

Report

Gender and Forest, Trees and Agroforestry Value Chains in Latin America

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Introduction

As past research, development, and policy initiatives have demonstrated, careful consideration of gender and social differentiation is critical for sustainable forest development. A gender perspective in forestry research and development interventions demonstrates that men and women experience differential access to and benefits from forest resources and correspondingly, they value their forest resources differently, as well (Stloukal et al., 2013; Voudouhe, 2009). Attention to gender aspects promotes increased efficiency in forest management, equitable distribution of benefits, and improved policy implementation. Furthermore, policy and planning processes that are gender-blind, or that do not take into account gender considerations, can unintentionally harm or disadvantage women (Kabeer and Subrahmanian, 1996). For these reasons, analysis of gender roles and relations as they relate to forest use and benefits is important for the creation of interventions and policies that promote sustainable resource management, livelihood security and improved well-being.

A focus on value chains in gender analyses of forest livelihood strategies can help illuminate key gender considerations for development interventions and policy initiatives. For example, forest, trees and agroforestry (FTA) value chain research demonstrates that significant differences exist in men's and women's chain participation (Haverhals et al., 2014). In general, women carry out subordinate or less visible activities in FTA chains in relation to men; they are furthermore limited in decision-making on forest resource management (Shackleton et al, 2011; Coles and Mitchell, 2011; Sunderland et al., 2014). In comparison to women, men tend to be engaged more predominantly in high value trade.

The present literature review provides a map of the studies carried out related to gender and FTA value chains in Latin America over the past 15 years. It has been noted that there exists limited research on gender and forestry in the Amazon and in Latin America in comparison to other regions (Schmink and García, 2015; Mai et al., 2011; Haverhals et al., 2014). For example, Schmink and García's review (2015) of gender and forestry in the Amazon indicates that there lacks thorough research on the varied gender relations present in the Amazon and correspondingly, on how these relations influence forest management. Many forest management projects focus on technology and male end-users to the detriment of agroforestry and non-timber forest product initiatives, to which women contribute significantly. A cross-regional review of gender and forestry furthermore highlights that little research exists on Latin America in comparison to Africa and to Asia, despite the fact that the greatest forested

areas exist in the Latin American region (Mai et al., 2011). Because of the regional research gap, important forestry research opportunities in Latin America on themes such as community forest enterprises and land tenure decentralization may be neglected. In response to this knowledge gap, the present literature review focuses on Latin America to develop and prioritize suggestions for future research.

The objective of the review is to understand and analyze the roles that men and women play in FTA value chains and the nature of those roles. Correspondingly, after explaining the methodology, the review focuses on the following question: how does gender influence benefits derived from participation in FTA value chains? This includes subsections addressing: men’s and women’s roles in FTA value chains; the benefits men and women receive from their participation in FTA value chains; and the factors that influence the benefits that men and women experience. The following section addresses how collective group participation affects women’s roles in FTA value chains. The final section presents conclusions from the literature review.

Methodology

An extensive search including six databases was carried out in order to identify relevant publications for the literature review. These databases were Google Scholar, AGRIS FAO, Science Direct, Red de Revistas Científicas de América Latina y el Caribe (Redalyc), Jstor, and the Latin American Network Information Clearinghouse (LANIC). The review includes primarily peer-reviewed publications as well as grey literature from major agricultural, forestry and environmental research centers and universities. Due to the researchers’ language limitations, the search was restricted to English and Spanish publications. Also, the review was limited to publications from 2000 to 2015. The key search terms used are listed below. A global literature review of gender and FTA value chains carried out by the International Center for Forestry Research (CIFOR) was also consulted to develop the sets of search terms used. Terms from Group1 were combined with terms from Groups 2 and/or 3.

Table 1.		
Group 1: Gender	Group 2: Value chains	Group 3: FTA
Gender, género, women, mujeres, role of women, participación de mujeres	Value chains, cadenas de valor, supply chains, Global value chains	Agroforestry, agroforestería, forest, bosques, café, agroforestales, trees, árboles de alto valor, productos forestales

The CGIAR Gender and Agricultural Network listserv and the CIFOR website were also taken into account in order to identify relevant literature. Additionally, where access to the publications was possible, bibliographies from the materials found were followed to identify additional pertinent publications. This led to a total of 16 publications being included in the review.

A large part of the literature found, nine articles total, is sub-region or country-specific: three on Bolivia; two on Brazil; two on Ecuador; one on Mexico; one focusing on Peru and Brazil; and one on the Amazon. Seven articles were also included which consist of cross-regional studies or reviews, including Africa, Asia, and Latin America. These were included due to the valuable information they provided regarding characteristics specific to FTA value chains and gender in Latin America, through the cross-regional analyses. The majority of the literature found falls between the years of 2002 and 2010.

Influence of gender on benefits derived from participation in FTA value chains:

Men's and women's roles

Three principal observations emerge from the literature reviewed regarding men's and women's roles in FTA value chains in Latin America. These are: the significance of both men's and women's contributions; women's concentration in non-commercial processes; and the invisibilization of women's work.

Contributions of both men and women

A cross-regional study carried out by Sunderland et al. (2014) suggests that in Latin America, both men and women are significantly involved in forest product collection activities for the household economy, men even more so than women. This contradicts popularly held assumptions regarding gendered household division of labor, which places women in activities like forest production collection for household subsistence and men more so in cash crop agriculture and high value tree crop commercialization. Men contribute more than women to household income of both unprocessed and processed forest products. The latter was true across Latin American, Asian, and African regions; however, for unprocessed products the difference in men's contributions over that of women's was more striking for Latin America in comparison to the other regions. For example, men dominated over women in the collection of unprocessed product categories such as structural and fiber; medicines, resins, and dyes; food products from animals; and fodder and manure. Women dominated over men only in the unprocessed product category of food from plants and mushrooms. Men contributed more significantly than women to fuelwood collection, also in contrast with trends found in the other regions. While men contributed to forest production collection for both subsistence use and sales, the study observed specialization of men in cash products in particular, for the Latin American as well as Asian regions.

Concentration of women's participation in nodes prior to sales

This last observation is particularly critical for the character of men's and women's participation in FTA value chains in Latin America: while men may contribute more significantly to products for sales, women contribute to products for subsistence use and participate less in commercialization processes. For example, men are principally involved in timber extraction for commercial markets. A trend has also developed wherein men participate increasingly in the various stages of high value mushroom value chains, while women remain more principally in value chains for lower value varieties, used for household consumption or for sales in local markets (IFAD, 2008). In general, women are involved in mushroom collection, the lowest valued task in the chain, and men carry out higher value activities. For example, in a case of an indigenous community in Mexico, women and men are involved in value chains for 1) fresh local market mushrooms, 2) dried mushrooms for cities and supermarkets, and 3) high value for export to

Japan; women are more extensively involved in the local market value chain, contributing to collection as well as transport and marketing.

Other cases further demonstrate women's concentration in nodes of the value chain prior to sales and commercialization processes. Women and men both participate in collection and transformation stages of FTA value chains, but women's participation levels decrease considerably in the stage of sales of processed products. For example, a study of cocoa agroforestry in Ecuador notes that women and men participate in all stages of sowing, maintenance, and harvest, while men particularly dominate post-harvest activities; women help in these latter activities, but their contributions are often disregarded (Blare and Useche, 2015). Research on organic coffee producers in Chiapas, Mexico, similarly observes that women participate in productive processes, including nursery, harvesting, and processing and milling activities; women usually do not participate in negotiating product sales (Jazibi Cárcamo et al., 2010). These observations regarding the mushroom, cacao and coffee value chains are supported by a global literature review carried out by Haverhals et al. (2014), which identified a trend of men's increased involvement in a value chain as the product's value increased, and their significant participation in commercialization stages. Correspondingly, a global review by IFAD (2008) notes that men are largely members of producer organizations and women minimally, allowing men greater opportunity to participate in decision-making on product commercialization.

Invisibilization of women's work

Another trend particular to women's role in FTA value chains is its "invisibilization," due to its relation with household work and its minimal contribution to commercialization. Certain collection and processing activities of FTA value chains can be carried out near the home or in conjunction with household responsibilities, making them particularly accessible to women. For example, Schmink and García (2015) note that women in the Amazon region are more involved in Brazil nut production as a livelihood activity in comparison to timber extraction; the latter requires greater displacement from the home, and it more commonly pertains to men.

Despite their contributions to collection and processing activities, women's roles are often disregarded and undervalued. For example, although non-timber extractive activities like rubber tapping is considered as largely masculine work, research by Kainer and Duryea in the Western Brazilian Amazon (1999, cited in Schmink and García (2015)) noted women's significant involvement: over half had cut and collected rubber at one point, and over three-quarters regularly collected latex tapped by men. Similarly, women's contributions to organic coffee production in Chiapas may be disregarded under the presumption that coffee cultivation is men's work despite women's comparable participation in production in comparison to men: women were seen to work in the coffee fields on average three months per year, three days per week, while men worked three months per year, 6 days per week (Jazibi Cárcamo et al., 2010). In addition to cultivation activities, women were responsible for food preparation for the other field workers. These trends hint at the importance of certain gender ideologies, which will be discussed more in a later subsection.

Peri-urban FTA value chain activities can complement women's household and childcare responsibilities, as well, although these also tend to be undervalued. For instance, in Pando, Bolivia, Brazil nut processing factories in large towns substantially employ women (Stoian, 2005). In fact, a trend has developed wherein men spouses migrate to rural areas to engage in extractive activities like Brazil nut collection, while women remain in the peri-urban areas in order to enable children's continued schooling and their own work in the factories. Women are often paid piecemeal, and the wage tends to be low.

Influence of gender on benefits derived from participation in FTA value chains: Remunerative and non-remunerative benefits

The previous discussion of the roles of men and women in FTA value chains and their nature leads to a review of how men and women benefit from their roles in the chain. How does gender influence return on labor? In general, men are seen to benefit more significantly in remunerative terms than women from their role in FTA value chains. Men tend to be involved more than women in value chains as these become increasingly commercialized. Sunderland et al.'s cross-regional study (2014) found that most forest products are used for household consumption rather than for sale; as a result, men's contributions of forest products to the household economy were more for subsistence use than for cash income, across regions. Although this demonstrates that men play a significant role in non-remunerative forest product economic activities, it is important to note that they participate in forest product collection for sale more significantly than women, cross-regionally. In Latin America and Asia, men are particularly specialized in forest product collection for sale. Furthermore, the study notes that Latin America's greater market integration, in comparison to the other regions, might influence men's greater involvement in forest product activities over women, especially in comparison to Africa and Asia.

Specific cases from Latin America corroborate the trend of men's greater remunerative benefits over women from their participation in FTA value chains. Schminck and García's literature review of gender and forestry in Amazonia notes that men tended to control cash income from rubber tapping and from Brazil nut collection more than women (2015: 9). Potón Cevallos (2006) further discusses that even when women cocoa producers in Ecuador do participate in sales, they tend to be paid a lower price than that given to men. Research on women's and men's participation in Brazil nut production in Pando, Bolivia, also suggests a lower valuing of women's work: as mentioned previously, women employed in Brazil nut processing factories were commonly paid low wages; often the tendency for factories to hire women more than men was due to the possibility to hire women piecemeal and pay less (Stoian, 2005).

Exceptions to this trend do exist, in particular when women are able to participate as members of producer organizations. A study by Jazibi Cárcamo et al. (2010) of men's and women's participation in an organic coffee producer organization in Chiapas highlights that women who were organization members experienced greater benefits, remunerative and non-remunerative, from their participation in coffee production than women who were spouses of producers. For example, the former were able to participate more in male dominated activities, like sales negotiations. This study will be discussed more in detail in section three.

Influence of gender on benefits derived from participation in FTA value chains: Factors

The primary factors that emerge from the literature that influence how men and women benefit from their participation in FTA value chains are related to access to land and access to credit and capital. The sex division of labor and gender ideology are also important influences to take into account.

Access to land

The issue of communally owned land is particularly relevant to discussions of gendered resource control and productive roles in the Latin American region. Approximately 25% of forested lands are communally owned in Latin America; this contrasts substantially with the global trend of 9% of forested land under communal tenure (Sunderlin et al., 2008; Larson et al., 2010, cited in Vázquez García, 2013). Although communal property rights might be more prevalent in Latin America than in other parts of the world, such regimes do not guarantee women's and men's equal control of land in practice (Vázquez García, 2013; Schmink and García, 2015). Often communally titled land is controlled by the state and women's access is limited (Vázquez García, 2013). In general, women living in communally owned territory may experience a certain lack of clarity regarding their land rights. Intra-household gender relations can disadvantage women with regards to access to land and other major assets (Schmink and García, 2015).

Furthermore, individual property rights regimes demonstrate a negative bias towards women. Men are more commonly property holders than women, and at the time of couples' separation, women are often left landless (Schmink and García, 2015). In general, there exists a persistent gender inequality in land ownership, due to male preference for inheritance and marriage privileges. Land markets and state land distribution programs also demonstrate gender biases that favor men over women.

Land access can be a key factor influencing the nature of men's and women's participation in FTA value chains. Although empirical research on this issue is lacking, women's lack of formal land access inhibits them from participating in critical decision-making spaces on production activities, including commercialization processes. This correspondingly excludes them from sales negotiations. Jazibi Cárcamo et al.'s (2010) research on an organic coffee producer organization in Chiapas notes that coffee land title ownership was a requirement for organization membership; women who were members experienced more significant monetary benefits and recognition for their work as producers, in comparison to women producers who were not. Women members could participate directly in decision-making on coffee sales and the commercialization processes, as well.

Access to credit and capital

Access to credit and capital importantly influences the development of gendered livelihood strategies based on FTA value chains. A lack of access to credit and capital can hinder the expansion of FTA value chains in which women contribute significantly; households furthermore may prefer to invest in productive activities that are more lucrative. These often tend to be more male dominated, as well. Research in the Western Amazon in Peru demonstrates the significance of capital and credit for the development of sustainable forest development strategies that are gender inclusive. For example, livelihood optimization modeling based on information from communities in the Madre de Dios region of Peru suggests that the most efficient use of capital at current conditions was through expansion of timber

extraction or livestock production, both economic activities in which men dominate over women (Campbell et al., 2005). Brazil nut production, an activity that involves women more significantly, became more feasible with increased access to credit, although it would still remain inferior economically to timber extraction. An additional limitation to the development of Brazil nut production was male labor input; Brazil nut collection requires male labor, and for this reason production cannot expand through women's contributions alone.

The significance of credit access to FTA livelihood strategies can depend varyingly on socio-economic class and age, in addition to gender. Campbell et al.'s research (2005) in Acre, Brazil, found that those women who most significantly took advantage of agroforestry credit lines targeting women were more educated, younger, and had an additional source of cash. Credit access in this case influenced the increased participation of certain social groups over others.

Sex division of labor and gender ideology

The sex division of labor and corresponding gender ideologies critically influence the nature of men's and women's roles in FTA value chains. Many Latin American societies associate women's activities with spaces near the home while timber activities are associated with men (Bolaños and Schmink, 2005; Schmink and García, 2015). In practice, women tend to work significantly in home and swidden gardens where they may carry out various activities related to livestock, agroforestry and NTFPs. In comparison, work carried out primarily by men tends to be hunting, as well as agricultural clearing and logging for commercial purposes. The range of women's work activities may be more constrained in non-indigenous communities, and men tend to predominate agriculture in these cases. As mentioned previously, in Latin America and cross-regionally, men's activities target commercial markets, whereas women's tend to be more small-scale and non-commercial. Although women's activities may have low market value, they are often an important mainstay for household survival; for example, women's domestic economic activities have been critical for Amazonian rubber tapping communities in times of rubber price drops (Schmink and García, 2015).

The division of labor can influence specializations in men's and women's knowledge, as well as variations in their value of ecosystem services. For example, in a study carried out in Pará state in the Brazilian Amazon women reported twice as many NTFPs as men; furthermore, men were more likely to name timber products as the most important forest products, whereas women tended to report a larger variety of products including those used for nutrition, cultural purposes, and medicine (Shanley et al. 2011, 239, cited in Schmink and García, 2015). Similarly, another study in the Bolivian Amazon found that men knew of significantly more timber species in comparison to women (Vazquez 2013, 16, cited in Schmink and García, 2015). Blare and Useche's (2015) research of men and women cocoa agroforestry producers suggests that women might value the non-monetary benefits of cocoa agroforestry, such as those related to organic material, biodiversity, and subsistence crops, more than men.

Despite the existing sex division of labor in Latin American societies, women participate significantly in extractive and agricultural activities; however, they may often be disregarded due in part to gender ideologies. For example, Hecht (2007) notes that in a forest reserve in Acre, Brazil, men contribute 52%

and women and children contribute 48% of the labor for collection, processing and transport activities for rubber tapping. Also, men represent 51% of the labor used for processing and transport for Brazil nut production, while women and children contribute 12 and 37%, respectively. Nonetheless, gender ideologies construe forest production activities such as rubber tapping as purely masculine and consequently, women's contributions can be invisibilized (Schmink and García, 2015; Hecht, 2007). For instance, public statistics on Brazil nut production in the Western Amazon in Brazil does not take into account women producers' participation. In general, the belief that the forest is an overly dangerous and harsh space for women can predominate among Latin American communities.

Such gender ideologies can influence women's exclusion from decision-making on forest management, which can affect decisions on capital and other productive resources necessary for women's FTA value chain activities. In rubber tapping communities in Amazonia, community representation in public decision-making, for example in rural unions, is commonly regarded as men's responsibility (Schmink and García, 2015). Among indigenous groups and other communities in Eastern Brazil generally forest management decision-making is also considered men's role, to the exclusion of women. Bolaños and Schmink's (2005) research on men's and women's roles and perceptions of a community forest management project with *campesino* groups in the department of Beni, Bolivia, demonstrates that men preferred that women contribute to the project in indirect and non-managerial ways, for example through food provision to workers and by encouraging others to participate; it was more appropriate for men to be involved directly in the project and carry out related decision-making. As the project progressed, women's responses agreed more with those of men's, regarding their preferred roles in the project, as well. Their husbands' opinions were a most likely influence on this development. In this way, the case demonstrates the consequence of gender ideologies that associate public, decision-making spaces and the forest with men and domestic responsibilities and the home with women.

Similarly, Cronkleton's (2005) research on a community forest management project in Pando, Bolivia, demonstrates the tendency to exclude women from forest management and the consequences it can have for men's and women's FTA production activities. Following norms on community gender roles, it developed that the project's participants were largely men. More diverse community participation developed through activities specifically targeting women and youth. The exercises helped identify women community members' interest in using income generated from the forest management project for investment in their artisanry production. Without access to such decision-making spaces, women can be excluded from decision-making regarding capital and other productive resources necessary for the development of productive activities in which they are involved. Furthermore, access to public decision-making realms allow greater opportunity for recognition of their productive FTA work.

Women's Collective Participation and Their Roles in FTA Value Chains

As alluded to previously, exclusion from forest resource management groups can effectively inhibit women's benefits in remunerative terms from the participation in FTA value chains. This trend might be most significant in Latin America. Sunderland et al.'s (2014) cross-regional research demonstrates that men participate more than women in forest user groups across Africa, Asia, and Latin America; however,

this tendency is more substantial where there is product commercialization. Correspondingly, the Latin American region had the lowest participation of women in forest user groups.

Despite this regional trend, cases of women's participation in production organizations in Latin American countries exist. These suggest that participation in producer organizations influence change gender relations such that women's decision-making power is enhanced and their productive work is better recognized. For example, a case of a river community in Pará, Brazil, that mobilized to strengthen its position in the açai market had significant women's participation (Schmink and García, 2015). The organizing group helped train members in improved açai management practices and achieved certification. The participating women formed their own women's association, as well, and some have achieved positions in a local rural union.

Another case of an organic coffee producer organization in Chiapas demonstrates the enhanced remunerative and non-remunerative benefits women can experience through their participation (Jazibi Cárcamo et al., 2010). A study of women members and wives of members found that both groups participate, either directly or indirectly, in coffee production processes; however, only members' contributions are recognized and remunerated, whereas the wives' work is regarded as supplementary help and not remunerated. It is important to note that members' wives are able to participate in organization meetings, although they are unable to vote. Furthermore, the study highlighted that women members experience significantly greater economic benefits than the wives of members; they also experience greater acquisition of new knowledge and enhanced self-esteem, but not to as significant an extent. For example, substantially greater members as opposed to wives experienced an improved quality of life and capability to resolve economic problems. Differences in new knowledge acquisition were not as great, most likely due in part to the fact that wives are able to participate in organization trainings. Women members also reported developing greater friendships, and feeling less alone and more productive.

Research on women-specific producer organizations demonstrates similarly the combination of enhanced remunerative and non-remunerative benefits gained from participation in producer groups, in addition to an enhanced capacity to have a stronger market position. A study in Brazil focused on the Amazon Rural Women's Microenterprise Network, which includes 150 women's collective microenterprises, based primarily on NTFP use for the production of artisanry, jellies, cosmetics, medicines, and other products (Mello, 2014). The majority of the groups had been able to form through the women's own start-up capital and NGO support in the form of trainings. The research highlights particularly the enhanced empowerment women experience from their participation in the groups, not just in economic terms but also with regards to political and social ambitions. For example, women were able to use their participation in the groups to advance environmental goals; they also were able to gain greater access to decision making spaces in their communities and to household and communal resources. Women leaders in the Network also reported experiencing relational changes through the trainings the microenterprises provided.

Conclusions

The results of the literature review demonstrate that women may often find themselves at a disadvantage in comparison to men within FTA value chains in Latin America. This can be due to their limited access and rights to land and forest resources and their exclusion from decision-making at household and community levels. In general, gender ideologies and the sex division of labor that regard women's place as in the home, tending to family daily needs and men's role as in the forest and tending to market activities tend to predominate in Latin American societies. Consequently, this influences women's concentration in stages of value chains prior to sales and the non-remuneration of their work, in comparison to men.

Despite this tendency, it is important to highlight that women in the research on FTA value chains act as protagonists, for example as producers and organization members. When mapping the diversity of FTA value chains, the large presence of women's qualified labor comes to the forefront (Mendoza, 2006). Women furthermore demonstrate their capacity to overcome major cultural and logistical barriers to find means to increase their participation in family production and in key decisions on forest resource use. They also organize themselves in favor of their interests and those of their communities, through their varied participation in social movements taking place throughout the Latin American region.

The information collected through the review demonstrates that there exists a lack of gender-disaggregated information on men's and women's contributions to FTA value chain activities in Latin America. General trends on men's and women's roles can be inferred through case studies from different Latin American countries, with a special emphasis on the Amazon and Amazonian countries on which much of the literature focused; however, a critical recommendation that emerges from the review is for more exhaustive research on gender and FTA value chains in the Latin American region. This is particularly important for sustainable forest development and policy-making in general, as Latin America houses some of the largest expanses of forest in the world and the income of myriad populations depends on the Amazon forest.

It is furthermore important to emphasize that institutionalization of gender equality can not only help improve women's socioeconomic conditions, but also enhance the efficiency of natural resource management. For this reason, it is critical that diverse actors such as universities, research centers, and the state work to develop measures and policies that target gender inequalities related to forest-based resources. This implies training women and promoting their increased participation in forestry-related institutions. This can create important development opportunities and generate significant indirect benefits for their households and communities, for example by helping to identify additional synergies between the forestry sector and food security (Vázquez García, 2013). Gender inclusive forest development also requires the use of socially-inclusive planning and research tools that promote understanding of each context's gender particularities and community needs. Finally, recognition of women's property rights within current land transfer and development programs is also critical, as well as measures that ensure protection of those rights.

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