6

Forest Conservation in Central and West Africa: Opportunities and Risks for Gender Equity

Helen Harris-Fry and Carlos Grijalva-Eternod

Introduction

In recent years, the forestry sector has tried to mainstream gender[1] into legislation, policies and programs in order to promote 'women's empowerment' (FAO 2007). This focus on women in gender mainstreaming has arisen because women have often been more excluded from forest conservation governance, employment and decision-making than men (ibid 2007). Case studies have shown how the inclusion of women in forest conservation programs can empower women by, for example, increasing women's incomes or promoting female participation in forest management committees (Schroeder 1995; Yatchou 2011).

Similarly, the focus on women's empowerment has arisen because women often have less power than men (Kandiyoti 1988). Some believe that women's empowerment is inherently important (Kabeer 1999; Sen 1985); whereas, in the wider development discourse, women's empowerment has been justified by the potential value for achieving other development outcomes (Hickel 2014). For instance, it is widely perceived that, when women have greater control over household resources, this greater control will be associated with more resources being spent on food and health care (Hopkins et al. 1994; Russell 1996) and in turn with better nutritional outcomes in the household (Malapit and Quisumbing 2015; John 2008).

Others have focused on women's empowerment from a conservation perspective (Agarwal 2009). Some forest conservation programs that excluded or did not benefit women have resulted in women sabotaging the programs, whereas many programs that included and benefitted women have been reciprocally supported by women's labor, endorsement and better conservation outcomes (Schroeder 1999; Agarwal 2009). This labor may be especially valuable given the described gender-specific knowledge that women have about the value and distribution of various tree species (Rocheleau et al. 1996). On the other hand, simple gender mainstreaming, without specific empowerment objectives and without attention to gender

---

[1] 'Gender mainstreaming' is defined by the UN as "the process of assessing the implications for women and men of any planned action, including legislation, policies or programs, in all areas and at all levels" (UN 1997, 28).

relations, has not always resulted in better conservation outcomes because women have had comparatively lower access to technology and time for additional non-domestic work (Mwangi et al. 2011).

Empowerment in the heavily forested region of Central and West Africa warrants special attention because countries in this region have the lowest women's empowerment score in Africa, according to the Women's Empowerment in Agriculture Index (WEAI) (Malapit et al. 2014).[2] Conservation programs in Central and West Africa are now (or may be soon) supported by newly available multilateral funds that are designed to incentivize developing countries to protect their forests and reduce carbon emissions from deforestation. This climate change mitigation mechanism, REDD+ (Reducing Emissions from Deforestation and Forest Degradation), provides funds to promote forest conservation and presents a new opportunity to empower both women and men within forest conservation programs (Angelsen and McNeill 2012; Nartey 2014; Brown et al. 2008; Luttrell et al. 2012). Yet, despite their potential, national REDD+ programs have been described as limited and tokenistic in their efforts to mainstream gender (Peach Brown 2011; Larson, this volume).

Although there are many studies on gender and empowerment in community-based forest management,[3] research from Central and West Africa is notably sparse (Mai et al. 2011). Literature and recent policy documents (such as Cameroon's and Ghana's gender REDD+ roadmaps) have focused on gender bias within institutions (FAO 2007) and on how programs may affect gender-specific roles and access to resources (Quesada-Aguilar et al. 2012). Yet, they have not questioned how programs may affect intra-household 'empowerment and gender dynamics' (collectively termed 'gendered power dynamics'). The Democratic Republic of Congo (DRC), the Republic of the Congo, Nigeria and Ivory Coast are receiving REDD+ funds, and future recipients of REDD+ funding in this region (Cameroon, Central African Republic, and Ghana) are now developing their REDD+ Readiness Plan Idea Notes and their Readiness Preparation Proposals.[4] So, this is a critical time to address this gap by

---

[2] WEAI is a measure of women's empowerment levels in the agriculture sector and is an aggregate of various measures of five different domains (e.g. control over income and time allocation) of women's empowerment (Malapit et al. 2014).

[3] See, for example, Agarwal (2001, 2010) for descriptions of gendered participation in community forest user groups (2001) and the effect of gender composition in community forestry institutions (CFI) on the likelihood of women speaking up in CFI meetings (2010).

[4] REDD+ Readiness Plan Idea Notes (R-PINs) are submitted by national governments to the Forest Carbon Partnership Facility (World Bank) to characterise the extent and causes of forest deforestation and degradation and current forestry policies and programs. These should outline a process for engaging stakeholders (including forest dwellers) and monitoring livelihood benefits of proposed REDD+ programs. If the R-PIN is approved, the

reviewing evidence on the effects of previous community-based forestry programs on intra-household gendered power dynamics.

To our knowledge there are no reviews of the impacts of Central and West African community-based forest conservation programs on gendered power dynamics. Drawing on bargaining power theory by Sen (1987) and Agarwal (1997), we review the literature on Central and West African community-based forest conservation programs to: Describe how community-based forest conservation programs can affect intra-household gendered power dynamics; and learn lessons from programs that succeeded or failed to empower women and men, to understand how REDD+ programs could make gendered power dynamics more equitable.

Context and methods

Study setting and context

Here we provide some examples of wider contextual factors and gender roles within forest-dwelling households in Central and West Africa. This is a considerable challenge given the sociocultural heterogeneity of such a large region, so we illustrate any trends with locally specific examples. We acknowledge the dangers of homogenizing or simplifying gender issues across different societies (Barry et al. 2010; Vansina 1990). But, we suggest a broad overview is a useful prerequisite to analyzing empowerment effects of conservation programs and we expect that the described trends may change.

A context of disempowered forest communities

First, we situate our study in the context of the widespread marginalization of forest communities in Central and West Africa. In colonial and postcolonial periods, State laws have often disempowered forest communities. For example, in the formation of national parks there, forest-dwellers were forcefully evicted and homes destroyed. Anthropological

---

country can then submit Readiness Preparation Proposals (R-PPs) which outline plans, budgets and timelines of their proposed REDD+ programs.

accounts describe how forest-dwelling Pygmy[5] men struggled to provide for their families or afford gifts for their wives due to new poaching laws and land use restrictions. Many turned to alcoholism as they struggled to fulfill their traditionally masculine duties of farming land and providing meat for their families (Lewis 2000).

Economic influences like market expansions and fluctuations, economic subsidies, and unemployment from structural adjustment programs have also altered the relative value of men's and women's productive capacity (Meagher 2010; Richards 1998). Again, this raised the issue of men being unable to fulfill duties they considered central to masculine identity: Those of providing for their families or, in some areas, having enough money to pay a bride price for a wife (Richards 1998; Schroeder 1995; Whitehead and Tsikata 2003).

Many countries in the region have been affected by conflict (Richards 1998). Recruitment of men, women and children to army or rebel groups; frequent drug consumption; and forced use of rape as a war tactic have had long-term negative consequences on the empowerment status of men and women in these areas (Richards 1998). Now, many ex-combatants are unemployed, landless, and unable to marry or return to their families (Barker and Ricardo 2005).

In summary, external influences have disempowered many forest-dwelling men and women. In terms of gender relations, male disempowerment in the region has been linked to increased likelihood of men engaging in violence, suffering from alcoholism (Barker and Ricardo 2005) and desiring more control in their domestic spheres (Colfer and Minarchek 2013).

Land, labor and resources in forest-dwelling households

Traditional land inheritance patterns have been highly heterogeneous across Central and West Africa (Davison 1988; Whitehead and Tsikata 2003). For instance, Yoruba men from Nigeria own land semi-permanently and divide it up for women to use (Sudarkasa 1973), whereas in the Gola forest in Sierra Leone, land is inherited by both men and women (Leach 1991) and in Cameroon, the Kom community follows historic matrilineal inheritance (Davison 1988; Tiayon 2011).

---

[5] We acknowledge the necessity to use this academic term, which has been used in a pejorative manner in the region; but have no viable alternative, in using the relevant literature (see Lewis 2000 for a more detailed discussion).

Long lists of ecosystem benefits, such as wild food, fodder, wood for construction, fuel and income, and non-timber forest products have been categorized as being 'men's' or 'women's' resources (Barry et al. 2010; Leach 1991; Tiayon 2011; Wan et al. 2011). However, others have debated the validity of these gendered categorizations (Meinzen-Dick et al. 2012), finding a lack of distinctions between 'men's' and 'women's' crops (Doss 2002) and flexibility in divisions between genders (Quisumbing et al. 2001). Indeed, the concept of ownership is also contested, since both men and women may be involved at different points in the production process (Leach 1991; Rocheleau and Edmunds 1997; see Elias, this volume).

A common generalization (Ingram et al. 2014; Sunderland et al. 2014) is that men tend to be more involved in cash generation than women, whereas women tend to be more responsible for household subsistence. In cases where men and women jointly contribute towards the same income-generating system, women tend to gather materials or produce a commodity and men sell this at markets (Rocheleau and Edmunds 1997; Tiayon 2011). Where market selling is done by women (examples from Cameroon, Nigeria, DRC and Central African Republic), men often exert control over the use of that generated income (Babalola and Dennis 1988; Flintan 2003; Ingram et al. 2014; Pérez et al. 2002; Tshombe et al. 2000).

With such heterogeneity in land ownership, roles and resource control, we conclude that gender is an important factor, but that program planners need local research for context-specific information on how their programs may have gender-specific impacts.

Literature search method

To acquire texts on the impact of community-based forest conservation programs on gendered power dynamics , we conducted a structured literature review using relevant key word search terms (Table 6.1) that were used in conjunction with specific place-names. Owing to the limited availability of studies, this process was combined with a 'snowball' search method by manually searching the reference lists from papers that were identified using the search terms. Although this method increases the risk of selection bias, we considered it worthwhile because of the scarcity of literature.

Table 6.1: Search terms

Theme	Search term
Forest	Forest*, Wood*, Tree*
Conservation	Poli*, Manag*, Protect*, Conserv*, Reforest*, Afforest*, "Community based forest management," CBFM, "Community forest," "Integrated conservation development project," ICDP, REDD, access, use, ownership
Gender	Gender*, women, woman, feminin*, masculin*, "gender alliance," "gender dynamic," "gender relation," "gender roles"
Empowerment	"bargaining power," empowerment, power

The databases used (International Bibliography of Social Sciences, JSTOR, Web of Knowledge, Eldis and Scopus) were selected because of their multi-disciplinary coverage.

We included studies from any countries in UN-defined regions of 'Central' and 'West' Africa and selected all studies that referred to impacts of community-based forest conservation programs on gender dynamics or power dynamics within the household. This inclusion of any 'community-based' program was done with anticipation of likely variation in the level of participation in such programs (Temudo 2012). We included both quantitative and qualitative studies, and non peer-reviewed grey literature such as policy reports. The exclusion criteria included any studies: Not written in English, not explicitly about forests, not referring to community-based programs, or with no reference to the intra-household gender or power effects of community-based programs. There was no exclusion criterion set for publication year.

Analytical framework

Kabeer defines empowerment as: "*the process by which those who have been denied the ability to make strategic life choices acquire such an ability*" (1999, 435). Using bargaining power theory proposed by Sen (1987), and developed by Agarwal (1997) and Alsop et al. (2006), we expanded on this definition to produce a framework for analyzing the effects of forest conservation programs on intra-household gendered power dynamics (Figure 6.1).

Figure 6.1: A framework of intra-household gendered power dynamics

'*Sources of power*' are the points where household members access all support and resources beyond the household. Sources may include personal endowments or attributes, social norms, social perceptions and extra-household support (Agarwal 1997). Types of extra-household

support may exist in formalised structures such as State support or conservation programs; they may be customary, such as kin groups; or *ad hoc,* through individual friendships (Rocheleau and Edmunds 1997). Here, REDD+ enters into the empowerment process, for example through provision of subsidies or services by affecting 'levels of power' and possibly 'bargaining processes.'

'Levels of power' represent the amount of influence and control a person has. Power levels may vary across different domains of a person's life. Power gained in one domain of someone's life does not necessarily result in a net increase in power if they lose power in another domain.

Also termed 'cooperative conflict' (Sen 1987), the *bargaining process* is the way that new or existing power is negotiated and utilized within the household. People may negotiate in ways that are covert (such as accepting the situation or ridiculing with friends) or overt methods (such as complaining or using physical violence; Colfer 2011), and this process may be affected by the power source.

Bargaining outcomes are the result of the 'bargaining process.' Program-provided sources of power may produce bargaining outcomes that were unintended by the program implementers. For example, if bargaining over program resources occurred aggressively, injury could be one unintended outcome (Colfer 2011; Mabsout and Van Staveren 2010). Alternatively, potentially disempowering assumptions that all women will use newfound power to make 'altruistic' decisions that work in favor of programmatic intended objectives may not hold.

The theoretical framework proposes that empowerment processes are not linear; there is a *feedback loop*, whereby bargaining outcomes can determine sources of power and bargaining processes.

Results

A total of 14 results met the inclusion and exclusion criteria. Of these, publication dates ranged from 1988 to 2012. The 14 results (summarized in Table 6.2) often described just one or two components of the analytical framework. Most of the results described gendered differences in sources of power; very few described the levels of empowerment, bargaining process, outcomes or feedback loops.

Effects of forest conservation programs on gendered power dynamics

Summarizing Table 6.2, we found that community-based forest conservation programs had mixed results for women's empowerment. Sources of power often came in the form of financial benefits from crop production (personal endowments and attributes section in Table 6.2). Without a deliberate gender or women-based focus, by default, programs selectively provided men with sources of power in the form of grants for crop production (Sefa Dei 1994; Schroeder 1995) and support and employment for male groups (Flintan 2003; Abbot et al. 2000). This selective benefit for men was often also costly to women, due to reduced land access (Schoepf and Schoepf 1988; Leach 1991, 2000). Gender or women-specific projects tended to engage women in income generation (Abbot et al. 2001) and crop production (Meinzen-Dick et al. 2012; Schroeder 1995).

Studies rarely described levels of power or bargaining process. One study described some public processes of bargaining, as well as a feeling of women being 'emboldened' and men being displeased with these changes in power balances (Schroeder 1995).

Expected bargaining outcomes were described in more detail than unexpected outcomes. Most described how new income from programs was spent (Abbot et al. 2001; Yatchou 2011). Increased income did not consistently lead to increased household provisioning. One program that gave grants to landholding men led to men contributing less towards household subsistence and increasing the burden on women (Sefa Dei 1994). Another program that benefitted women also led to men providing less towards the household (Schoepf and Schoepf 1988). One study from Nigeria described the negative outcome of women being excluded from a project – heavy time costs associated with the project caused the project to fail (Leach 1991).

Some studies described feedback loops. For instance, one study described how the simultaneous disempowerment of men and empowerment of women led to women negotiating marital obligations (Schroeder 1995, 1999). This may affect power levels and future bargaining processes. Another found that women's increased economic power enabled them to make land management and product marketing and sales decisions (FAO 2007), also potentially providing women with further sources of economic power.

1 Table 6.2: Summary of the effects of forest conservation programs on intra-household gendered power dynamics

Framework theme	Country	Reference
Sources of power **(Personal endowments and attributes, extra-household support, social norms, social perceptions)**		
Personal endowments and attributes		
Only landholding men were given State grants for tree-cropping cocoa and oil palm.	Ghana	Sefa Dei 1994
NGOs involved women in production of non-traditional crops, e.g. rice, onions, cotton and shea butter.	Upper East Zone, Ghana	Meinzen-Dick et al. 2012
Women were introduced to 'male' activities such as beekeeping, supported through women's farmer groups.	Kilum–Ijim Forest, Cameroon	Abbot et al. 2001
Men's quinine cash cropping resulted in loss of high quality land for women to use for food crops.	DRC	Schoepf and Schoepf 1988
The produce from a women's gardening project provided women with income at a time when men faced falling yields and removal of cash crop subsidies. After this project, subsidies for orchards were given to male landholders; the orchards reduced women's time and land for agricultural production.	The Gambia	Schroeder 1995
Women's access to forest products and use of forests for grazing livestock was restricted but they gained skills from training on budgeting, resource management and forestry law.	Burkina Faso	FAO 2007, Coulibaly-Lingani et al. 2009
Coffee and cocoa production project reduced women's ability to intercrop land due to shade from the cash crops. Men often cleared trees valuable to women if the trees restricted growth of the cash crops.	Sierra Leone	Leach 1991
Extra-household support		
Recruitment of park guards using male brotherhoods strengthened male control over land.	Guinea	Flintan 2003
Project consulted male groups (KwiFon) but failed to involve female sacred societies (Fumbiem).	Kilum-Ijim forest, Cameroon	Abbot et al. 2000
Female representation in forest management committees increased women's control over finances.	Kilum-Ijim forest, Cameroon	Yatchou 2011
An integrated community development project registered women's groups with local governments to validate their claims to access land.	Gashaka Gumti National Park, Nigeria	Dunn et al. 2000
Social norms		
Coffee and cocoa cash cropping mainly benefited men because women traditionally do not clear land or participate in income-generating activities. Men adopted a wood collection role – traditionally a women's role – because of new market benefits.	Sierra Leone	Leach 1991

Women's access to conservation parks was restricted because they faced the threat of being bribed, beaten or raped by park guards if they risked illegally gathering resources from restricted areas.	Guinea	Leach 2000
Social perceptions		
State transfer of power to local brotherhoods resulted in a new male identity and re-definition of female identity, where women's voice and sexuality were repressed.	Guinea	Leach 2000
Men lost respect because of their falling groundnut yields.	The Gambia	Schroeder 1995
Levels of power		
Project that encouraged women to plant shrubs and trees undermined men's control over management decisions. When women's income increased, men expected women to contribute more to household provisioning of food, clothing and ceremonial costs. Men viewed the increase in women's incomes and newfound confidence as an imbalance in power that needed to be rectified.	Gambia	Schroeder 1995
Committees provided a platform for women to change perceptions by demonstrating their knowledge and abilities. This was reported to be reducing the power imbalances.	Gashaka Gumti National Park, Nigeria	Dunn et al. 2000
Bargaining process		
In financial difficulties, women negotiated by changing marital obligations and allowing themselves a second husband. Resistance against men's allocation of tasks (threshing millet) to women was contested publicly with a group of many women. A focus of NGOs on 'women's programs' generated resentment from men, but domestic violence was anecdotally reported to have decreased.	Gambia	Schroeder 1995, 1999
Bargaining outcomes		
Men, who were given grants, reduced their inputs in domestic food production thereby increasing the burden for women to meet household food demand. Men spent their new profits on leisure and personal items.	Ghana	Sefa Dei 1994
Project generated income for women. Women spent income on school fees and new clothes, but men had less pressure to provide for their wives.	Kilum-Ijim forest, Cameroon	Abbot et al. 2001
As a result of new benefits for women, men's financial contribution to the household decreased.	DRC	Schoepf and Schoepf 1988
Women were able to 'buy' freedom from unhappy marriages. Women felt emboldened and gained confidence to find additional ways to make income.	The Gambia	Schroeder 1995
As a result of women's increased control over community group finances, the community built a water well, health center, community hall and electricity generator. Female participation was normalized.	Kilum-Ijim forest, Cameroon	Yatchou 2011
Community-based program gave women more financial freedom and enabled them to change factors affecting levels of bargaining power, by making land management decisions and choosing which forest products to sell.	Burkina Faso	FAO 2007
Heavy time costs for women made a reforestation project unpopular and eventually unsuccessful.	Nigeria	Leach 1991

2

Studies rarely described all components of the analytical framework, so we selected the most comprehensive case study to illustrate gendered bargaining processes (*with reference to the framework in italicized parentheses, below*).

A case from The Gambia (Schroeder 1995, 1999)

In 1991, the Gambian government responded to concern regarding high levels of undernutrition in women and children in the country's rural areas by implementing a woman-focused gardening project. The project was primarily meant to support household consumption of fruit and vegetables and the surplus was sold in local markets, thereby providing income for women *(sources of power)*. The gardening project encouraged women to plant shrubs and trees and, in doing so, undermined men's control over land management decisions *(levels of power)*. Combined with the falling yields and removal of subsidies for male-grown cash crops, women were able to negotiate overtly *(bargaining process)*, and this resulted in women being able to 'buy' freedom from unhappy marriages *(bargaining outcome)*. Women were reported to feel emboldened *(levels of power)* and to have gained confidence to find additional ways to earn income *(sources of power)*. Along with the sudden increase in female incomes and women's newfound confidence and falling groundnut yields, men viewed this imbalance in power relations as something that needed to be rectified *(bargaining process, not described)*. Men started to expect women to contribute more to household provisioning of food, clothing and ceremonial costs *(bargaining outcome)*.

However, in response to environmental concerns of soil and forest degradation, the government and the US Agency for International Development (USAID) supported a second project to promote reforestation with orchards in the same areas. This project took a different approach; unlike the focus on women in the earlier gardening scheme, subsidies for orchard planting were almost exclusively granted to male landholders. This reasserted male landholding privileges *(sources of power)* and women's newfound financial autonomy was undermined *(levels of power)*. These forest programs accepted patriarchal structures and, in doing so, increased men's endowments whilst being costly to women (Schroeder 1995).

Opportunities and risks of conservation programs for women's empowerment

From the case study, we have seen the fluidity of gendered bargaining processes and the ease with which forest programs might affect power dynamics. Many programs have disempowered women and some that empowered women led to conflict between genders. Using the literature summarized in Table 6.2, we propose three reasons to explain why this may be, and we suggest lessons to be learned for REDD+ program implementers.

Sources of power were diverse and poorly understood

We found that many programs failed to promote equity in power dynamics because they did not fully understand how the program affected sources of power. Many failed to account for the time demands of program activities or fully understand how gender roles vary according to people's ages, ethnicity, the season and the location or agro-ecological zone (Leach 1991; Meinzen-Dick et al. 2012; Sefa Dei 1994). Some programs only focused on women's empowerment and ignored the possible program impacts on men. We found a number of examples where forestry programs were disempowering for men (Colfer 2011; Schroeder 1995).

Sources of power were not always received by the intended people

Other programs did not anticipate the fluidity of power and the ease with which existing gender imbalances in power levels could be maintained despite changes in gender-specific power sources. For example, one wood collection program that was intended to benefit women (because it was a traditionally 'female' role) was adopted by men instead due to new cash benefits (Leach 1991).

Some programs accepted patriarchy - others challenged it

Some programs that accepted patriarchy aimed to benefit women by increasing women's access to or the value of traditionally female resources or roles, such as growing food (Abbot et al. 2001) and collecting fuelwood (Leach 1991). The former case was successful in increasing women's incomes; the latter had limited impact on women's empowerment. Other programs involved women in traditionally masculine domains. For example, in a successful project in Cameroon, women were introduced to the 'male' income-generating activity of

beekeeping (Leach 1991). Another program registered women's groups with local governments to legitimize their claims to access land within a traditionally 'patrilineal' context (Dunn et al. 2000). Due to the lack of evidence, we were unable to assess whether programs that challenged patriarchy (possibly creating a more apparent loss of male power) posed risks to women by increasing tension and causing violent bargaining processes.

Implications for REDD+ programs

Before implementation, REDD+ programs should consult with communities to comprehensively characterize gender roles and identify gender-specific costs (including time costs) and benefits of proposed programs. This should include careful consideration of how programs may introduce benefits to both men and women.

Given the earlier-described violence and alcohol-related problems sometimes associated with male disempowerment (Mabsout and Van Staveren 2010), REDD+ programs will ideally equalize power whilst collectively empowering forest-dwelling communities - in other words by reducing men's intra-household power levels but increasing their extra-household power. By including men in programs that aim to benefit women, a loss of male power within households may be perceived by men as more socially acceptable and could reduce the risk of a confrontational negotiation (Colfer and Minarchek 2013; Lwambo 2013).

It is difficult to know whether REDD+ programs that challenge patriarchy will maximize the potential for women's empowerment, or generate tensions in the household or animosity towards the program (Colfer and Minarchek 2013). An advantage for REDD+, which may promote community-level acceptance of women's empowerment in this way, is its inherent and monetary power from international and State actors. A disadvantage may exist if there is a poor reputation from previous conservation programs (Temudo 2012). Consultation with men and women may help to minimize potentially negative responses from men, especially if REDD+ programs are pre-acknowledged to empower women by engaging women in traditionally masculine domains (Schroeder 1995). Engagement of men and women in the formative stages of program design may create an enabling environment to implement such programs (Sefa Dei 1994; Yatchou 2011).

Conclusion

This paper aimed to describe how conservation programs have affected intra-household power dynamics so that we can understand how future conservation development projects may affect power dynamics, broader development and livelihood outcomes. The chapter provided a new analytical framework to conceptualize the continuous construction and use of power. We found that forest conservation programs often failed to fully consider the costs and benefits of women's and men's participation (Coulibaly-Lingani et al. 2009; Leach 1991; Schoepf and Schoepf 1988). In particular, we identified the challenge that we do not have enough evidence on whether programs that operated against patriarchy posed risks for women's empowerment.

The conclusions of the study are limited by the publication dates. Impact evaluations are needed to monitor new programs and provide recent evidence on the links between conservation programs and empowerment.

A final note on REDD+ program design situates this paper back into the realities of forest management in Central and West Africa. Without evidence of programmatic benefits of women's empowerment, the aim to make power dynamics more equitable may not be sufficient to make empowerment a priority in forest program design. Many countries in the study region are politically unstable, with limited resources, high levels of corruption, and weak governance contributing to a context that may not be conducive to the implementation of programs designed to increase women's empowerment (Baaz and Stern 2009; Lwambo 2013). REDD+ funds in this context may not necessarily be distributed transparently and equitably, and empowerment may not be a central focus of governments. However, the many non-State actors involved in forest governance, such as international conservation organizations and those who hold the REDD+ purse strings, can adopt these findings. Indeed, failure to do so would be a lost opportunity to improve the rights, prospects and freedoms of women and men in forest-dwelling communities.

References

Abbot J. et al. 2000. *Promoting partnerships: Managing wildlife resources in Central and West Africa. Evaluating Eden.* International Institute for Environment and Development.

Abbot JI, Thomas DH, Gardner AA, Neba SE and Khen MW. 2001. Understanding the links between conservation and development in the Bamenda Highlands, Cameroon. *World Development* 29(7):1115-1136.

Agarwal B. 1997. 'Bargaining' and gender relations: Within and beyond the household. *Feminist economics* 3(1):1-51.

Agarwal B. 2001. Participatory exclusions, community forestry, and gender: An analysis for South Asia and a conceptual framework. *World development* 29(10):1623-1648.

Agarwal B. 2009. Gender and forest conservation: The impact of women's participation in community forest governance. *Ecological Economics* 68(11):2785-2799.

Agarwal B. 2010. Does women's proportional strength affect their participation? Governing local forests in South Asia? *World Development* 38(1):98–112.

Alsop R, Bertelsen MF and Holland J. 2006. *Empowerment in Practice: From Analysis to Implementation.* Washington DC: World Bank.

Angelsen A and McNeill D. 2012. The evolution of REDD+. *In* Angelsen A, Brockhaus M, Sunderlin WD and Verchot LV, eds. *Analysing REDD+: Challenges and Choices*. Bogor, Indonesia: Center for International Forestry Research.

Baaz ME and Stern M. 2009. Why do soldiers rape? Masculinity, violence, and sexuality in the armed forces in the Congo (DRC). *International Studies Quarterly* 53(2):495-518.

Babalola S and Dennis C. 1988. Returns to women's labour in cash crop production: Tobacco in Igboho, Oyo State, Nigeria. *In* Davison J, ed. *Agriculture Women and Land: The African Experience*, Boulder, Colorado: Westview Press. 79–89.

Barker G and Ricardo C. 2005. *Young Men and the Construction of Masculinity in Sub-Saharan Africa: Implications for HIV/AIDS, Conflict, and Violence*. Washington, DC: World Bank.

Barry D, Larson AM and Colfer CJP. 2010. Forest tenure reform: An orphan with only uncles. In Larson AM, Barry D, Dahal GR and Colfer CJP, eds. *Forests for People: Community Rights and Forest Tenure Reform.* London, Washington DC: Earthscan. 19-42.

Brown D, Seymour F and Peskett L. 2008. How do we achieve REDD co-benefits and avoid doing harm? In Angelsen A, ed. *Moving Ahead with REDD: Issues, Options and Implications*. Bogor, Indonesia: Center for International Forestry Research. 107-118.

Colfer CJP. 2011. Marginalized forest peoples' perceptions of the legitimacy of governance: an exploration. *World Development* 39(12):2147-2164.

Colfer CJP and Minarchek RD. 2013. Introducing 'the gender box': A framework for analysing gender roles in forest management. *International Forestry Review* 15(4):411-426.

Coulibaly-Lingani P, Tigabu M, Savadogo P, Oden P-C and Ouadba J-M. 2009. Determinants of access to forest products in southern Burkina Faso. *Forest Policy and Economics* 11(7):516-524.

Davison J. 1988. Land and women's agricultural production: The context. In Davison J, ed. *Agriculture, Women, and Land: The African Experience*. Boulder, Colorado: Westview Press.

Doss CR. 1996. *Women's bargaining power in household economic decisions: Evidence from Ghana* [Staff paper]. Minnesota: University of Minnesota, Department of Applied Economics.

Doss CR. 2002. Men's crops? Women's crops? The gender patterns of cropping in Ghana. *World Development* 30(11):1987-2000.

Dunn A, Mamza J, Ananze F and Gawaisa S. 2000. Sticking to the rules: Working with local people to conserve biodiversity at Gashaka Gumti National Park, Nigeria. *In* Abbot J. et al. 2000. *Promoting Partnerships: Managing Wildlife Resources in Central and West Africa. Evaluating Eden.* London: International Institute for Environment and Development.

Fairhead J and Leach M, eds. 1998. *Reframing Deforestation: Global Analyses and Local Realities with Studies in West Africa*. London, New York: Routledge.

Flintan F. 2003. *'Engendering' Eden*: Volume II, Women, Gender and ICDPs in Africa: Lessons Learnt and Experiences Shared. London: International Institute for Environment and Development.

[FAO] Food and Agriculture Organization. 2007. *Gender Mainstreaming in Forestry in Africa*. Forest Policy Working Paper No. 18. Rome: Food and Agriculture Organisation.

Ghimire KB and Pimbert MP. 1997. Social change and conservation: an overview of issues and concepts. In Ghimire KB and Pimbert MP, eds. *Social Change and Conservation: Environmental Politics and Impacts of National Parks and Protected Areas*. London: Earthscan. 1-45.

Hickel J. 2014. The 'girl effect:' Liberalism, empowerment and the contradictions of development. *Third World Quarterly* 35(8):1355-1373.

Hopkins J, Levin C and Haddad L. 1994. Women's income and household expenditure patterns: Gender or flow? Evidence from Niger. *American Journal of Agricultural Economics* 76(5):1219-1225.

Ingram V, Schure J, Tieguhong JC, Ndoye O, Awono A and Iponga DM. 2014. Gender implications of forest product value chains in the Congo basin. *Forests, Trees and Livelihoods* 23(1-2):67-86.

John RM. 2008. Crowding out effect of tobacco expenditure and its implications on household resource allocation in India. *Social Science and Medicine* 66(6):1356-1367.

Kabeer N. 1999. Resources, agency, achievements: Reflections on the measurement of women's empowerment. *Development and Change* 30(3):435-464.

Kandiyoti D. 1988. Bargaining with patriarchy. *Gender & Society* 2(3):274-290.

Kiptot E and Franzel S. 2012. Gender and agroforestry in Africa: A review of women's participation. *Agroforestry systems* 84(1):35-58.

Langley P. 1980. *A Preliminary Approach to Women and Development: Getting a Few Facts Right.* Paper from the Seminar Workshop on Women in the Progress of Development: Implications for Training. Cameroon: Pan African Institute for Development.

Larson AM. 2005. Democratic decentralization in the forestry sector: Lessons learned from Africa, Asia and Latin America. *In* Colfer CJP and Capistrano D, eds. *The Politics of Decentralization: Forests, Power and People*. London, Virginia: Earthscan. 32-62.

Leach M. 1991. Engendered environments: Understanding natural resource management in the West African forest zone. *IDS Bulletin* 22(4):17-24.

Leach M. 2000. New shapes to shift: War, parks and the hunting person in modern West Africa. *Journal of the Royal Anthropological Institute* 6(4):577-595.

Lewis J. 2000. *The Batwa Pygmies of the Great Lakes Region*. London: Minority Rights Group International.

Luttrell C, Loft L, Fernanda Gebara M and Kweka D. 2012. Who should benefit and why? Discourses on REDD+ benefit sharing. Angelsen A, Brockhaus M, Sunderlin WD and Verchot LV, eds. *Analysing REDD+: Challenges and Choices*. Bogor, Indonesia: Center for International Forestry Research.

Lwambo D. 2013. 'Before the war, I was a man:' Men and masculinities in the eastern Democratic Republic of Congo. *Gender and Development* 21(1):47-66.

Mabsout R and Van Staveren I. 2010. Disentangling bargaining power from individual and household level to institutions: Evidence on women's position in Ethiopia. *World Development* 38(5):783-796.

Mai Y, Mwangi E and Wan M. 2011. Gender analysis in forestry research: Looking back and thinking ahead. *International Forestry Review* 13(2):245-258.

Malapit H, Sproule K, Kovarik C, Meinzen-Dick R, Quisumbing A, Ramzan F, Hogue E and Alkire S. 2014. *Measuring progress toward empowerment. Women's Empowerment in Agriculture Index: Baseline Report*. Washington DC: International Food Policy Research Institute.

Malapit HJL and Quisumbing AR. 2015. What dimensions of women's empowerment in agriculture matter for nutrition in Ghana? *Food Policy* 52:54-63.

Meagher K. 2010. *Identity Economics: Social Networks and the Informal Economy in Nigeria*. Suffolk, United Kingdom; Rochester, USA: Boydell and Brewer.

Meinzen-Dick RS, van Koppen B, Behrman J, Karelina Z, Akamandisa V, Hope L and Wielgosz B. 2012. *Putting gender on the map: methods for mapping gendered farm management systems in sub-Saharan Africa*. Washington, DC: International Food Policy Research Institute.

Mwangi E, Meinzen-Dick R and Sun Y. 2011. Gender and sustainable forest management in East Africa and Latin America. *Ecology and Society* 16(1):17.

Nartey WD. 2014. A REDD solution to a green problem: Using REDD plus to address deforestation in Ghana through benefit sharing and community self-empowerment. *African Journal of International and Comparative Law* 22(1):80-102.

Oates JF. 1999. *Myth and Reality in the Rain Forest: How Conservation Strategies are Failing in West Africa*. California: University of California Press.

Peach Brown C. 2011. Gender, climate change and REDD+ in the Congo Basin forests of Central Africa. *International Forestry Review* 13(2):163-176.

Pérez MR, Ndoye O, Eyebe A and Ngono DL. 2002. A gender analysis of forest product markets in Cameroon. *Africa Today* 49(3):97-126.

Peterman A, Behrman J and Quisumbing AR. 2010. A review of empirical evidence on gender differences in nonland agricultural inputs, technology, and services in developing countries. *In* Quisumbing AR, Meinzen-Dick R, Raney TL, Croppenstedt A, Behrman JA, Peterman A, eds. *Gender in Agriculture: Closing the Knowledge Gap.* Dordrecht, Heidelberg, New York, London: Springer. 145-186

Quesada-Aguilar A, Aguilar L, Amunau SB, Blomstrom EH, Dogbe T, Kutegeka S, Nyuyinwi M, Ruta D and Siles J. 2012. Gender and REDD+ road maps in Cameroon, Ghana and Uganda. In Broekhoven G, Savenije H and von Scheliha S, eds. *Moving Forward With Forest Governance.* Wageningen, The Netherlands: Tropenbos International.149-157.

Quisumbing AR, Payongayong E, Aidoo J and Otsuka K. 2001. Women's land rights in the transition to individualized ownership: Implications for tree resource management in Western Ghana. *Economic Development and Cultural Change* 50(1):157-182.

Richards P. 1998. *Fighting for the Rain Forest: War,Youth and Resources in Sierra Leone*. Oxford: James Currey.

Rocheleau D and Edmunds D. 1997. Women, men and trees: Gender, power and property in forest and agrarian landscapes. *World Development* 25(8):1351-1371.

Rocheleau D, Thomas-Slayter B and Wangari E. 1996. *Feminist Political Ecology: Global Issues and Local Experiences.* London, New York: Routledge.

Russell S. 1996. Ability to pay for health care: Concepts and evidence. *Health policy and planning* 11(3):219-237.

Sass J. 2002. *Women, men and environmental change: The gender dimensions of environmental policies and programs*. Washington DC: Population Reference Bureau.

Schoepf BG and Schoepf C. 1988. Land, gender, and food security in Eastern Kivu, Zaire. *In* Davison J, ed. *Agriculture, Women, and Land: The African Experience*. Boulder, Colorado: Westview Press.

Schroeder RA. 1995. Contradictions along the commodity road to environmental stabilization: Foresting Gambian gardens. *Antipode* 27(4):325-342.

Schroeder RA. 1999. *Shady Practices: Agroforestry and Gender Politics in the Gambia.* California: University of California Press.

Sefa Dei GJ. 1994. The women of a Ghanaian village: A study of social change. *African Studies Review*:121-145.

Sen A. 1985. Well-being, agency and freedom: The Dewey lectures 1984. *The Journal of Philosophy*:169-221.

Sen A. 1987. *Gender and Cooperative Conflicts.* Helsinki: World Institute for Development Economics Research.

Sen A. 1999. *Development as Freedom*. Oxford: Oxford University Press.

Sudarkasa N. 1973. *Where women work: A study of Yoruba women in the marketplace and in the home.* Anthropological Paper, Museum of Anthropology. University of Michigan.

Sunderland T, Achdiawan R, Angelsen A, Babigumira R, Ickowitz A, Paumgarten F, Reyes-García V and Shively G. 2014. Challenging perceptions about men, women, and forest product use: A global comparative study. *World Development* 64(1):S56-S66.

Temudo MP. 2012. 'The white men bought the gorests:' Conservation and contestation in Guinea-Bissau, Western Africa. *Conservation and Society* 10(4):354.

Tiayon FF. 2011. Gender in tropical forestry: Realities, challenges and prospects. *In* Aguilar L, Shaw DDMP and Quesada-Aguilar A, eds. *Forests and Gender*, Gland, Switzerland: International Union for Conservation of Nature; New York: Women Environment Development Organization. 14-17.

Tshombe R, Mwinyihali R, Girineza M and de Merode E. 2000. Decentralising wildlife management in the Democratic Republic of Congo: Integrating conservation and

development objectives in a country at war. *In* Abbot J. et al. 2000. *Promoting Partnerships: Managing Wildlife Resources in Central and West Africa. Evaluating Eden.* London: International Institute for Environment and Development.

Udry C. 1996. Gender, agricultural production, and the theory of the household. *Journal of Political Economy* 104(5):1010-1046.

[UN] United Nations. 1997. *Report of the Economic and Social Council for 1997, General Assembly: Fifty-second session 18 September 1997*, New York, NY: United Nations.

Vansina J. 1990. *Paths in the Rainforests: Toward a History of Political Tradition in Equatorial Africa.* Madison, Wisconsin: University of Wisconsin Press.

Wan M, Colfer CJP and Powell B. 2011. Forests, women and health: Opportunities and challenges for conservation. *International Forestry Review* 13(3):369-387.

Whitehead A and Tsikata D. 2003. Policy discourses on women's land rights in Sub–Saharan Africa: The implications of the return to the Customary. *Journal of Agrarian Change* 3(1-2):67-112.

Yatchou NA. 2011. Mainstreaming gender into community forestry in eastern Cameroon. *In* Aguilar L, Shaw DDMP and Quesada-Aguilar A. *Forests and Gender*. Gland, Switzerland: International Union for Conservation of Nature; New York: Women Environment Development Organization. 46-47.