems that at least moderate disturbance is an integral part of sustaining forest biodiversity. Extreme disturbance events can also cause rapid decline in biodiversity with no recovery in the short and medium term.

However it has been widely observed by Connell and other forest ecologists that a forest system that does not suffer any moderate disturbance event (e.g. by mammals, insects, drought, fire stress, disease, shifting water courses etc.) suffers from a declining species state. It has been concluded that tropical forests are by nature not pristine and static, but by nature are non-equilibrium systems, and that moderate disturbance is intrinsic to their biodiversity and resilience as a system.

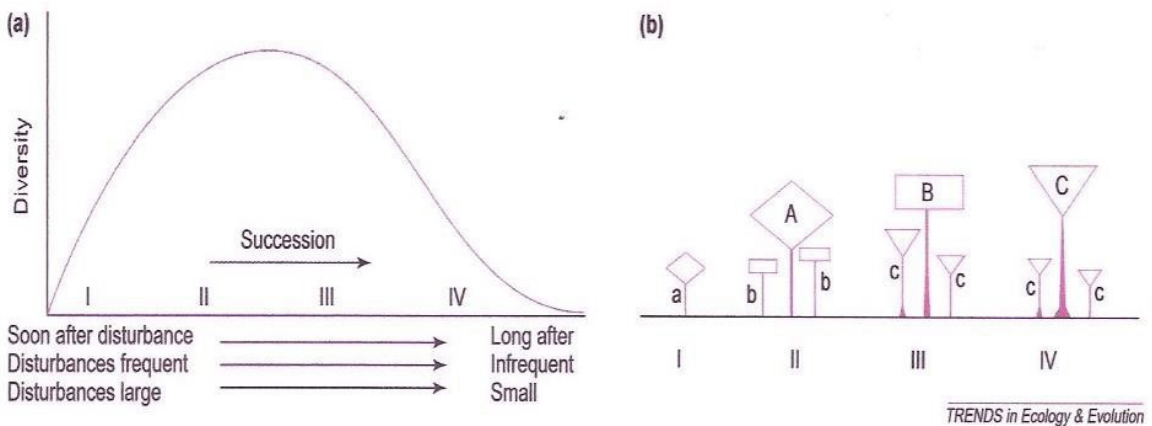


Figure 6. Forest disturbance and diversity.

(Adapted from the forest disturbance/biodiversity model developed by Connell (1978).

4.4 Sustainability of PFM at the project site?

One of the important attributes of PFM, that is often lauded, and which makes it different from, for example biosphere approaches, is the way the incentives for forest management and maintenance are largely forest based, rather than external project derived. This has important implications for long-term, post project sustainability, as the PFM experiences post project have demonstrated in several place. For example in the Adaba Dodola site in Oromia where PFM and the forest were maintained beyond the project.

In the WCC-PFM project area, the author conducted participatory exercises with community representatives from all districts to ask them for perceptions of the chances of sustainability of PFM in the absence of project support. On a score from 0-10 (0 being immediate collapse of PFM and 10 being 100% confidence in the long-term resilience of PFM post project) the average score was from 4-5. Notably the wereda where PFM was initiated in the area was more pessimistic than those which had more recently joined this project. This was due to the numerous instances of lack of government support for their rights. The newer weredas perhaps are still in the 'honeymoon' period for PFM. Also the 'high burden' of forest management and opportunity

costs associated with PFM, compared to the restrictive commercial user rights, were considered to be a key demotivating factor particularly for marginalized groups who had been highly dependent on forest trade in the past.

With regards to institutional sustainability, for the wereda level Forest Management Associations the sustainability chances were on average scored at between 3 and 4 out of 10. The reasons included that the FMAs as NGOs are not allowed to be "for profit" organisations. As a result, they depend on a mixture of membership fees and a contribution from the forest cooperatives agreed in a non-legally binding MoU to cover their operating costs. Also the insufficient government support and recognition for PFM rights has impacted on the FMA's authority and so contributed to risks to its sustainability. With regards to the cooperatives that sell forest products, the cooperatives that sold coffee from the coffee forests were confident of sustainability on average 7 out of 10 because coffee cooperatives like this have established market linkages and support systems from government. The cooperative marketing wild coffee from the natural forest on the other hand gave a score of on average 3 out of 10.

This was suggested because of a number of reasons, the newness and the apparently tenuous link to a new premium buyer for this product, the teething problems in setting up the processing and transporting links for this product and also internal problems within the community. This included dissatisfaction of some of the collectors who were not members of the cooperatives and challenges with the collection of this product due to inaccessibility, low density, pests etc.

In addition both types of cooperatives mentioned the need to diversify the commercial forest products they sell and complained of the restrictions in the policy environment which restrict wood product sale. It was noted however by community members interviewed that with many other potential non wood forest products, such as herbs, medicinal plants etc. the cost/benefit ratio of harvesting, processing and selling them would not be currently attractive compared to the cost/benefit ratio for coffee. According to community members the only products that could effectively compete with coffee at its present price, and could be sustainably harvested, would be timber products, especially when legalised and processed.

It is clear that to maximise the sustainability of PFM and its resilience more work has to be done to ensure that the benefits to communities are increased, the benefits / burden balance improved and the substantive gains made are consolidated, and built on rather than being lost. Recommendations to this effect are elaborated in the next section.

5. Recommendations

In this section the author presents not only the conclusions and recommendations from the project site but also distils the relevant recommendations from a global study of 40 years of Community Based Forest Management recently conducted by FAO. (A summary of the FAO findings is within a text box at the end of the recommendations.) Most of the findings from the WCC-PFM work are echoed in the global review.

5.1 Recommendations regarding strengthening forest control

In other districts under a sister project (REPAFMA), a communal land title (based on a Regional Rural Administration Proclamation) was brought in to augment the PFM agreements. This strengthens community tenure by taking forest control one step closer to full ownership.

This should be explored for WCC-PFM and applied by its successors.

Through this certificate households and individuals who are allocated forests and forestland are entitled to exploit production forests, exchange, transfer, lease, inherit, and mortgage the land-use right'. This is clearly much stronger in terms of tenure and use rights than what the current PFM agreement provides. It seems that the decision to grant such certificates is at the discretion of local Werda officials based on their interpretation of the provisions within the Rural Land Administration Proclamation. The process to obtain such a certificate is relatively simple, compared to the PFM agreement, requiring only a map, a legal organisation and a signed agreement (photo 6).

The key benefit for communities is that such certificates make it much harder for government officials to allocate that land to investors. This might be one of the sticking points to getting it approved, especially if there are any personal interests of individual government officials involved in land allocation for investment.

Secondly the judiciary and police would need to be fully oriented on the rights of communities in PFM. One community organisation interviewed by the author



Photo 6: A collective forest land title certificate from Gesha Wereda used to augment the PFM agreement.

suggested they should pay a percentage of their forest income to such authorities to 'make them more responsive'. This should be considered, rather than dismissed outright (as it was in the workshop where it was suggested) and the practicalities of this explored.

Finally, as in countries like Nepal that have the extremely powerful PFM community representative organisation, FECOFUN, a strong higher level self-sustaining community organisations is required which could give communities a voice to safeguard rights at higher decision making levels. Setting up such an organisation in a hierarchical and strongly government led society such as Ethiopia would not be without its challenges, but should be at least explored with other proponents of PFM across the country.

5.2 Recommendations regarding enhancing forest use rights and livelihoods.

With communities in PFM having substantially more responsibilities than communities outside PFM, it is essential that commensurate with those responsibilities come substantially more user rights, including a broader range of commercial user rights. This is needed to help incentivise PFM. As community members stated on many occasions, ownership of the forest without benefits, is not ownership at all.

With a high demand for wood products in the local towns currently being met from uncontrolled illegal sources and with a need to incentivise tree management and maintenance and controlled management of PFM forest, it would seem there is a potentially ideal pairing up of PFM and carpentry workshops. Eight carpentry workshop owners in the town of Mizan Teferi were interviewed by the author at the beginning of the project and all of them were worried about the future supply of natural forest wood. They were all also fed up with having to buy wood on the black market, often getting deliveries at night of mis-shapen and unusable sizes, and often being harassed by government officials for buying such wood.

Yet they complained the biggest clients for their furniture were often government officials. They all said they would be interested to receive wood from PFM sites and would give free training on how to harvest wood efficiently. They would be prepared to pay higher prices for legal wood.

The best way to convince government of the merits of commercialising wood use is through controlled pilots. Permission for these policy pilots would have to be sought from the Regional government. In addition, the role of marginalized groups who are engaged in the informal sector of wood sale, would have to be carefully considered. This was also an interesting concern a carpentry workshop owner raised.

He stated that if the trade in wood was legalized he was concerned the marginalized groups now engaged in the illegal trade might be side-lined. To avoid such elite capture of formal timber trade, there is a need to focus more on the formalisation of existing illegal activities of the marginalized groups. In addition to avoiding marginalization, this would capitalize on the skills already present within these groups.

The development of enterprises selling a greater diversity of products will help to promote the widest possible diversity of trees in the forest and prevent over selection of a particular product/plant. Also for resilience it will be important that the value of the forest rests on a broad range of products that are destined for international, as well as local, markets.

5.3 Recommendations for forest management and biodiversity conservation

A study of the ecology of wild coffee in non-disturbed sites and disturbed sites might help to advise how best to conserve the wild coffee – either in an artificially ‘undisturbed’ forest or in one with moderate disturbance.

From evidence to date, it appears that for the maintenance of wild coffee may be achieved more easily through the sustainable forest use and active forest management encouraged by PFM. This would probably better mimic the past natural environment for wild coffee, with forest damage by large mammals, than the more strict preservation, for example found within a biosphere core zone.

With regards to the findings in the coffee forest, the discrepancies between sampling observations and the community testimony would have to be checked. If indeed the clearance of woody species is continuing apace and the natural forest structure is not sufficiently balanced to be sustained and replenish the shade trees this has severe implications on the viability of the coffee forest system.

It would be important to find out if commercial use rights over the trees in the coffee forest could in anyway incentivise the maintenance of trees and lower the opportunity cost of natural tree stewardship.

It has been noted internationally that PFM works best in incentivising the maintenance of existing good condition forest, rather than in incentivising the

rehabilitation of degraded forest because investment/return ratios are less attractive with degraded forest. If this is the case, the priority focus should be on forest maintenance of the existing natural forest considering this forest is most under threat and the efficacy of PFM is the highest in maintaining this. Rehabilitation of coffee forest should be a secondary priority from a biodiversity perspective.

5.4. Recommendations on sustainability.

Many of the key recommendations for enhancing sustainability are mentioned in the previous sections 4.1 to 4.3.

One issue that will need to be closely monitored as the supporting project phases out is the sustainability of the Forest Management Associations. As not for profit organisations that rely on membership fees and voluntary contributions from the Forest Cooperatives, their viability is far from guaranteed. In the long run it would be recommended to work with the government to find a forest management organisation format that can accommodate the roles of the FMA and cooperatives within one organisation. This might require a modification of the cooperative structure for PFM organisations.

In one of the final workshops the author facilitated for the project, the group work exercises where government stakeholders and community members were in separate groups, serious misperception of PFM remained. Even after 6 years (and longer considering the predecessor NTFP-PFM project), many government representatives still considered PFM as delegating forest protection responsibility to the communities, not devolving rights for sustainable forest management and use.

To government the commercial rights for non-wood forest products that have been handed over, are simply an extension of the 'alternative livelihoods' take the pressure off the trees mindset. The communities on the other hand see the forest and trees therein as renewable resources to harvest sustainability, and the reason they want to protect them is inextricably linked to their livelihoods being reliant on them.

This difference in interpretations, if it is indeed the case, will cause a lot of problems in the future if not addressed. What is required is a more explicit focus on the governance and the institutional environment. Donors should increasingly focus not only on scaling up PFM up on the ground but scaling it deep within

institutional roles and responsibilities, so that it becomes institutionalised. High level political will and understanding of PFM needs to be sought so that PFM, like agricultural land reform, is driven by government, not by donor projects. Linked to this, the curriculum in forestry colleges has to be revised.

Currently, it is skewed too much to looking at commercial forestry in plantations and conservation only in natural forests. New skills are required to support PFM, natural forest silviculture, forest based enterprise development support and so on. It is essential to ingrain the incentives that are key to the success of PFM within the mindsets of professional foresters.

FAO lessons/recommendations from recent global review of 40 years of Community Based Forest Management (Gilmour/FAO, 2015)

In order to continue the momentum that has characterized PFM development over the past few decades and to position PFM to face future challenges, the following issues need addressing.

- **Sharing lessons** from existing experiences of PFM more successfully to donors and political decision makers so that it **becomes institutionalised within government policy and practice**, including getting messages clearly across of what makes PFM work, tenure, use rights and an enabling governance environment.
- Much more work on **tenure** is required, it is the foundation for **incentivising long-term forest management**. Many countries that promote PFM are lagging in this area and need to do much more, particularly in the face of pressures associated with agro-industrial expansion, extractive industries and infrastructure development.
- Better **commercialization of PFM forest goods and services**. Approaches to increase the commercialization of wood and non-wood goods and services need to be developed and promoted to enable communities and smallholders to realize the full economic benefits of their forest management. Linkages between smallholder or community groups and the private sector should also be explored, in a manner that ensures equitable benefit sharing.
- Recognition of the limitations of PFM. Policy-makers and practitioners should develop **realistic expectations of PFM** and not expect it to solve all societal problems, like gender rights, equity and poverty. Also they have to learn to be prepared to **accept trade-offs**, for natural forest maintenance from communities, they must be prepared to accept that the forest will be manipulated to increase its economic potential. **The choice is between no forest or a manipulated forest.**

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