



The Socio-economic Impact of Forest resources to the Local communities in Ethiopia: Review

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Abstract

Forests serve as a cornerstone of human livelihood and cultural heritage, particularly for rustic societies in unindustrialized countries. This review examines the multifaceted contributions of forests, specifically forest goods and services other than timber, to the life of non-urban people in Ethiopia. It highlights the critical role of forests in providing basic needs, generating income, and serving as a wellbeing for impoverished families, with over 1 billion of the globe's poorest relying on forestry assets. Despite their significant economic contributions, the value of forests in Ethiopia remains poorly documented due to limited data and inadequate market structures. This paper discusses the socio-economic benefits of forest for the rural community. It emphasizes the importance of NTFPs not only for enhancing household income but also for women's economic empowerment and poverty alleviation. By identifying and analyzing the socio-economic impacts of forest resources, this review underscores the need for effective policies and interventions aimed at sustainable forest management, which can increase the living of forestry-based populations while ensuring the ecological integrity of Ethiopia's forest ecosystems.

Keywords

Forest, Socioeconomic, Livelihood, NTFP, Ethiopia

1. Introduction

Forests have played a fundamental role in human history, serving as the backbone of numerous civilizations and significantly influencing societal development and economic stability. These intricate ecosystems furnish a diverse array of goods and services, including timber for construction, fuelwood for energy, and non-timber forest products like fruits, nuts, and medicinal plants, all of which have historically supported local and global economies. Beyond their economic contributions, forests provide essential ecosystem services such as carbon

sequestration, which helps mitigate climate change, water purification that maintains clean water supplies, and biodiversity preservation, crucial for ecosystem resilience. In recent decades, particularly over the last twenty years, there has been a marked increase in the recognition of the complex functions that forest ecosystems perform. This heightened awareness among researchers, policymakers, and conservationists underscores the urgency of adopting sustainable management practices. These practices aim not only to protect forest resources from degradation and deforestation but also to enhance their capacity to sustain both human populations and the environment. Through initiatives such as reforestation, agroforestry, and the promotion of sustainable harvesting techniques, we can ensure that forests continue to thrive and provide for future generations while supporting ecological balance and climate resilience ([Assessment, 2015](#); [O’Gorman, 2006](#); [Tittensor et al., 2014](#)). Forests play a crucial role in our society by providing safety nets, supporting household consumption, and helping to alleviate poverty. Approximately 1 billion of the 1.2 billion families facing extreme deprivation depend on forestry incomes to sustain their livelihoods. By recognizing and enhancing the value of forests, we can work together to improve the well-being of these families and promote sustainable development ([Chao, 2012](#); [Yali et al., 2017](#)). A significant portion of the rural population in developing countries relies heavily on natural resources for both consumption and non-consumption purposes. These resources, which include water, forests, and arable land, play a crucial role in the daily lives of these communities. For consumption, families depend on natural resources for food, drinking water, and shelter materials. Non-consumption purposes encompass various activities, such as using timber for construction, gathering medicinal plants for healthcare, and engaging in traditional crafts that contribute to local economies. The sustainability of these resources is vital, as many rural households face challenges such as environmental degradation, climate change, and market fluctuations that threaten their livelihoods and overall well-being. Consequently, understanding the interplay between natural resource management and community development is essential for promoting sustainable practices that support both economic growth and environmental preservation ([Gatiso & Wossen, 2015](#)). Income generated from environmental sources plays a vital role in sustaining rural livelihoods. In particular, products derived from forest ecosystems—such as timber, non-timber forest products (e.g., nuts, berries, medicinal herbs), and fuelwood—contribute significantly to the economic stability and well-being of rural households. These resources not only provide essential materials for daily living and shelter but also offer opportunities for local markets and small-scale enterprises. Additionally, the harvesting and sustainable management of these forest resources can enhance food security, support local culture, and foster community resilience against economic fluctuations ([Babulo et al., 2009](#)). The rural societies of Ethiopia rely significantly on forest resources for their livelihoods, with many households depending on these ecosystems for income, food security, and cultural identity. Forests provide a variety of essential products, including firewood, wild fruits, medicinal plants, and materials for construction and crafts. However, the increasing threats of deforestation, driven by agricultural expansion, logging, and unsustainable practices, pose a serious risk to this vital source of sustenance. These unsustainable practices not only jeopardize the environment but also diminish the cultural heritage associated with traditional forest management. As these communities face escalating challenges, finding a balance between resource use and conservation becomes crucial for their survival and the preservation of their way of life.

In developing nations, non-timber forest products (NTFPs) play a vital role in the economic stability and sustainability of rural communities. NTFPs encompass a wide array of goods extracted from forests and woodlands, specifically excluding timber. This diverse category

includes aromatic and medicinal plants that are often used in traditional healing practices, grazing materials that support livestock, and a variety of fruits, nuts, and vegetables that contribute to both subsistence and local markets. Additionally, fibers derived from plants are utilized for handicrafts and weaving, while resins are harvested for their applications in perfumes, incense, and traditional medicines. The collection and utilization of NTFPs not only provide essential resources for household consumption but also create opportunities for income generation, thereby fostering economic resilience in these regions ([Martínez de Arano et al., 2021](#)). Non-Timber Forest Products (NTFPs) play a crucial role in supporting households by fulfilling essential subsistence and consumption needs, including energy for cooking and heating, as well as nutritional supplements through various edible plants, fruits, nuts, and mushrooms. In addition to meeting these basic needs, NTFPs serve as a dependable source of income for families, enabling them to generate revenue through the sale of products like medicinal herbs, handicrafts, and wild game. This dual function not only enhances food security and energy access but also contributes to the economic resilience of communities, particularly in rural and forested areas where alternative income opportunities may be limited ([Shackleton et al., 2008](#); [Soe & Yeo-Chang, 2019](#)).

In Ethiopia's predominantly agrarian economy, the economic significance of trees and forests is profound yet woefully underappreciated. This oversight arises from a lack of reliable and comprehensive data, largely due to methodological challenges in accurately valuing environmental assets. Consequently, the true contributions of the forestry sector to the nation's economy are often underestimated. The total economic value of forests encompasses a rich array of both use values such as timber and various non-timber products like fruits, nuts, and medicinal plants as well as non-use values, which include vital components like biodiversity and essential ecosystem services that underpin the health of the environment. One of the primary reasons forest functions frequently remain unrecognized in economic decision-making is the prevalent undervaluation or complete disregard for many forest products and services. This dilemma is exacerbated by inefficiencies within markets and a pervasive information asymmetry that clouds stakeholders' understanding of the invaluable benefits that forests provide ([Babulo et al., 2009](#)). In developing countries such as Ethiopia, the rising demand for forest products has significantly enhanced rural livelihoods. This increase has also stimulated the growth of domestic markets, especially in urban centers where access to wood fuels and other forest resources is constrained ([Guta, 2014](#); [Mulenga et al., 2013](#)).

It is essential to understand the various ways forests support rural livelihoods and the sustainability challenges they face to develop effective policies and interventions. These initiatives should focus on improving the welfare of communities dependent on forests while ensuring the long-term health of Ethiopia's forest ecosystems. ([Mohammed et al., 2023](#)). Forest products, other than timber, play a vital role in boosting income and enhancing the livelihoods of rural women in Ethiopia. The revenue generated from gathering, processing, or selling these forest resources significantly contributes to household earnings ([Roba, 2020](#)).

In addition to supporting rural communities, non-timber forest products (NTFPs) play a vital role in alleviating poverty across both rural and urban areas. These products, which include items such as mushrooms, wild fruits, medicinal plants, and resins, provide essential income sources for many households. For rural communities, they often supplement traditional agricultural practices and can be harvested sustainably, ensuring a continuous supply without depleting forest resources. In urban areas, the trade of NTFPs can create economic opportunities, particularly among marginalized groups who may rely on these goods for their

livelihoods. By enhancing food security and promoting local economies, NTFPs not only improve the overall well-being of communities but also contribute to a larger framework of sustainable development and environmental conservation. The forest products market presents significant income-generating opportunities for rural communities through the collection and sale of goods, while simultaneously fulfilling the demands of urban markets. This dual benefit not only boosts local economies but also fosters sustainable practices in both rural and urban environments. Additionally, urban households gain access to affordable food and a stable energy source for cooking, further highlighting the economic and social significance of NTFPs ([Shackleton et al., 2024](#)). Experts widely acknowledge that high-value forest products, such as timber, medicinal plants, and specialty non-timber forest products, hold significant potential for poverty reduction. However, the poorest communities often face limited access to these valuable resources ([Dewi et al., 2005](#); [Wang et al., 2023](#)). To bridge this gap, it is crucial to address the socioeconomic and political barriers that restrict access, including securing land and resource rights and promoting equitable distribution strategies that empower marginalized households ([Bryan et al., 2024](#)). An inclusive approach to forest resource management can enhance the livelihoods of the most disadvantaged populations and enable them to benefit from sustainable economic opportunities ([Bhushan et al., 2024](#)). In Ethiopia, there is an opportunity to enhance the dissemination of information regarding the socioeconomic role of forest resources in supporting rural livelihoods. By fostering more comprehensive and coordinated efforts, we can better educate communities about the valuable benefits forests provide and promote sustainable practices that strengthen these livelihoods ([Abate et al., 2016](#); [Tegebu et al., 2009](#)). This review, therefore, aims to identify and analyze the contributions of forest resources to rural livelihoods in the country

2. Methodology

This paper focuses on critical review. A critical review analyzes written documents on a topic, identifying weaknesses, illogicalities, and inconsistencies. Unlike a synthesis review, it evaluates each work against specific criteria without directly comparing them ([Wright & Michailova, 2022](#)). Critical reviews can be categorized as either selective or representative; however, they often lack a thorough examination of the full range of relevant literature available. A critical review may outline the methodology used during the review process, including the selection criteria and the analytical framework applied. It is important to note, though, that these reviews frequently fall short in evaluating the quality of the studies they include. This limitation becomes particularly evident when dealing with qualitative research, as there is no universally accepted hierarchy of study designs to guide these evaluations. As a result, this oversight can lead to a distorted understanding of the evidence because the nuances and complexities inherent in qualitative findings may not be fully considered.

3. Result and discussion

3.1 *Forest as source of in Income and Poverty Reduction*

The economic contribution of forests is multifaceted, encompassing both cash income and subsistence income, which together play a crucial role in sustaining livelihoods. Furthermore, forest income significantly aids in reducing economic inequality within affected communities. Approximately 300 million individuals inhabit regions adjacent to dense forests, with many relying on these vital ecosystems for their daily sustenance and economic stability. These forests provide essential resources such as timber, non-timber forest products, and various ecosystem services, which are integral to the local and global economy. Enhancing our

understanding of these dynamics can lead to more effective policies that protect these natural resources while fostering equitable economic development ([Chao, 2012](#); [Wassie, 2020](#)). In the remote rural regions of unindustrialized nations, many native societies continue to live without access to modern amenities and economic opportunities. In these vibrant yet challenging environments, the utilization of forest resources plays a pivotal role in sustaining their daily lives. The rich biodiversity of the forests provides not only essential materials for shelter and tools but also becomes a crucial source of cash income that supports households. For these communities, the forest is not just a backdrop; it is a lifeline that nourishes both their bodies and their economies, weaving together tradition and survival in a delicate balance ([Fekadu et al., 2021](#); [Rabbi et al., 2010](#)).

In Northern Ethiopia, the income generated from forest environmental resources is a vital source of livelihood for many households, accounting for an impressive 30% of the average total income, making it the second largest contributor after crop income, which constitutes around 50%. This diverse income stream, which includes revenue from activities such as gathering timber, harvesting non-timber forest products, and eco-tourism, plays a significant role in enhancing financial stability for families. By providing alternative sources of income, it helps to mitigate the risks associated with crop failures or fluctuating market prices, thus alleviating rural poverty. Furthermore, the equitable distribution of these forest resources contributes to a more balanced income structure within the community, fostering greater economic resilience and promoting social cohesion among residents ([Babulo et al., 2009](#)). The RTHD's forest-based activities contribute to the annual income of 89.8% of the households surveyed. The mean yearly income generated from forest resources per household stands at CDF 1,219,951.60, constituting a substantial 32.46% of total annual household income. This underscores a critical dependence on income derived from forests. Agriculture remains the primary source, with an average annual household income of CDF 1,746,024.19, but forest revenue follows closely as the second most vital source, contributing an impressive 37% to total household income. This highlights the essential role of forests in sustaining livelihoods and underscores the need for their preservation ([Richard K Mendako et al., 2022](#)).

While there is a growing body of empirical research examining the economic contributions of environmental resources to rural livelihoods in Ethiopia, it is crucial to underscore the indispensable role that forest resources play in fulfilling the basic needs of these communities. Forests offer a diverse array of benefits, extending beyond just timber to include a wide range of non-timber forest products (NTFPs). These NTFPs encompass fruits such as guava, mango, and wild berries, nuts like shea and cashew, and various medicinal plants that are integral to traditional healing practices. Additionally, wild honey harvested from the hives in forested areas serves not only as a nutritious food source but also as a source of supplementary income for many families. The availability and accessibility of these resources are essential for enhancing food security, promoting nutritional diversity, and generating income, ultimately contributing to the resilience and sustainability of rural livelihoods in Ethiopia.

Local populations often access these resources through the informal sector, where they engage in harvesting and trading products, creating vital economic opportunities. Moreover, sustainable management of forest resources is crucial for poverty reduction strategies, as these resources help enhance resilience, improve nutrition, and provide employment opportunities. Recognizing and valuing the contributions of forest ecosystems is essential for promoting sustainable development and improving the livelihoods of rural residents in Ethiopia ([Suleiman et al., 2017](#)).

3.1.1 Forest as a means of poverty reduction

Ethiopian forests are vital for poverty alleviation as they offer local communities access to a variety of non-timber forest products, including firewood, construction materials, honey, and various wild foods. These resources not only provide essential daily needs but also serve as important economic assets. For families residing near forested areas, the reliable income generated from the sustainable harvesting of these products can significantly boost their financial stability ([Chama et al., 2023](#)).

For instance, firewood is a main energy source for food preparation and heating, while building materials aid in home construction and repairs, contributing to improved living conditions. Additionally, honey production can create opportunities for small-scale entrepreneurship, tapping into local and even international markets. The availability of wild foods, such as fruits, nuts, and greens, further enhances dietary diversity and can be sold for extra income.

Diversifying their income streams through these forest products allows communities to better withstand economic shocks and disruptions. During times of hardship, such as illness or crop failure, these natural resources act as a crucial safety net, promoting resilience and supporting the overall well-being of households. Overall, the sustainable management of Ethiopia's forests is essential not only for environmental health but also for empowering local communities economically ([Tesfaye et al., 2010](#)). A large share of individuals residing near forests in developing countries struggle with poverty, often living below the poverty line ([Shepherd, 2012](#)). Forest products, including gum, resin, firewood, charcoal, and various building materials, represent vital revenue sources for Ethiopia's economy. The country is particularly renowned for its high-quality frankincense and myrrh, which are harvested from indigenous trees and have significant export potential. Additionally, firewood and charcoal continue to be primary energy sources for many households, especially in rural areas, contributing not only to local economies but also highlighting the need for sustainable management practices. Building materials, such as timber and bamboo, are essential for construction and infrastructure development, providing jobs and supporting local artisans. The sustainable utilization of these forest products is crucial for ensuring long-term economic growth while preserving Ethiopia's rich biodiversity ([Fikir et al., 2016](#); [Worku et al., 2014](#)). In fact, an astonishing 93% of the energy consumed by households is sourced from forest biomass. This highlights the critical importance of sustainable forestry in meeting our energy needs ([Alem et al., 2010](#)). The diverse range of forest products, including fruits, nuts, herbal medicines, and timber, plays a crucial role in supporting the livelihoods of households. These resources not only meet essential subsistence needs such as food and shelter but also generate cash income through local and regional markets. By harvesting and sustainably managing these products, families can bolster their economic resilience, improve their quality of life, and promote sustainable practices that benefit both the community and the environment ([Abtew et al., 2014](#); [Fikir et al., 2016](#)).

[Melaku et al. \(2014\)](#), explored the positive impact of non-timber forest products (NTFPs) on household incomes in the Bonga forest area of southwestern Ethiopia. Their research highlights the significant role that rural communities in this region play in utilizing a diverse array of forest products. NTFPs such as forest coffee, honey, spices, medicinal and edible plants, bamboo, fuel wood, and charcoal, as well as household utensils and farm implements, are essential to their livelihoods. Households benefit from these products not only as vital income sources but also for personal use. The study found that forest coffee, honey, and spices stand out as key income generators, while fuelwood, charcoal, household utensils, farm implements, and medicinal and edible plants are primarily consumed at home. This underscores the importance of sustainable forest management practices that can enhance both the economic well-being and food security of these communities.

Research demonstrates that in Northern Ethiopia, income derived from forest-related sources is the second largest contributor to a typical household's overall income, following crop

income. This valuable source of revenue plays a crucial role in alleviating rural poverty and promoting greater income equality, highlighting the importance of sustainable forest management in enhancing the livelihoods of local communities ([Ali et al., 2020](#); [Babulo et al., 2009](#); [Richard K. Mendako et al., 2022](#)). Research indicates that income derived from forest resources accounts for roughly 32% to 33% of total household earnings, with wood fuel being the primary contributor ([Mulenga et al., 2012](#)). To address the risks linked to the unsustainable use of these resources, some scholars have proposed management strategies that balance the conservation of natural resources with the livelihood and financial stability of rural communities ([Mendako, 2016](#)).

3.2 Significance of NTFPs for Rural Women

Women often encounter significant challenges that can limit their participation in economic activities. In rural areas, many women dedicate their time to caring for their families, including their husbands, children, and elders. This nurturing role can lead to economic dependence and vulnerability, as well as gaps in education and political and social engagement. Addressing these issues presents an opportunity for positive change. Women tend to experience higher unemployment rates than men, with global estimates indicating a 6.4% unemployment rate for women, while men have a rate of 5.7%. Nonetheless, these statistics probably underestimate the extent of underemployment, unemployment, and the number of 'discouraged' job seekers in countries with substantial informal economies ([Kabeer, 2009](#)). By empowering women and reducing the social, cultural, political, and economic barriers they face, we can foster a more equitable and prosperous society. Women, often among the most disadvantaged, play a crucial role in driving economic development. Recognizing and investing in their potential is essential for alleviating poverty and promoting rural development. Thus, focusing on the economic empowerment of women can catalyze significant progress for communities and society as a whole.

Non-Timber Forest Products (NTFPs) are highly significant for rural women as they often serve as a primary source of income, food security, and economic empowerment, particularly in areas where other livelihood options are limited, allowing them to contribute meaningfully to their household economies and have greater control over their finances; this is often due to the fact that women are traditionally responsible for collecting many NTFPs like fruits, vegetables, and medicinal plants which are readily available in their surrounding forests ([Kassa & Yigezu, 2015](#)).

Economic empowerment plays a crucial role in improving women's access to a wide array of economic resources and opportunities. This includes securing stable employment, utilizing financial services such as banking and credit, acquiring property, and obtaining other productive assets. Additionally, it encompasses skills development programs that equip women with the necessary training and knowledge to thrive in various industries, as well as access to comprehensive market information that helps them make informed decisions and capitalize on economic opportunities. By fostering an environment that promotes these elements, economic empowerment significantly contributes to reducing gender disparities and enhancing the overall well-being of women in society ([Kabeer, 2009](#)). Enhancing women's right to use to resources will not only automatically lead to empowerment. Experience shows that improving women's access to land, jobs, credit, and similar resources can sometimes be done in ways that are demeaning and exploitative, failing to challenge their subordinate status at home. Women are attracted to non-timber forest products (NTFP) activities because they have minimal technical and financial entry barriers, resources are readily available, and they can generate immediate income when needed ([Kassa & Yigezu, 2015](#); [Thapa & Singh, 2021](#)). By gathering

NTFPs from the forest, women are essential for fulfilling their families' basic needs and enhancing their household income. Essentially, the earnings from NTFP activities greatly enhance their families' purchasing ability (Kassa, 2015). Empowering women in the forest sector opens up valuable development opportunities and brings substantial benefits to their families and communities. This approach not only enhances individual livelihoods but also fosters stronger, more sustainable communities as a whole (Shackleton et al., 2011).

4. Conclusion

In summary, forests are crucial in shaping the economic landscape and enhancing the livelihoods of rural communities in Ethiopia. The significant dependence on forest resources for income, nutrition, and cultural traditions highlights the importance of recognizing and improving the socio-economic value of these ecosystems. Non-timber forest products (NTFPs) play a particularly key role in this regard, providing household income and creating economic opportunities, especially for women who often encounter systemic barriers to engaging in economic activities. To strengthen the role of forests, it is vital to establish inclusive policies that tackle economic disparities and protect the rights of marginalized communities to access forest resources. By promoting sustainable management practices and facilitating market access for higher-value forest products, stakeholders can effectively reduce poverty and improve the resilience of rural populations. A comprehensive approach that integrates environmental sustainability with socio-economic development is essential for the welfare of forest-dependent communities and the conservation of Ethiopia's valuable forest ecosystems.

Conflict of Interest

The author declares that there is no conflict of interest.

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