

# 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 (Mai et al., 2011). 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.

Value chain analysis is a valuable tool for assessing and comparing the degree of participation of various actors in NTFP development activities, according to social factors such as gender. Value chain analysis takes into account how actors' relationships with each other affect their roles in the chain; it furthermore evaluates the distribution of costs and benefits along the chain (Virapongse et al., 2014). For this reason, development strategies and interventions have used value chain approaches in order to identify obstacles to specific target groups (Coles and Mitchell, 2011). While targeting economic viability and sustainability, value chain analysis can prioritize outcomes that benefit all participants.

A focus on value chains in gender analyses of forest livelihood strategies helps 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 aims to provide 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, activities to which women can 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, providing important sources of food security and livelihood stability to myriad populations (Mai et al., 2011). Furthermore, Latin America demonstrates the greatest market integration in comparison to other regions of the world like Africa and Asia (Sunderland et al., 2014); correspondingly, research on the social implications of commercialization processes involving smallholder producers is particularly important. In response to this knowledge gap, the present literature review focuses on Latin America to develop and prioritize suggestions for future research.

After explaining the methodology, the review is organized in four discussion sections which address the following general research questions:

1. What characterizes men's and women's roles in FTA value chains?
2. How do men and women benefit from their participation in FTA value chains?
3. What factors influence how men and women benefit from their FTA value chain participation?

A fourth discussion section addresses how collective group participation affects women's roles in FTA value chains, in recognition of the significant amount of literature on this theme. 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.

### Men's and women's roles in FTA value chains

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 place women in activities like forest product collection for household subsistence and men more so in cash crop agriculture and high value tree crop commercialization. Across the Latin American, Asian, and African regions, men were found to contribute more than women to household income of both unprocessed and processed forest products. 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 product 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 participate less in commercialization processes and contribute more to prior chain activities; similarly, they contribute to products for subsistence use. For example, men tend to dominate commercial timber extraction. Also, with regards to commercialized NTFPs, a study of sixteen commercialized NTFP value chains in Mexico and Bolivia found that women were more likely than men to participate in cultivation and processing activities, although the latter were sometimes carried out with men (Shreckenbergs and Marshall, 2006). A study of cocoa agroforestry in Ecuador furthermore notes that women and men participate in all stages of sowing, maintenance, and harvest, while men particularly dominate post-harvest activities (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).

Despite the trend, there do exist cases of value chains wherein women participate significantly in sales, although they may depend on men in other nodes of the chain to provide the resource. Shreckenbergs and Marshall's (2006) analysis of women's contributions to sixteen commercial NTFP value chains in Mexico and Bolivia found that in three cases women predominate processing and sales, with a dependency on men for the resource: a rubber value chain in Bolivia; and value chains in Mexico and Bolivia based on soyate palm and jipi japa palm, respectively, wherein men provide the palm fibers which women use to make craft products for sale. They highlight, furthermore, that there exist several cases wherein men control all value chain activities from cultivation through sales, whereas there exist none wherein women are solely responsible for all activities. Similarly to the palm fiber cases that Shreckenbergs and Marshall note, Virapongse et al. (2014) demonstrate that men predominate collection of buriti palm fibers in Brazil, which women artisans use to create handicrafts; women also predominated as handicraft vendors.

The prevailing trend tends to be that men dominate sales activities in lucrative FTA value chains despite the above cases and that, correspondingly, women are concentrated in lower value chain activities. For example, in indigenous Zapotec communities in Mexico men participate increasingly in the various stages of high value mushroom value chains, while women contribute primarily to value chains for lower value varieties, used for household consumption or for sales in local markets (IFAD, 2008; Marshall et al., 2006). Both 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; however, women are more extensively involved in the first two local and national chains, contributing to collection as well as transport and marketing. Poor women predominate the mushroom collection.

These observations regarding the cacao, coffee, rubber, palm fiber, and mushroom 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.

### 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. For example, although non-timber extractive activities like rubber tapping are 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. 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, public statistics on Brazil nut production in the Western Amazon in Brazil does not take into account women producers' participation.

Similarly, women's contributions to coffee and cocoa production may be disregarded under the presumption that it is men's work despite women's comparable participation in production in comparison to men. In a study of organic coffee production in Chiapas, Mexico, 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. Women likewise help men carry out post-harvest activities in cocoa agroforestry in Ecuador, but their contributions are often disregarded (Blare and Useche, 2015). These trends hint at the importance of certain gender ideologies, which will be discussed more in a later subsection.

### Men's and women's remunerative and non-remunerative benefits from FTA value chains

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 to Asia.

Specific cases from Latin America corroborate the trend of men's greater remunerative benefits over women from their participation in FTA value chains. Schmink and García's literature review of gender and forestry in Amazonia notes that men tend 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 temporary and permanent work in global value chains also suggests a lower valuing of women's work. Women employed in Brazil nut processing factories in Pando, Bolivia, 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). Barrientos's research (2001) on the international deciduous fruit value chain in Chile similarly demonstrates that women predominate temporary work positions in comparison to men, while the latter are employed more significantly in permanent positions. Temporary positions tend to exist in the packing houses more than in field work. The flexibility of temporary work contracts reduces wage costs for companies and can often serve as a means to mitigate market insecurity and risk (89).

Women's tendency to be concentrated in lower value chain nodes is due in part to a lack of income-generating activities available to them, in comparison to men (Shreckenbergh and Marshall, 2006). Consequently, women engage in tasks despite low returns on labor because of the low opportunity cost to them (78). For example, in the case of a rubber value chain in Bolivia, men predominate the more profitable collection activities; however, men choose to work in the mines rather than the much less lucrative rubber processing. As a result, women take up processing activities, and men return from mine work when rubber processing is completed. In this way, women's cheap labor makes possible rubber production and contributes to an additional household income source. Similarly, in value chains for pita fibers and tepejilote inflorescence in Mexico, women contribute significantly to processing and collecting, respectively, while men work in more lucrative day wage labor or in managing cash crop coffee.

Women tend to receive increased remunerative benefits from their participation in value chains, in contrast to the above trends, when they 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 four.

Shreckenberg and Marshall's (2006: 79) analysis of NTFP value chains in Mexico and Bolivia finds that women can experience particular non-remunerative benefits from their participation in FTA chains. For example, women involved in value chains for jipi japa palm in Bolivia and for mushrooms in Mexico have benefited from trainings and social support. Women in the mushroom trade have received significant trainings in sustainable NTFP development; previously, only men involved in timber production were responsible for any sort of forest management. Through their affiliation with a weavers' association and a philanthropic private company, women jipi japa artisans benefit from a social fund and a rotating fund. Their work is also better recognized in the household and community. The analysis also demonstrates that women can gain self-confidence and status through their participation in jipi japa and mushroom value chains, particularly if they are affiliated with an organization or association.

Shreckenberg and Marshall's (2006) study furthermore demonstrates gender-differentiated uses of monetary and nonmonetary income generated from NTFP value chains. Women participate significantly in cocoa trade in the Bolivian Amazon; commonly they trade cocoa beans for household goods, whereas men may be prone to trade for alcohol or cigarettes. Similarly, women use cash earned from the sale of rubber goods in Bolivia for family needs. Men who desire personal income process and sell the goods on their own. The observations align with a general trend, wherein income controlled by women contributes to increased spending on education and children's health (Maertens and Swinnen, 2012).

## 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 the sex division of labor and gender ideology. Access to land, to credit and capital, and to trainings are also important influences to take into account.

### 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). According to Schmink and García's review (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).

Consequently, the sex division of labor and gender ideologies influence that women are less able than men to participate in value chain activities distanced from the home. Shreckenberg and Marshall's (2006) analysis demonstrates that in most cases where products have to be harvested deep in the forest, with the exception of mushrooms, men predominate collection. A study in Madre de Dios, Peru, noted that a limitation to the development of Brazil nut production, a regional economic activity to which women contributed significantly, was male labor input; while women contribute critically to processing, Brazil nut collection requires male labor, and for this reason production cannot expand through women's contributions alone (Campbell et al., 2005). Similarly, Shreckenberg and Marshall's research demonstrates that women are able to harvest rubber in Bolivia if it is in the proximity of the home; otherwise they depend on men relatives to provide the resource. Women experience the same limitation for collecting soyate palm fibers in Mexico, and contribute more significantly to craft making from the fibers. Men from the soyate case study furthermore affirm that it is not appropriate for women to travel the hillsides alone. Similarly to the soyate artisans, women jipi japa artisans depend on a male collector for the fiber. For these reasons, when women contribute to processing activities they carry them out in the home, as in the case of rubber production in Bolivia. Also, men tend to predominate sales activities as they require travel outside of the community. This occurred in the case of the tepejilote palm value chain in Mexico: when the seller stopped coming to the community, men became increasingly involved in the trade.

Shreckenberg and Marshall's (2006) analysis furthermore highlights that in only one particular case did the introduction of new technology benefit one gender over the other, due in part to the travel required for its use. Men came to be the primary users of a new fiber cleaning machine for pita fiber production in Mexico. Women prefer processing fibers by conventional methods because it is necessary to leave the home in order to use the machine.

Correspondingly, the gender division of labor necessitates that women's income generating activities complement their childcare and household responsibilities (Shreckenberg and Marshall, 2006). In some cases, pita weavers in Mexico had to give up their occupation because their childcare responsibilities allowed them no extra time. NTFP activities occurred close enough to the home such that children could accompany mothers in their collection activities in 60% of the cases included in Shreckenberg and Marshall's study. Furthermore, the review highlights that when the product is used for household consumption women are more likely to be involved in the value chain. This helps explain why men contribute more to the international mushroom export chain than women: the end product is not used for the household's cooking.

Peri-urban FTA value chain activities can complement women's household and childcare responsibilities, as well. 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.



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 eighteen workshops carried out in Pará state in the Brazilian Amazon where participants were asked to name priority species, women reported twice as many NTFPs as men (Shanley et al., 2011: 239); 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. Similarly, a study in the Bolivian Amazon found that the proportion of men citing timber as an important aspect of the forest was double that of women (Bolaños and Schmink, 2005). 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. Furthermore, women involved in fruit agroforestry in El Salvador often prefer agroforests because they provide access to food and additional markets, and provide ecological services, including better soil fertility (Kelly, 2009).

Gender ideologies that associate public, decision-making spaces and the forest with men and domestic responsibilities and the home with women can influence women's exclusion from decision-making on forest management. 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 northeastern Brazil generally forest management decision-making is also considered men's role, to the exclusion of women (7). Furthermore, 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. Schreckenber and Marshall's (2006) study also noted that in value chain activities wherein both men and women participated significantly, men tended to dominate decision-making (77).

Correspondingly, gender ideologies that limit women's decision-making space can affect decisions on capital and other productive resources necessary for women's FTA and agricultural value chain activities. Similarly to Bolaños and Schmink's research (2005), gendered cultural institutions that construct the forest as a predominantly masculine realm influence that women participate to a significantly less extent than men in a timber management project in Acre, Brazil (Porro and Stone, 2005). Time constraints associated with women's reproductive activities also limit their project participation. As a result of women's lack of participation in the project, men control the income, to women's exclusion. Furthermore, women must contend with increased labor burdens due to decreased labor contributions from men to nontimber activities such as agriculture and rubber tapping.

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 allows greater opportunity for recognition of their productive FTA work.

Even in cases where women gain access to public decision-making spaces, division of labor and gender ideologies can work to marginalize women-dominated FTA production activities. Porro and Stone's research (2005) on women's role in extractive activities in northeastern Brazil notes that while women babaçu palm fruit producers have managed to participate in local and regional level politics through their role in social and environmental movements, gender ideologies that associate extractive activities with feminized poverty diminish the value of their productive contributions to sustainable forest development. Correspondingly, environmental funding agencies often disregard babaçu production. The supposition that women will work without remuneration for the benefit of their households influences such trends in development projects.

### 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 predominate (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.

The significance of access to credit and capital for FTA livelihood strategies can depend varyingly on other socio-economic variables such as class and age, in addition to gender. For example, Virapongse et al.'s study (2014) of the buriti palm fiber value chain suggests that increased capital can help facilitate women artisans' advancement in the value chain to the vendor node, although increased education is also necessary. 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 in agroforestry.

### Access to trainings and external support

Access to trainings can also influence actors' participation in higher value nodes of the value chain, although as in the examples of access to credit and capital, this can depend on other socio-economic variables besides gender. Trainings helped women buriti artisans to achieve greater return on their labor by teaching them new skills, providing access to new markets of higher paying clients, and helping them form cooperatives (Virapongse et al., 2014). In some cases, it furthermore helped them to move up the chain to become vendors. Those who were unable to receive the trainings influenced the development of a new value chain dynamic, wherein they sold unfinished crafts to artisan-vendors. Finally, there existed some artisans who did not receive the trainings yet were highly skilled enough that they were able to develop their own niche markets for their crafts.

## 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 their 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. In a similar vein, 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.

Despite this regional trend, cases of women's participation in production organizations in Latin American countries exist. Moreover, these suggest that participation in producer organizations influence 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. Despite these trends, additional research suggests the importance of intersecting socio-economic variables on women's

benefit from collective participation. For example, Virapongse et al.'s research demonstrates that the people who were able to access and benefit the most from handicraft cooperatives were those from better-off groups who could dedicate sufficient time to cooperative participation and focus their efforts on one livelihood strategy instead of multiple (2014).

Similarly to the study of the Amazon Rural Women's Microenterprise Network, Porro and Stone's research (2005) on women babaçu fruit processors in Brazil suggests that women's productive organizations can advance combined productive and political platforms. The gender division of labor influences that women are considered as primarily responsible for extractive activities, such as babaçu fruit collection and processing, in comparison to men. Consequently, it has developed that groups of women babaçu processors participate in political mobilizations for protection of forest resources. Furthermore, women babaçu soap producers manufacture and sell their products under the banner of their economic and political struggles. Through their mobilization, the women have contributed to the passing of a municipal law on babaçu palm protection and free access to the fruit. A woman babaçu palm producer also represents them in City Hall.

## Conclusions and Recommendations

The results of the literature review demonstrate a certain complexity, with respect to the influence of gender dynamics on men's and women's participation in and benefit from FTA value chains in Latin America. Nonetheless, it is possible to identify a few key trends. Research demonstrates that both men and women contribute significantly to FTA value chains in Latin America; furthermore, while men predominate over women in those destined for commerce, they participate extensively along with women in forest production activities related to subsistence, as well. Comparison with other regions suggests that with increased market integration, men's role in the chain can expand while women's may diminish. A more micro-level analysis of men's and women's value chain activities suggests that women's contributions are characteristically prior to the sales node and/or located in lower value nodes, in comparison to those of men's. Furthermore, women's contributions are often less recognized. Correspondingly, men's benefits in remunerative terms from their participation in FTA value chains are greater than women's, due to their comparative roles and places in the chains.

While the above observations affirm general trends in gender and development research, a closer examination of the factors that contribute to how gender influences the benefits men and women perceive from FTA value chains begin to indicate priority areas for further research. The sex division of labor and gender ideologies greatly influence the roles men and women play and associated benefits. Societal norms that associate women with the home and subsistence needs whereas men assume responsibility for the forest and commercial activities limit women's participation in value chain activities distanced from the home. Furthermore, activities must often complement their childrearing obligations in order to be feasible. These gender-specialized roles lead to differentiations in knowledge and preferences regarding forest resource management. These also influence that women carry out the most low-paying activities, due to their limited access to more lucrative opportunities in comparison to men. Gender ideologies furthermore contribute to women's limited access to decision-making spaces and

decision-making power with respect to forest management, relative to men. Consequently, they can have less opportunity to voice their interests and preferences for development and investment in productive activities.

Access to productive resources constitutes another important factor. Women's limited access to land in comparison to men can inhibit their participation in producer organizations and consequently, their access to important decision-making spaces. Increased access to credit, capital, and/or trainings may be necessary to develop less lucrative value chain activities in which women tend to be involved; in particular, these inputs can facilitate women's enhanced participation in the chain, such that they benefit more. Despite these trends, it is important to recognize that intersecting socioeconomic variables influence that certain social groups can benefit from increased access more than others.

Research on women's participation in producer organizations suggests that this can help enhance women's remunerative and non-remunerative benefits. The literature furthermore demonstrates how participation in producer organizations, all-women groups particularly, often coincides with women's political organizing around environmental concerns.

Certain recommendations and considerations for future value chain research and interventions develop from this:

Mechanisms that provide men and women equal opportunity to participate in decision-making spaces on production can be key for guaranteeing that both men's and women's preferences and interests are considered in interventions seeking to upgrade value chains. This is important such that women can experience enhanced benefits from the value chain activities in which they participate.

Correspondingly, it is important that interventions promote women's inclusion in commercialization processes. This can require capacity-building for participation in the corresponding value chain nodes (i.e., sales, marketing). It can also require the development of business models that are sensitive to gender equality, in order to change gender ideologies that give men responsibility of commercial activities to the exclusion of women. Such developments might be particularly critical in Latin America, where market integration is more advanced than in other regions of the world.

Although men may predominate FTA value chains in Latin America, it is important to recognize women's often less visible and less profitable contributions to these, including those destined for subsistence in order to develop equitable benefit sharing mechanisms from value chains. For example, while gender norms and sex division of labor may limit women's participation in timber value chains and in more lucrative nodes of NTFP value chains, women can contribute significantly to processing activities in the home, suggesting that this would be a potentially valuable focus for interventions.

It is equally important to direct research to other aspects of social differentiation in order to understand the intersecting influences of gender with, for example, ethnicity and socioeconomic class, and consequently, how these dynamics affect capability to benefit from value chain interventions. Taking into

account such varied aspects of social differentiation are important in order to develop truly equitable value chains.

Supporting women's increased involvement in producer organizations is a potential opportunity for enhancing the benefits women perceive from participation in FTA value chains in Latin America. This can be for the development of women-specific cooperatives or for women's increased membership in producer organizations. Related to this, an important focus of analysis is the advantages and disadvantages of all women or mixed-gender cooperatives, for gender equality concerns in value chain upgrading. Furthermore, an important theme for further research is the socioeconomic factors that limit participation in producer organizations, beyond gender.

Similarly, a potentially valuable area of research for FTA value chains in Latin America is the relationship between women's participation in producer organizations and their contributions to social movements. Latin America over the last decades has seen significant political organizing among rural, indigenous, and other marginalized groups for varying economic, territorial and environmental concerns. The organizational capacity and skills that women develop through their participation in producer organizations can often influence the role they play in social movements. How they can gain greater recognition of their contribution to FTA value chains and promote the development of gender-sensitive and sustainable business models through such mobilizations will be a critical avenue of future investigation.

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