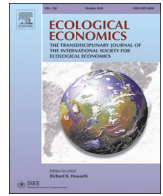




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Analysis

## Understanding Poverty in Cash-crop Agro-forestry Systems: Evidence from Ghana and Ethiopia

M. Hiron<sup>a,\*</sup>, E. Robinson<sup>b</sup>, C. McDermott<sup>a</sup>, A. Morel<sup>a,c</sup>, R. Asare<sup>d</sup>, E. Boyd<sup>e</sup>, T. Gonfa<sup>f</sup>, T.W. Gole<sup>f</sup>, Y. Malhi<sup>a</sup>, J. Mason<sup>d</sup>, K. Norris<sup>c</sup>

<sup>a</sup> Environmental Change Institute (ECI), School of Geography and the Environment, University of Oxford, UK

<sup>b</sup> School of Agriculture, Policy and Development, University of Reading, UK

<sup>c</sup> Institute of Zoology, Zoological Society of London, UK

<sup>d</sup> Nature Conservation Research Centre, Ghana

<sup>e</sup> LUCSUS (Lund University Centre for Sustainability Studies), Lund University, Sweden

<sup>f</sup> Environment, Climate Change and Coffee Forest Forum, Addis Ababa, Ethiopia

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### ABSTRACT

This paper examines the linkages between cash-crop income and other dimensions of poverty to interrogate assumptions regarding the relationship between agricultural income and poverty alleviation. The analysis treats poverty as a multi-dimensional and socially disaggregated phenomenon. The paper employs a mixed methods approach to case studies of Ghana and Ethiopia to explore two critical issues. First, how income from cash crops is linked with other dimensions of poverty. Second, how income and land are socially disaggregated. The paper then draws on qualitative data to critically reflect on how poverty is understood within studied communities. The results show that some, but not all, indicators of poverty vary across income quartiles and that significant differences exist across social groups. The analysis suggests that although cash crops are essential, focusing on increasing income from cash crops will not necessarily have a predictable or progressive impact on wellbeing. Furthermore, the analysis highlights how contextual factors, such as the provision of communal services, the nature of land holdings and the quality of local governance mediate the potential poverty alleviating outcomes of income increases. Future development of sustainable intensification strategies should focus on the prevalence of trade-offs and the fundamental social relations underpinning poverty dynamics.

### 1. Introduction

In the decade since the World Bank published its Annual Report on Agriculture and Development (World Bank, 2007), sustainable intensification has emerged as a critical area of policy focus (Campbell et al., 2014; Caron et al., 2014; Garnett et al., 2013; Godfray and Garnett, 2014; Tiftonell, 2014; Vanlauwe et al., 2014). Central to this agenda has been the pursuit of addressing yield gaps, i.e. gaps between the realized and potential per hectare yield of a given crop, to both minimise the pressure agriculture exerts on land and to alleviate poverty (Dzanku et al., 2015; Tiftonell and Giller, 2013). However, there has been limited engagement between work on the sustainable intensification of agriculture and more nuanced understandings of poverty as a multi-dimensional and socially disaggregated phenomenon (Alkire and Foster, 2011; Bourguignon and Chakravarty, 2003; Daw et al., 2011; Green and Hulme, 2005; Mosse, 2010; Sandhu and Sandhu,

2014; Shepherd, 2011). Against this background, this paper aims to address this gap by examining two key elements of poverty and production. First, the paper explores the relationship between income from key cash crops (cocoa in Ghana and coffee in Ethiopia) and other dimensions of poverty. Second, the paper considers how key dimensions of poverty are socially disaggregated. Thus the paper considers the extent to which addressing agricultural incomes, through sustainable intensification for example, can reduce poverty in rural farming households.

Despite growing appreciation that increases in agricultural productivity, ecological health and poverty alleviation are often characterised by trade-offs (Howe et al., 2014; Power, 2010; Rodríguez et al., 2006; Zhang et al., 2007), terms such as ‘agricultural development’ and ‘sustainable intensification’ continue to gain traction in discourse because of their ‘euphemistic qualities’ and ‘normative resonance’ (Cornwall, 2007: 472). This deflects attention away from a

\* Corresponding author.

E-mail address: [mark.hirons@ouce.ox.ac.uk](mailto:mark.hirons@ouce.ox.ac.uk) (M. Hiron).

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precise and detailed analysis of what strategies promoted in their pursuit actually entail and the distributional issues that are associated with agricultural interventions (Harris and Orr, 2014). These concerns permeate a range of agriculture and development debates, including: the relative importance of agriculture and non-agricultural activities for alleviating poverty (Christiaensen et al., 2011; Diao et al., 2010; Dorosh and Thurlow, n.d.); the benefits, costs and possibilities entailed by promoting either large- or small-scale farming (Collier and Dercon, 2014; Hazell et al., 2007; Wiggins et al., 2010); and the importance of subsistence crops for food security compared to cash-crops for export (Anderman et al., 2014; Govereh and Jayne, 2003; Herrero et al., 2014; Michler and Josephson, 2017).

Developing a more sophisticated knowledge base upon which agricultural development policy can be developed requires addressing two critical questions: what kind of poverty is being alleviated, and for whom. Engaging with these questions requires detailed research that goes beyond analysing aggregated large-scale data sets at a national-level that equate income with poverty. Moving beyond an income-based conceptualisation of poverty towards a multi-dimensional understanding highlights the difference between stochastic and structural poverty, which is particularly important in agricultural settings (Morduch, 1994). Stochastic poverty refers to components of poverty that fluctuate, in part, to factors beyond the control of the household, e.g. droughts or floods impacting agricultural yields and incomes; while structural poverty refers to individuals or households that lack access to productive assets, such as land, and often underpins persistent or chronic poverty (Adato et al., 2006; Carter and Barrett, 2006; Carter and May 2001; McKay, 2013; Nielsen et al., 2012; Radeny et al., 2012). This paper categorises different dimensions of poverty as either structural or stochastic, and within the structural component further distinguishes between dimensions which are dependent on communal provision of infrastructure (such as the provision of healthcare facilities) or are experienced on an individual or household level (such as access to land). This framing helps clarify the relationship between agricultural cash-crop income and the different dimensions of poverty.

The rest of the paper is organised as follows. The next section introduces the case studies and describes and justifies the methods employed. After providing an overview of summary statistics, Section 3 describes the key results in three sections. First the relationship between income from agro-forestry cash crops and other key dimensions of poverty is described by comparing indicators of different dimensions across income quartiles. Second the social disaggregation of key poverty dimensions (income and land) is assessed across difference social groups (gender, age, and ethnicity). And third, the primarily quantitative analysis is supplemented with a qualitative analysis that widens the scope of inquiry to provide a broader and richer narrative of how the research participants understand poverty and the contextual factors that shape the dynamics of poverty in the study sites. Section 4 reflects on the implications of the insights this mixed methods analysis provides, particularly with respect to ongoing agriculture-development debates, especially focussing on evolving sustainable intensification strategies that focus on increasing incomes through increasing yields.

## 2. Methods and Materials

### 2.1. Study Sites and Sample

This analysis draws on data collected from sites in Ghana and Ethiopia (see Fig. 1) during several field trips in 2015. Cocoa and coffee respectively are central to the economy of each country and both countries aim to sustainably increase production in the coming years (Abdu, 2015; Asare, 2014; COCOBOD, 2014). The cases were selected to illustrate and explore the range of possible linkages between cash-crops and poverty in agro-forestry systems, rather than for direct comparison.

In Ghana, data were collected from 6 forest fringe communities in

the Assin South District in the Central Region. The landscape is dominated by the heavily protected Kakum National Park and the surrounding communities that have been established for around 50–80 years, and are predominantly small-holder farmers growing cocoa, oil palm and vegetables. Most land is owned by the traditional authorities, but private land also exists. A variety of tenurial arrangements exist in the area including caretaker farmers and landlords, and farmers who own their own land.

In Ethiopia, data were collected from 9 Kebeles (Villages) from 2 Woredas (Districts) in the Illubabor zone in Oromia which is in the south west of the country. One of the Woredas is a long-settled area on the main road between two major urban centres, and the other has a recent history of growth since the 1980s when migrants from elsewhere in Ethiopia arrived in response to famine and political upheaval. The area hosts the Yaju Coffee Forest UNESCO Biosphere Reserve recognized and listed by UNESCO in 2010 on the list of the World Network of Biosphere Reserves, with the primary objective of protecting wild coffee (*Coffea arabica*) genetic resources as well as other natural and cultural heritage. The landscape is dominated by shade-grown coffee, other food crops, livestock and, increasingly, chat (*Catha edulis*). All land in Ethiopia is owned by the Federal state and farmers are vested with use-rights. At a local level, Kebele managers (unelected) and chairmen (locally elected) play a key role in distributing available land. Recent efforts to provide farmers with formal certificates of use-rights under the Rural Land Administration Programme (RLAP) have not yet been implemented in the area, at the time of writing, according to officials from the Rural Land Administration and Environmental Protection Bureau. These sites provide a basis for contrasting the characteristics of poverty in cash-crop systems in contexts which vary across crops, and across national political, economic and social contexts. The current study focuses on a local level analysis. However, we recognise that local dynamics are embedded in much wider sets of social, economic and political relations.

In both countries villages were sampled spatially with respect to their distance to forests or forest patches. Sampled villages lay on a distance gradient between approximately 1 km from forest edge and approximately 5 km from the forest. Within the sampled villages, households were randomly sampled (stratified by gender of household head and, in Ethiopia, wealth level,<sup>1</sup> Ghana  $n = 108$ ; Ethiopia  $n = 240$ ). These household surveys were supplemented with a series of focus groups with farmers selected for their in-depth knowledge of the communities and the challenges they face (Ghana  $n = 12$ , 6 of which were male only participants, 6 of which were female only participants; Ethiopia  $n = 4$ , 2 mixed, 1 male only participants, 1 female only participants), key informant interviews with farmers (Ghana  $n = 36$ ; Ethiopia  $n = 20$ ), purposively selected government officials (Ghana  $n = 28$ ; Ethiopia  $n = 52$ ) and ethnographic observations undertaken by in-country field assistants who recorded information on the factors influencing poverty and agricultural practices among individuals and households in the communities. Together these data provide insights into the dynamics of poverty that are hard to capture in a cross-sectional data set. Differences in the emphasis of data collection between countries reflect differences in social contexts, available research assistance and logistical constraints. The following section describes these methods in detail.

### 2.2. Interviews and Focus Groups

The data generated from focus groups and semi-structured interviews with key stakeholders (see above) were used to inform the design

<sup>1</sup> Household lists including the gender of the household-head of each community was compiled by community leaders. In Ethiopia, Kebele committees also identified households as either poor, neither poor nor rich, or rich, and this framework guided proportionally representative sampling. In Ghana, community leaders were unwilling to identify households by wealth level and therefore the sample was only stratified by gender of household head.

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