



To process or not to process? Factors enabling and constraining shea butter production and income in Burkina Faso



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ABSTRACT

Processing of environmental products by rural households in developing countries is often considered a way to lift poor natural resource-dependent households out of poverty by increasing the returns to labour of their harvesting activities. Still, the bulk of environmental products in developing countries is commercialised unprocessed. This paper examines the factors enabling and constraining the processing of shea nuts into shea butter in Burkina Faso. Our analysis is based on socio-economic survey data collected from 536 households in the Zoundwéogo and Cascades provinces of Burkina Faso, as well as qualitative interview data collected from 74 shea butter producers in the province of Sissili. The factors affecting the selection of shea butter production as a livelihood activity as well as the economic success of this activity are analysed using a Heckman selection model. Moreover, we study the effect of locality of residence, defined as place of residence along the rural–urban continuum, on shea butter processing and income. We demonstrate that, among members of a shea butter producer Union, women living in urban areas produce significantly larger quantities of shea butter for sale to the Union and earn superior revenues from these sales than their rural counterparts. We relate these urban–rural discrepancies to the physical and socio-economic conditions that characterise life in different localities and propose policy recommendations based on our findings.

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1. Introduction

The literature abounds with evidence of environmental resources' contribution to household income in different regions of the developing world. For example, work by Vedeld et al. (2004) has shown that total income derived from forests averaged 22% of total household income in 17 study areas in developing countries. Environmental product collection is often referred to as a low return to labour activity (Arnold and Pérez, 2001; Angelsen and Wunder, 2003), and the potential of environmental products to lift households out of poverty has thus far been qualified as limited (Marshall et al., 2006; Belcher and Schreckenberg, 2007). However, environmental product collection and processing can contribute to diversified livelihoods¹ and thereby reduce households' vulnerability to shocks and seasonal variations in other income sources (Ellis, 2000). Many case studies have examined the

effect of household income on environmental resource reliance, and the general trend is that while richer households generate higher absolute income from the environment, poor households derive a higher share of their total income from the environment (e.g. Pouliot and Treue, 2013). According to Shackleton et al. (2011), adding value to environmental products (e.g. through processing for products that have external markets) could represent a way to lift poor households out of poverty.. This has also been previously supported by Hyman (1995) and Arnold and Pérez (2001). Still, even when processing technologies and external markets exist, gatherers often sell environmental products unprocessed. This could be due to a pressing need for money, inability to organise into associations, lack knowledge of processing techniques, lack of necessary capital and markets, and/or inability to take risks (Hyman, 1995).

In the Western part of Sub-Saharan Africa, fruits and nuts from *Vitellaria paradoxa* Gaertn. C.F. (syn. *Butyrospermum parkii*; shea in English and *karité* in French) trees are widely collected and generate an important share of total household income (Pouliot, 2012). The shea tree grows uncultivated among the grass and shrubs of parklands as well as in forests of 21 countries across the Sudano-Saharan climatic zone (Hall et al., 1996; Boffa, 1999; Hatskevich et al., 2011), and the main intervention in terms of its management is the removal of unwanted individuals (to control for excessive regeneration and trees with poor yields) (Schreckenberg, 2004;

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¹ As defined by Ellis (2000), "a livelihood comprises the assets (natural, physical, human, financial and social capital), the activities, and the access to these (mediated by institutions and social relations) that together determine the living gained by the individual or household.

Elias, 2013). Shea kernels are widely exported for use in the international cosmetic and chocolate industries (annual value of total exports from Africa was estimated at USD 30 million in 2004 (Lovett, 2004)), and shea nuts represent one of Burkina Faso's main export commodities (FAO, 2011). Although most households in the central and southern regions of Burkina Faso are to some degree involved in the collection of shea nuts, a much lower percentage of them process shea kernels into butter (Pouliot, 2012). In 2004, it was estimated that 80% of all annual shea exports were in the form of unprocessed shea kernels (Lovett, 2004). Shea butter is nevertheless said to be the preferred cooking oil of the region, and is widely used locally as a moisturizer and a medicine (Chalfin, 2004).

Shea nuts are one of the few products in West Africa whose extraction, processing and sale are under the control of women. In a study from Burkina Faso, Pouliot (2012) found that 94% of the 505 interviewed households were involved in shea fruit and/or kernel collection, and that in 92% of the cases this activity was carried out exclusively by women and girls. Moreover, income from shea nuts and kernels was found to contribute as much as 12% of total household income for poor households, and 7% of total household income for the better-off households.

It is argued that the processing of environmental products such as shea nuts offers an avenue for rural households and especially women to increase their income and improve their quality of life. Hence, advocates for gender equality and sustainable development are pursuing the growing global demand for shea butter to ensure that female producers participate in emerging markets for the commodity, enhance their remuneration, and improve their quality of life. Accordingly, since the 1990s, many countries of sub-Saharan West Africa such as Burkina Faso have witnessed the proliferation of shea butter projects, sponsored by the United Nations Development Fund for Women (UNIFEM), the United National Development Program (UNDP), bilateral aid agencies, and NGOs.

Despite the global attention the environmental product has garnered, however, there remains a lack of understanding about the contextual factors that enable households, and more specifically their female members, to participate in shea butter processing and sale; or that alternatively prevent them from doing so. Such an understanding is required to tailor development interventions to appropriate beneficiaries, to lift the constraints households face with respect to shea butter production, and to create favourable conditions for the promotion of shea butter processing and sale.

Accordingly, the purpose of this paper is to analyse the factors enabling or constraining shea butter production and the influence they have on shea returns. We pursue this aim stepwise: first, we identify the determinants associated with a household's ability and decision to process shea butter as part of its diversified livelihood strategy. We subsequently examine the factors associated with higher returns among households selecting shea butter processing as an activity. In other words, we first identify who processes shea butter (which specific households participate in production), and subsequently analyse which of those households derive the largest income from shea butter. Such an analysis uncovers some of the constraints that hamper women's ability to engage in and/or benefit from shea butter processing. We finally direct our analysis to the influence locality of residence, defined as place of residence along the rural–urban continuum, can have on shea butter processing and earnings. Drawing upon a case study of shea butter producers who hold membership in a shea producer association, we examine how participant members' differentiated shea butter production quantities and revenues from these sales reflect favourable or constraining factors associated with the physical and socio-economic conditions that characterise life in different localities. Results from this study can meaningfully inform the debate on the role of environmental products processing on poverty

alleviation and point to policy recommendations, which we propose in the paper's final section.

2. Methods

2.1. Case study areas

Burkina Faso is one of the world's poorest countries (UNDP, 2010). More than half of the country's population lives on less than USD 1.25/day (UNDP, 2010), and 82% of the population resides in rural areas (African Development Bank, 2003) relying strongly on natural resources for its nutrition, health and income (FAO, 2003; Pouliot and Treue, 2013). Women figure prominently among the country's poor (SIDA, 2004). At the turn of the 21st century, money from donors represents a key contribution to the Burkinabè economy and international aid to Burkina Faso has proliferated into numerous development projects, including those focused on shea butter production and trade (Elias and Carney, 2007; Compaoré, 2000). Data for this study were collected in three sites in the country's centre-south, south-west, and centre-west regions: (i) Nobéré site, (ii) Banfora site and (iii) Léo site. In all cases, the sites are named after the closest town/city but actually regroup a number of villages/towns.

2.1.1. Nobéré site (11°30' N and 00°58' W)

Nobéré is a large village (pop. approx. 3500 people) situated in the province of Zoundwéogo in the centre-south region of Burkina Faso; one of the poorest regions of the country (MECV, 2004) (Fig. 1). The climate is dry with annual precipitation ranging from 800 to 1000 mm. Local agriculturalists cultivate millet, sorghum and to some extent maize, primarily for subsistence. Animal husbandry largely complements these agricultural practices. Land cover mainly consists of savannah, fallows and parklands. The site borders the nature reserve "Parc National Kaboré Tambi" where land cover consists mainly of open forest with patches of savannah.

In total, 279 households were randomly selected from 9 villages of the region (including Nobéré). Village selection was done in order to capture variation in market access and remoteness. Adult men and women of Moose descent—who largely outnumber residents of other ethnicity in the region—as well as adult men and women of Fulani, Gurunsi, Tensoba, Basloko, and Kalinga descent participated in the study. See Pouliot et al. (2008) for more site- and village specific information.



Fig. 1. Map of Burkina Faso showing the location of the three study sites.

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