

## Review on the Role of Participatory Forest Management on Livelihoods of Local Community in Ethiopia

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**Abstract:** Ethiopia owns a diverse vegetation resource which variously contributes to the production, protection and conservation functions and play significant role in the national and local economy. Despite their wide reaching significance, forest resources of the country have been declining both in size (deforestation) and quality (degradation). Regardless of the high rate of deforestation, Ethiopia still owns some forest resources. PFM emphasizes to improve the livelihoods of rural communities who live in and around the forests through providing legal access rights to forest resources and benefits associated with forest management. This paper initiated to review the role of PFM on the livelihoods of local community who live in and around the forests. In Ethiopia the number and area of forests under PFM has increased considerably over recent years. Such as, Gebradima forest, Beleta Gera forest, Chilimo forest, Bonga forest, southwest Ethiopia, Adabadodola forest southern Ethiopia, are some of the forests. Different studies indicated that introducing PFM in communities adjacent to forests in general brings considerable changes and also has an important role to play to improve the livelihood of poor rural communities. The natural, physical, financial, human and social assets are the overall livelihood assets which show significant and slight difference between members of PFM and non-PFM seen in the review. Also, much remains to be studied about the impacts of PFM on livelihoods in Ethiopia. From the review it can be said that PFM is good tool for improving the status of forest and livelihoods of people.

**Key words:** Asset · Ethiopia · Livelihood · Participatory Forest Management

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### INTRODUCTION

Ethiopia is surrounded by and predominantly agrarian country. Agriculture, including forestry, accounts for 54% of the Gross Domestic Product (GDP), employs 85% of the population, accounts for about 90% of the export and supplies over 90% of the raw materials for the agro-industries [1]. Ethiopia owns diverse vegetation resources that include high forests, woodlands, bush lands, plantations and trees outside forests. Each of these vegetation resources variously contributes to the production, protection and conservation functions and play significant role in the national and local economy. There are six key economic roles that forest resources play in Ethiopia: (i) foreign

currency earnings, mainly from export of non-wood forest products; (ii) import substitution for energy; (iii) contribution to the GDP; (iv) employment generation; v) livelihood support for millions of citizens and vi) provision of environmental services that support other sectors, particularly agriculture, construction and energy. At local level forests and trees provide food, medicine, energy, fodder, farm implement and construction materials. Upon conversion forestlands have been offering fertile croplands to sustain crop production. When protected forests are used as rangelands, act as biological measures to conserve soil and water and provide watershed protection. Several studies indicated that 90% of the energy used in Ethiopia originates from biomass and nearly 80% of human and 90% of livestock

populations in Ethiopia depend on traditional herbal medicine for primary health care [2, 3]. Also [4] estimated that Ethiopia's fuel wood consumption amounts to 84 million m<sup>3</sup> per year. Despite their wide reaching significance, forest resources of the country have been declining both in size (deforestation) and quality (degradation) [5, 6]. The annual deforestation rates declined over time, from 800 000 ha during the 1950s [7] to 200 000 – 300 000 ha between 1967 and 1979 [8], 163 600 ha between 1986 and 1990 [6] and 141 000 ha between 1990 and 2005 [9]. Regardless of the high rate of deforestation, Ethiopia still owns some forest resources. According to WBISPP [5], Ethiopia owns 4.072 million ha of high forests, 29.24 million ha of woodlands, 26.4 million ha of bush lands and 0.216 million ha of plantations. These forest resources together cover about 53% of the country's landmass.

PFM is an arrangement by which government and local communities adjacent to the forest enter into mutually enforceable agreements that define their respective roles, responsibilities, benefits and authority in the management of defined forest resources [10]. One objective of PFM is to improve the livelihoods of rural communities who live in and around the forests through providing legal access rights to forest resources and benefits associated with forest management [11, 12]. Prior to the adoption of the PFM approach, state ownership of forests with local people being kept out of the forest was a dominant feature of forest management program in most developing countries [13]. In countries like Ethiopia, the PFM approach is also designed as to form a component of the broader rural development strategy that aims at improving rural livelihoods, promoting gender-equality and reducing poverty, whilst protecting the forest from degradation [14, 15]. Experience from various countries has shown that the collaborative management approaches yielded positive benefits that may contribute to an improvement of local people livelihood. For instance, a study conducted by [16] on decentralized forest management in Nepal indicated that the program had generated more income to households through providing access to forest resources. Similar studies in Ethiopia also reported positive livelihood indicators, for example rising income level of PFM members compared to non-participant households residing in the same village [14, 15].

In Ethiopia, PFM was introduced around the mid-1990s as a new system of forest governance to provide local communities with social and economic

benefits from the forests [15]. According to [14] pointed out a total of 667, 498 ha of forest are being managed under the PFM program throughout the country at present. The number and area of forests under PFM has increased considerably over recent years. Gebradima forest, Beleta Gera forest, Chilimo forest, Bonga forest, southwest Ethiopia, Adaba Dodola forest southern Ethiopia, are some of the forests. Most of the studies about PFM in Ethiopia (e.g. [15, 17, 18, 19] have studied on the various livelihood assets (natural, physical, financial, human and social) which are considered as the building blocks of sustainable livelihoods. So this paper is initiated and interested to review the contribution of participatory forest management on the livelihoods of local community in different parts of Ethiopia.

The objective of this review is to know the historical development of participatory forest management in Ethiopia, to identify the potential participatory forest management sites in Ethiopia and review the impact of participatory forest management on the livelihoods of local community.

#### **Participatory Forest Management (PFM) in Ethiopia:**

Participation is a difficult term to define since it has been historically applied in different contexts that bear up on its current meaning [19]. Furthermore, the definition of the term can be far from its actual application in practice owing to ideological meanings given by people situated differently. There are three main ways in which the term participation is used as a cosmetic label (to keep up appearances), as a coopting practice (to mobilize labor and reduce costs) and as an empowering process [20]. Nevertheless, it is evident that there is a major shift for various reasons among development practitioners from “things to people [20] such as: recognition of the failures of top-down approaches, concern for cost-effectiveness, preoccupation with sustainability, the insight that involvement will increase incentives for commitment and the ideological belief that poor people should be empowered. According to Cohen and [21] there are different forms of participation in a rural development context: participation in decision making, implementation, benefit and evaluation. In Ethiopia, the involvement of local people in natural resource management activities can be traced back to the countrywide massive programs for natural resource conservation and rehabilitation that were initiated as a reaction to the 1972/73 famine. Also, [22] estimated that communities' involvement in these programs, sometimes also referred as participation,

is understood to be a contribution of labor and resources that often is arranged together with food for work payments. Particularly, the involvement of people in soil and water conservation and afforestation programs was a top-down and coercive process. Thus the efforts were not complemented with the necessary commitment and enthusiasm from the local people and were even met with resistance that ended with little outcome to show for the enormous investments made. Also [22] indicated both the lack of appropriate local level institutions and the ineffective mode of the participation process that failed to implement successful community based natural resource management. Local level organizations (Peasant Associations), despite their mandate to organize collective action and manage common goods, had no prior experience in natural resource management (common property management) and they were shamed in the eyes of their members due to their association with the regime, where they served as instruments of unpopular rural programs. Management of natural forests has been the task of the state, particularly following their designation as state forests by the 1975 proclamation that nationalized rural lands and forest resources. Following this nationalization, local people were legally prohibited from access to the traditional benefits they used to get from state forests.

However, the enforcement of the state ownership was weak and inefficient [23]. The 1980 forest and wildlife conservation and development proclamation [24] defined most of the natural forests as state forests. A government order further identified all forest areas above 80 hectare as state forests, although this was not recognized by local administrations as it was not issued as a legal regulation [25]. This has created uncertainty about ownership in most forest areas. The traditional or customary rights to forest use by local people therefore still loom large in real practice, creating a *de facto* legal pluralism and strengthening an open access situation with no or limited incentives for the sustainable use and management of forest resources [25, 26]. This situation combined with the pressing need of local people for forest products and land for crop production and grazing precipitates an ever shrinking forest area and environmental degradation.

Participatory management of natural resources has become a major subject of policy debates in Ethiopia in the recent past on a par with food security and rehabilitation of natural resources [27]. The participatory agenda was revived following the extensive destruction of conservation structures and deforestation activities

during the change of government in the early 1990s. These incidents were conceived as manifestations of public discontent and the failure of the heavy-handed, top down and campaign style approaches to natural resources management. As a result, discourses on the need to understand rural livelihoods, local contexts and the need for consensual involvement of the community in development and conservation activities began to gain ground in the policy debate. Concurrently, the National Conservation Strategy [28] of Ethiopia widely acknowledged the need to integrate development with environmental protection and the importance of the participation of local population. The conservation strategy adopted a decentralized approach in developing the strategies that facilitated the consideration of ecological diversity and the integration of institutional and stakeholders' conflicts in the use and management of natural resources [29]. As stated in the NCS, "If a conservation project is to be really participatory, the community has to feel, at least as much as the planning expert, that it has decided that conservation is its priority problem and that it wants to undertake specified conservation measures, e.g. planting trees." In addition, two important aspects of participation are emphasized in the NCS: 1) it stresses an equal share of power in decision-making between local people and the government (experts) and, 2) the need to define the participating stakeholders based on their Perception or view of forests as resources. Further, the decentralization processes started by the current government and the increasing emphasis on participation in the international development literature also have their impact in strengthening the participatory agenda [27]. As a result, participatory approaches proliferated in many development activities in the country in land use planning, agricultural extension and training (Participatory Agricultural Demonstration and Extension Training System) and in conservation and sustainable management of natural resources [30]. SOS Sahel and FARM-Africa are the NGOs that pioneered the current participatory natural resource and forest management initiatives in Ethiopia.

Participatory forest management (PFM) was used as an umbrella term to refer to the various systems that have been developed in different countries including community forest management, collaborative forest management and joint forest management [31]. Initiatives were also supported by other development agencies and NGOs including German Society for Technical Cooperation (GTZ) and Japan International Cooperation

Agency (JICA). PFM projects have the overall objective of promoting sustainable management and conservation of forest ecosystems and improving the livelihoods of people living in or around these resources [32-35]. The guideline developed by FARM-Africa describes the main principle of PFM as partnership based on shared goals and beliefs and a common understanding between the local community (user groups) and the government concerning the need for sustainable use, joint management and the requirements of the participatory arrangement [31]. The PFM projects invariably share the idea of forest-dependent rural households and recognize the conflict between livelihood activities and the objectives of conservation. They also accept the moral and practical need to reconcile the two by integrating development and conservation activities [31, 32, 33, 35]. There was a strong optimism about the projects as promising initiatives to promote community participation in the management of forest resources in line with the conservation strategy of the country [36]. Currently, the Ministry of Agriculture and Rural Development is planning to scale up PFM projects in different parts of the country [37]. But nowadays it is led by Environmental, Forest Protection and Climate Change Commission.

In Ethiopia pilots in PFM started in 1996 with support of GTZ in Adaba-Dodola and in Chilimo with support from Farm Africa. PFM was originally initiated with an emphasis on integrated development (land husbandry, alternative livelihoods etc.), but as lessons have been learned it has evolved to focus much more on increasing the value of the forest for local people through more secure access rights and supporting forest based enterprises in PFM (albeit restricted to mainly Non Wood Forest Products due to current forest regulation restrictions). The approach has induced enhanced forest regeneration, improved forest protection and regulated access [38].

As [14] pointed out a total of 667, 498 ha of forest is being managed under the PFM program throughout the country at present. It is currently strongest in Oromia and SNNPRS but is currently being scaled up to other regions, notably Beneshangul and Amhara.

#### **Ecological and Social Reasons for Introducing PFM**

**General Causes Behind Introducing PFM:** There are many reasons for introducing PFM, depending on whom you ask. The main two objectives are social and environmental. The one emphasizes mitigation of biodiversity loss, forest degradation and deforestation; while the other views a concern for livelihoods in forest

neighboring areas as well as the rights to utilize forest resources legally. These two are closely interlinked under PFM [39]. The forest resources in Ethiopia have suffered decades of mismanagement due mainly to loosely defined property relations over these resources. As one of the solutions, Participatory Forest Management (PFM) scheme was introduced during the early 1990s by some NGOs [40].

According to [39], the underlying reasons for introducing PFM to a community can be various. Often a combination of the following points influences the selection of target communities. Cultural or ecological properties of the forest, the level of the communities' dependence on the forest for their livelihoods; its cultural values or the forest management tradition in the area, a history of forest loss and external pressure on the forest in the area and thus resulting in an acute need to act before forests are lost, landscape management, such as watershed strategies, or enabling connectivity of forest fragments, direct requests from the communities and the commercial value of timber, NTFPs or the potential for tourism. But, [39] indicated that the direct reasons for introducing PFM as given by different organizations in their study are in all cases a combination of several causes. The utmost reason for the introduction of PFM in a forest area is the degree of threat to the forest and the external pressure it is facing. The two second most given reasons is watershed protection and the commercial value of NTFP only in two out of seven cases was timber of commercial value indicated as a reason. In many cases, a biodiversity inventory showing special values is one of the reasons for introducing PFM.

**Valuable Features of PFM Forest Areas:** Forests, where PFM is being implemented in Ethiopia, have a number of valuable ecological and cultural features. Some of these features are part of the reasons for introducing PFM to an area; and although the others are not reason enough for introduction, they are of significant potential or obvious value to communities or the ecosystem functions (e.g. ecosystem services, tourism potential or importance to traditional local customs). Most commonly, such forests harbor important water sources and old grown trees, but in a number of cases, they serve as habitat for endemic species of birds, carnivores and ungulates to mention a few. Such animal resources, especially large mammals, can be beneficial when considering ecotourism as a source of additional income. While such activities already take place in some areas, this opportunity could still be explored by more actors.

**External Pressure on Forests as Reason Behind Introducing PFM:**

As indicated in [39], one of the important factors for introducing PFM to a forest area can be the deforestation rate in a given area. There are a series of reasons for the loss of forests in Ethiopia. The direct and indirect pressures on the forests that are now being tackled by PFM are composed of two main characteristics: - The first groups of reasons are related to agricultural needs, while the second groups of reasons are related to direct use and needs of forest products. One third of the world's population, out of which the majority is located in developing countries, is dependent on fuel wood for their daily heating and cooking; fuel wood which is obtained from either forests or plantations (MEA). This case of dependence on fuel wood is a reality in Ethiopia. The most frequently reported drivers of deforestation in the PFM areas is the transformation of forest plots to agricultural land and the damaging extraction of forest resources, such as fire wood. Encroachment by people from afar, slash and burn agriculture, livestock and small-scale agriculture are also commonly reported as affecting forests negatively. Yet another activity, which was reported as also having negative influence on the forests where the PFM projects are present is small-scale logging. Selective logging and poaching however are not considered as problems in more than one area.

**Location of PFM in Ethiopia:** According to [41], Participatory Forest Management is quite new to Ethiopia it was first implemented 13 years ago. In Ethiopia, PFM was introduced around the mid-1990s as a new system of forest governance to provide local communities with social and economic benefits from the forests [15]. The number and area of forests under PFM has increased considerably over recent years. Gebradima forest, Beleta Gera forest, Chilimo forest, Bonga forest, southwest Ethiopia, Adabadodola forest southern Ethiopia, are some of the forests.

**Forest Types and Connectivity of PFM Forests:** The forests that remain in Ethiopia are close to each other. There are a few larger forest regions left where most of the PFM projects are being implemented. The forests that are included in PFM activities are in many cases separated by farmland. They are constituted by forest patches with some degree of connectivity or they are found as parts of larger homogenous forest blocks or forest belts. Until now, the majority of the forests represented in PFM projects in Ethiopia have been highland forests but recently there has been an indication of more lowland forests being included in PFM solutions [41]. The most frequently represented forest types in PFM are afro-montane and moist forests. Only in a few cases are dry forests included in PFM projects.



Fig. 2: Sites where PFM is being implemented in different parts of the country

Source: FAO Sub Regional office for Eastern Africa, Participatory Forest Management in Ethiopia, Practices and Experiences (2011)

### **Components of PFM design in Ethiopia**

#### **General Components of PFM Design in Ethiopia:**

There are some common features across the different PFM implementers when it comes to their strategies for PFM introduction and implementation. Firstly, the PFM idea is generally introduced by an external actor, such as an NGO or a local authority. Overall, the components of PFM are concentrated around: forest development management that can include plantation and reforestation or rehabilitation of degraded lands; forest protection and utilization; monitoring of the forest and evaluation of the management following [39]. Emphases on these different topics vary between the implementers and are often complemented by activities aimed to improve livelihoods. The common features across different PFM organizations when it comes to the activities introduced during the implementation of PFM are: - the introduction and creation of Forest Management Associations, Community Based Organizations or Cooperatives and transferring ownership of the forest to the involved community. The latter is a possible strategy in the scaling up program by MoARD as well. A management plan including outtake regulations is the second important part of the PFM implementation process. This is negotiated together with local authorities and communities. The preconditions for the negotiating parties can be unequal and emphasis needs to be put, not only on responsibilities, but on truthful knowledge sharing on communities' rights, benefits and possibilities. There are some activities and design components to PFM that are not as commonly implemented across the organizations. MoARD reports the prospect of developing NTFP opportunities and linkages to markets for these products during their scaling up project. One of the organizations that is not including features to improve livelihoods today mentions that some can be considered for introduction at a later stage.

**Impacts of Pfm to Community Livelihood:** Also [39] indicated that introducing PFM in communities adjacent to forests in general brings considerable changes. The utilization of forest products is usually restricted and quotas for extraction are lowered to ecologically sustainable levels. If the allowed utilization is enough to be socially sustainable is an important question. Positive impacts on communities' livelihoods after PFM introduction are reported from areas where PFM is being implemented, [39]. [17], also reported that PFM has an important role to play to improve the livelihood of poor rural communities. The impacts differ from place to place varying from a remarkable increase in living conditions, increased health, eradication of

malnutrition and some degree of increase in income. Other positive impacts reported are that the household resource in terms of NTFPs is secured legally. At some sites there has been an increase in the utilization of NTFP by the community following the introduction of PFM. Where as in some areas there are also improved marketing possibilities thanks to the PFM introduction. Coffee, honey and spices are said to offer any significant contribution to incomes and these products are not available in all areas.

As a result, communities feel encouraged to proceed with the PFM and their awareness and knowledge of forest value and user rights generally increase during the introduction process. Exchanging experiences with other PFM communities can also be an important component to provide input and ideas along the way to enable development of the PFM and encourage entrepreneurship which in turn can improve livelihoods further.

Mostly after PFM implementation there are reports from different organizations from the communities to protect their forests by following the resource use regulations, actively managing and patrolling the forest area.

**Alternative Income and Livelihood Sources:** While introducing PFM in an area where dependency on or utility of forest products is high, some organizations work hard to offer alternatives to reliance on forest products. This, in turn, is intended to give further incentives to PFM members, diversify and improve livelihoods as well as relieve pressure on the forest. Examples of additions or improvements to livelihoods introduced or promoted in PFM projects: Beekeeping; Nurseries; Fuel efficient stoves; Vegetable gardening; Agroforestry or orchards; NTFP development [39].

**Effects of PFM on Access to Livelihood Assets:** A number of studies have conducted in Ethiopia focusing on livelihood assets. PFM has improved the asset base of participant households. For instance, the average total livestock holding increased after PFM introduction [40]. Another study conducted in the Adaba Dodolla PFM project site also reported increase in livestock assets of project participant Households over time and this was attributed to better access to grazing within the forest.

**Natural Assets:** as [18], pointed that overall perceptions of PFM participants on access to both indicators (i.e. wood and NTFPs) were better than for non-PFM participants. The difference is interpreted as an increase in access to natural assets, caused by the implementation

of the co-management program, which provided free access rights to PFM participants to harvest forest products within their forest reserve, in line with their approved management plan Regulated forest product extraction for firewood, construction materials, farm implements, medicinal plants, forest coffee, honey and spices (especially *Aframomum corrorima* and *Piper capense*) had improved due to PFM implementation. In contrast, the non-participants had limited access to the forest products as the forest was still under state management. [42], also reported that PFM program provided a wide range of direct uses, including timber and non-timber forest products for PFM participant households as compared to non-PFM households living adjacent to the ArabukoSokoke forest in Kenya Similarly, [43] reported that decentralized forest management improved access rights to forest resources for villages under JFM program in Northwest Pakistan. And [44], also reported that community forests provided access to resources such as fuel wood, timber and non-timber forest products and fodder for rural households in Nepal. Moreover access to forest resources is the most critical asset that rural people need in order to build sustainable livelihoods as explained by [15].

**Physical Assets:** According to [18], PFM program on access to households fixed assets, durable assets and livestock ownership; shows that the difference between the PFM and Non PFM groups was not significant. But they judge the reason for this could be due to the short term period of the program implementation. Their report is also in line with Islam *et al.* [45] a project impact is time dependent and may take some years to generate sufficient income that would translate into improvement in physical assets. But [40] findings contradict other findings from Ethiopia which reported that total livestock holding increased from 3.9 before the introduction of PFM to 8.0 in Bonga PFM project in southwest Ethiopia after 5 years of project implementation. Also [14] found that PFM members had larger Livestock holdings than non-members in Adaba Dodola PFM site after 9 years of project implementation. In this case, the difference could be attributed to a decrease in the livestock assets of non-members as a result of restricted access to grazing and to an increase in the livestock assets of member households due to higher access to grazing.

**Financial Assets:** The introduction of PFM has facilitated participant households' access to financial asset, especially to market for NWFPs [18]. The interviewed

households stated that prior to joining the PFM program, they sold their coffee exclusively to local traders with low price at coffee harvesting time, but after PFM implementation they sold with better price due to marketing chain created with Oromia Coffee Farmers Cooperative Union, which plays a remarkable role in ensuring better income for the participants. The main sources of income were agriculture (crop and livestock production) and collection of NWFPs namely forest coffee; honey and spices played an important role in households' cash income in the study area. In some places the reliance on coffee for income generation is high, with proportions of up to 80 percent but whether this is an outcome from PFM implementation or was the state before remains unclear [39]. With respect to access to credit service, both PFM participants and non-participants obtained credit from different sources such as micro finance institutions, friends and relatives and local money lenders [18].

**Human Assets:** There was no remarkable difference in overall human assets between PFM participants and non-participants. However, a significant difference was revealed regarding access to 'knowledge and skills'. This is a direct result of PFM participants having attended various training sessions provided under the program [18]. These trainings aimed at improving participants' capacities in developing alternative income generating activities (e.g. tree nursery establishment, beekeeping, coffee processing, honey and species processing and marketing) and at raising participants' awareness of forestry issues (benefits of PFM, cooperative development, preparation of forest management plan, conflict resolution mechanisms). In addition, the project provided a number of experience sharing tours to several pioneer PFM pilot sites such as Bonga, Adaba-Dodola and Masha in order to enhance knowledge, skills and decision-making capacities of the participants. According to [39] during the process of introducing PFM some actors arrange exchange visits to earlier PFM projects and most actors have activities aimed at increasing awareness and educating the community about the forest. As a result, communities feel encouraged to proceed with the PFM and their awareness and knowledge of forest value and user rights generally increase during the introduction process. Exchanging experiences with other PFM communities can also be an important component to provide input and ideas along the way to enable development of the PFM and encourage entrepreneurship which in turn can improve livelihoods further.

**Social Assets:** According to [43] one of the main objectives of PFM is to develop positive relationship between the stakeholders, particularly the local communities and the state. (i.e. forest sector) to manage forest sustainably on the basis of friendly relationship and trust. There was a high level of trust and a good relationship between participants and their neighbors, local community leaders, development agents and forest department as compared to non-participant households [18]. Before the PFM program implementation, the government imposed rules, regulations and restrictions on forest use, which created mistrust, antagonism and conflict between local communities and the respective forest governing authorities. According to [18] the PFM scheme improved the level of trust and relationship between PFM participants and different stakeholders. On the contrary, non-participants showed low level of trust and relationship towards forestry sector. For instance [46] reported that PFM provides a new local institution that acts as a forum for community decision-making over forest resources and for implementing forest management activities. As [47] similarly indicated that decentralization of forest management opens channels for rural dwellers to communicate their priorities to government decision-makers, which in turn improves the relationship between local communities and the government.

## CONCLUSION AND RECOMMENDATION

**Conclusion:** Ethiopia has diverse vegetation resources that include high forests, woodlands, bush lands, plantations and trees outside forests. These vegetation resources largely contribute to the production, protection and conservation functions and play significant role in the national and local economy. These wide range of significance leads to decline of forest resources of the country both in size (deforestation) and quality (degradation). These issues and other reasons initiated different NGO's and local government to introduce PFM in Ethiopia around the mid-1990s as a new system of forest governance to provide local communities with social and economic benefits from the forests.

In Ethiopia pilots in PFM started in 1996 with support of GTZ in Adaba-Dodola and in Chilimo with support from Farm Africa. PFM was originally initiated with an emphasis on integrated development (land husbandry, alternative livelihoods etc.), but focus much more on increasing the value of the forest for local people through more secure access rights and supporting forest based

enterprises in PFM (albeit restricted to mainly Non Wood Forest Products due to current forest regulation restrictions). There are also various reasons for introducing PFM in Ethiopia. Environmental and social, valuable ecological and cultural and external pressures on forests as reason behind introducing PFM in Ethiopia. Different studies indicated that introducing PFM in communities adjacent to forests in general brings considerable changes and also has an important role to play to improve the livelihood of poor rural communities.

Generally the natural, physical, financial, human and social assets are the overall livelihood properties which show significant and slight difference between members of PFM and non-PFM in different parts of Ethiopia understood in the review.

**Recommendation:** Participatory Forest Management (PFM) scheme was introduced during the early 1990s by some NGOs in Ethiopia to reduce the mismanagement problem of the forests as one of the solution. After introducing PFM many changes were observed especially condition of the forests were improved and reduced the dependence of communities on forests for livelihoods. Overall, most of the studies revealed that there was only a slight improvement in financial and human assets of PFM participants of the livelihood assets, while natural and social assets showed a remarkable improvement. This review therefore suggests that further emphasis is needed to enhance the financial, physical and human capitals of the participants for sustainability and achieving its objectives.

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