



Does an agroforestry scheme with payment for ecosystem services (PES) economically empower women in sub-Saharan Africa?

Emmanuel O. Benjamin^{a,*}, Oreoluwa Ola^{b,1}, Gertrud Buchenrieder^{c,1}

^a Technische Universität München, Department of Agriculture and Food Economics, Alte Akademie 12, 85354 Freising, Germany

^b Technische Universität München, Department of Governance in International Agribusiness, Alte Akademie 12, 85354 Freising, Germany

^c Leibniz Institute of Agricultural Development in Transition Economies (IAMO), Theodor-Lieser-Str. 2, 06120 Halle (Saale), Germany

ARTICLE INFO

Article history:

Received 4 October 2016

Received in revised form 4 March 2018

Accepted 12 March 2018

Keywords:

Agroforestry

Ecosystem services

Gender equity

Empowerment

Kenya

Sub-Saharan Africa

ABSTRACT

In rural sub-Saharan Africa, poor women often face socioeconomic constraints that limit their participation in agroforestry. Agroforestry schemes with payment for ecosystem services (PES) endeavor to strike a gender balance making female smallholder farmers' operations as profitable and sustainable as those of their male counterparts. Yet, few studies to date have investigated the theoretical and empirical links between the economic as well as gender balance objectives of agroforestry with PES and women empowerment. Our study proposes an equity and economic efficiency evaluation of agroforestry schemes with PES to test whether this approach can truly promote economic empowerment among women. The results suggest that women participation in agroforestry schemes with PES reduces their profit inefficiency and thus contributes to their economic empowerment. In addition, women with larger farms derive even more benefits from participating in agroforestry with PES as compared to smaller farms. For non-participants, an additional year of formal education and experience could reduce profit inefficiency. Thus, these schemes should target poor female smallholders if they want to get the most economic empowerment out of their program. If the poorest women are targeted, the marginal effect might be smaller as compared to poor women, but still positive.

© 2018 Elsevier B.V. All rights reserved.

1. Introduction

In recent years, agroforestry in the form of tree cultivation on farmland has received substantial attention, as this form of intercropping entails economic and ecosystem services benefits (Benjamin, 2015). The first round effects of agroforestry primarily consist of economic benefits in the form of additional income (Foster and Neufeldt, 2014). Second round effects comprise ecosystem services benefits, particularly climate regulation services (Millennium Ecosystem Assessment, 2005). The climate regulation services provided by agroforestry schemes include carbon sequestration (capture and storage) which is remunerated by payment for ecosystem services (PES). Wunder (2014, p. 8) defines PES as “voluntary transactions between service users and service providers that are conditional on agreed rules of natural resource management

for generating offsite services” Meanwhile, smallholder farmers in sub-Saharan Africa are realizing that agroforestry PES schemes (henceforth referred to as *agroforestry PES schemes*) contribute to more viable livelihoods and serve as a climate change mitigation and adaptation strategy (Benjamin et al., 2016; Masiga et al., 2012).

However agroforestry, as a form of conservation and climate-smart-agriculture, is perceived not to be gender neutral in terms of economic empowerment (Farnworth et al., 2016, United Nations, 2014). Despite the active involvement of women in agriculture and agroforestry in sub-Saharan Africa, the low number of trees on their farmland, among other factors, reflects limited participation in agroforestry (Kiptot and Franzel, 2012). Buchenrieder (2004), Ogunlela and Mukhtar (2009) and Kiptot and Franzel (2012) argue that, while women contribute significantly to food security, most farm-level decisions and control over productive resources such as land are taken by men, with women only benefiting from the by-products of men's trees for subsistence purposes. Vardhan and Catacutan (2017) suggest that women may be excluded from agroforestry PES schemes in parts of sub-Saharan Africa because the structure of traditional land tenure systems was naively neglected when agroforestry PES schemes were established.

* Corresponding author at: Technische Universität München, Department of Agriculture and Food Economics, Alte Akademie 12, 85354 Freising, Germany. Fax: + 49 (0) 8161 71 3030.

E-mail addresses: emmanuel.benjamin@tum.de (E.O. Benjamin), oreoluwa.ola@tum.de (O. Ola), buchenrieder@yahoo.de (G. Buchenrieder).

¹ Fax: + 49 (0) 8161 71 3030.

To counterbalance some of these deficits, Pascual et al. (2014) suggest that incorporating gender aspects into the planning and implementation process of agroforestry PES schemes may empower women. Economic empowerment² is understood as the ability of women to make decisions on production, income, work, leisure and access to inputs. The consequence is more gender equity (Alkire et al., 2013; Mehra, 1997). Proctor et al. (2008) argue that PES schemes that address equity issues such as aiming at a sound gender balance and ensuring that member benefits exceed costs (both economic and social), will observe an increase in participation. Pascual et al. (2014) emphasize that efficient agroforestry PES schemes achieve robust and sustained outcomes when the needs of marginalized and resource-poor people, i.e. equity issues are taken into consideration. Shames et al. (2012) and Benjamin and Blum (2015) find that the International Small Group Tree Planting Program (TIST) in Kenya, an agroforestry PES scheme, was able to promote the participation of women smallholder farmers. This was achieved, among others, by adopting a gender balance approach and enforcing a 40% quota for women as well as social networking. Benjamin and Sauer (2018) also found the TIST program to be an efficient PES scheme. It, therefore, seems worthwhile to analyze gender equity in agroforestry PES schemes such as TIST and examine whether, among others, the inclusion of women smallholders has resulted in their economic empowerment.

Several studies in the past have tried to conceptualize empowerment in the sense of social equity in PES schemes, notably those by McDermott et al. (2013), Mahanty et al. (2013), Proctor et al. (2008), Pascual et al. (2014) and Vardhan and Catacutan (2017). We rely primarily on the studies by McDermott et al. (2013) and by Pascual et al. (2014) as the basis for our theoretical framework since it considers equity from a multi-dimensional perspective. PES schemes improve the local value of ecosystem services and engender changes that might not benefit local ecosystem services providers (Corbera and Brown, 2010). Unless the implementing entities adopt corrective measures, gender inequity among providers of ecosystem services can worsen, especially when initial institutional conditions do not favor women (McDermott et al., 2013). McDermott et al. (2013) argue that the definition and concept of equity (fair share) is not the same as equality (equal consideration for all). Equality does not take into account pre-existing conditions that engender inequity. Hence, equality of opportunity can result in unequal achievement in diverse indicators such as income, welfare, rights, and liberty. We concentrate on the equity accorded to (poor)³ women, hypothesizing that this will contribute to their economic empowerment. The research on gender equity in a local setting, according to McDermott et al. (2013) should be considered from three or four (see Pascual et al. (2014) main dimensions of equity: distributive, procedural and contextual (recognition).

The distributive gender equity dimension examines how benefits and costs from ecosystem service provision within a PES scheme are shared. This dimension is particularly important for PES practitioners. Benefits comprise monetary (e.g., revenues from increased yields, PES) and non-monetary benefits (e.g., improved social and

human capital) derived from participating in PES schemes. Costs, apart from direct management and opportunity costs, include costs of limiting access to resources such as land, capital, and markets (Pascual et al., 2014). Pascual et al. (2014) argue that when PES schemes fail to promote equitable distribution of costs and benefits, the positive outcomes of PES schemes are often unsustainable. According to McDermott et al. (2013), the distribution of costs and benefits could be based on merit, need, equality or social welfare. The procedural gender equity dimension revolves around the representation and participation of women in the decision-making process. It assesses adequate steps instituted to correct the exclusion of women in decision-making and control over resources, irrespective of its causal origin. Contextual gender equity recognizes that women have often been denied access to power. Power facilitates access to and control over resources. Those who wield power are also able to influence the behavior of others, often without coercion when such powers have been embedded in the institutions and practices that govern society. Therefore, unequal power amplifies the inequities related to the distribution of benefits and costs, as well as who participates in decision making. Consequently, pre-existing beliefs, culture and practices in the program location, should be considered when designing an equitable program and envisioning how it can economically empower women. Pascual et al. (2014) further describes contextual equity as “recognition” and “context.” Both terms infer respect for value systems and social norms, and recognition of pre-existing conditions such as power relations. The ability of women to shape and influence discussions regarding a PES scheme is part of the context, their educational attainment plays a role here. The connection among these dimensions constitutes the basis of equity in a system: the orientation of resources, capabilities, and power as well as the values and institutions that drive the system (McDermott et al., 2013).

Other additional considerations regarding equity encompass the target groups, goals and pre-existing conditions. These additional considerations frame equity in terms that reveal ‘who’ needs equity, ‘what’ the goals of equity are, and ‘how’ the parameters of equity are set (McDermott et al., 2013). Gender equity analysis ought to specify precisely its subjects. For example, assessing equity at an individual level might entail comparing women with men or comparing women operating in different social units (in this study, between TIST and non-TIST participants, and the distribution of benefits among TIST participants). The goals of gender equity are objectives set to achieve a minimum level of either distributive or procedural gender equity. In market-based mechanisms, such objectives range from no equity, to doing no harm, or to advance equity. In promoting equity goals, PES scheme managers must recognize drivers of inequity (pre-existing conditions), outline actions to reduce inequity, set parameters of what constitutes equity, and monitor those parameters for progress. Clearly, it is up to the management level of agroforestry with PES schemes to consider the equity dimensions outlined by McDermott et al. (2013).

It is plausible that female farmers join an agroforestry PES scheme to convert their smallholder farms into more climate-resilient and profitable (i.e., economically empowered) enterprises. Nevertheless, given the fact that women farmers in parts of sub-Saharan Africa are subject to production constraints, especially incomplete land use rights, and keeping in mind that land must be set aside for tree cultivation, those who eventually participate in and/or benefit from agroforestry PES schemes may not be the poorest of the poor. This leads to the research questions:

Does an equitable agroforestry scheme with PES have the potential to economically empower women in sub-Saharan Africa?

Can these female smallholder farmers, who benefit from agroforestry PES schemes, be characterized as poor or even as the poorest of the poor?

² The ability to generate revenues from one's occupation has an influence on choices and thus on empowerment (see Kabeer, 1999).

³ The poor can be classified as smallholder farmers, producing mainly for subsistence purposes, while the poorest of the poor are the landless, who often rent land or are given temporary right for free by land owners. As for the purpose of this study, female smallholder farmers with less than 2.5 hectares of arable land are considered poor (World Bank, 2003), landless female farmers are considered the poorest of the poor. This differentiation applies also to better trained and educated female farmers versus illiterate female farmers. According to The Ministry of Agriculture, Livestock and Fisheries (MoALF, 2016), the average on-farm per capita income per year for female headed households in Embu, one of our survey regions, was KSh 36,779 (US\$ 1.18) per day which, compared to the US\$ 1.90 per day (2011 PPP) poverty line of the World Bank, clearly shows that women smallholder farmers are poor.

Download English Version:

<https://daneshyari.com/en/article/6556298>

Download Persian Version:

<https://daneshyari.com/article/6556298>

[Daneshyari.com](https://daneshyari.com)