



Effect of Certified Organic Production Systems on Poverty among Smallholder Farmers: Empirical Evidence from Kenya

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Summary. — This study evaluates the effect of certified organic production on poverty in smallholder production systems. Data was collected from cross sectional survey of local market-oriented peri-urban vegetable and rural honey producers in Kenya. Poverty was measured using the multidimensional poverty methodology and endogenous switching probit model used to assess the effect of certified organic production on multidimensional poverty. Findings were that certified producers were less likely to be multidimensional poor compared to their counterfactual case of not participating in organic certification schemes. Additionally, noncertified producers would be less likely to be poor if they were to participate in organic certification production.
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Key words — certified organic production, multidimensional poverty, endogenous switching probit model, smallholder, Kenya

1. INTRODUCTION

Globally, agri-food systems are experiencing transformation with emergence of food standards and vertical integration of farmers along the supply chains (Asfaw, Mithöfer, & Waibel, 2010; Bolwig, Ponte, du Toit, Riisgaard, & Halberg, 2010; Subervie & Vagneron, 2013). The transformation is attributed to growing consumer concerns on food attributes, environmental sustainability, social benefits of agricultural production systems, urbanization, and the rising standards of living (Aung & Chang, 2014; Denver & Jensen, 2014). One of the fast growing agri-food systems is organic farming, giving rise to organic food production and marketing standards (Hattam, Lacombe, & Halloway, 2012). Producers and marketers of organic products certify their processes to guarantee consumers that the food they consume have met the required food safety, social, and environmental thresholds.

In developing countries, considerable growth of organic-certified production systems in the past two decades has been reported destined to European and North America markets (IFOAM, 2013; Oberholtzer, Dimitri, & Jaenicke, 2012). However, there has been also considerable growth in local oriented organic production systems in sub-Saharan Africa, Kenya included, as a result of urbanization and rising standards of living (IFOAM, 2013; Probst, Houedjofonon, Ayerakwa, & Haas, 2012). This has made organic certification schemes popular, hinged on a multitude of potential environmental, health and social benefits (Barham & Weber, 2012; Bennett & Franzel, 2013). Important potential social benefit from certified organic farming in developing countries among smallholder production is the ability to provide integrated sustainable conduit out of poverty trap by enhancing the development of farmers' livelihood assets (Bennett & Franzel, 2013; Setboonsarng, 2006). This has made organic certification schemes an attractive agribusiness model and governments, nongovernmental organizations, donors, and other developmental partners are being involved in as livelihood improvement and sustainable developmental pathway in smallholder production systems, through access to high-value markets

(IFOAM, 2013; Kleemann & Abdulai, 2013). Further, there is ongoing drive to integrate organic agriculture component in most poverty eradication policies and sustainable development agenda in Africa (Willer & Lernoud, 2014).

Pro-poor certified organic farming in Kenya, like in many developing countries, is mainly through farmer based organizations. Certified organic production is being promoted against recent statistics that 47.8% of the population in Kenya is multidimensional poor and 27.4% being vulnerable to poverty, using Demographic and Health Survey (DHS) of the year 2009 (OPHI, 2013). Additionally, adoption of Millennium Development Goals by United Nation member states shifted development focus from economic growth in developing countries to poverty reduction, where majority of the poor depend on agriculture for their livelihood (Christiaensen, Demery, & Kuhl, 2011). However, the question is what is the effect of certified organic schemes on poverty status in smallholder production systems?

Certified organic production could contribute to poverty reduction in various ways. Smallholder farmers, who are mainly resource constrained, could benefit from: (i) savings in form of cash from purchases made on external inputs; (ii) price premium on certified organic produce through access to high-value markets; (iii) value addition on organic produce through processing and packaging; and (iv) surplus production caused by change from conventional production to certified organic production (Asfaw *et al.*, 2010; Barham & Weber, 2012; Bennett & Franzel, 2013; Beuchelt & Zeller, 2011; IFOAM, 2013; Kilcher, 2007; Reardon, Barrett, Berdegué, & Swinnen, 2009). Certified organic production systems also provide interactive learning and other knowledge-sharing platforms, which enhances farmer's analytical skills, innovative

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thoughts, and the ability to design on-farm solutions to their farming problems. The knowledge gained positively shapes farmer's human development pathways, eventually leading to poverty reduction (Donovan & Poole, 2014; Kilcher, 2007). Further, financial benefit from organic production system is important in facilitating acquisition of human development assets, leading to poverty reduction (Bennett & Franzel, 2013; Beuchelt & Zeller, 2011; Donovan & Poole, 2014).

On the contrary, Humphrey (2006) argues that stringent organic food safety standards may dissuade participation of smallholder resource-constraint farmers in high-value markets, thus leading to further marginalization. High labor cost and low yield in organic production systems compared to conventional production systems has also been reported to disadvantage organic producers, hence hindering its ability of being pro-poor (de Ponti, Rijk, & van Ittersum, 2012; Goklany, 2002; Oelofse *et al.*, 2010). To refute or affirm the hypothesis that organic certification leads to poverty reduction in smallholder production systems justifies the need for systematic empirical analysis. Further, few studies exist in literature to overtly explain the effect of value chain activities on poverty (Bolwig *et al.*, 2010). Therefore, effect of certified organic production on poverty status assessment would shed more light on the level of understanding on its true effect. This is in the face of proliferation of pro-poor local market-oriented certified organic production systems as a result of increasing income and urbanization in developing countries, Kenya included. Hence, analysis of the effect of certified organic production schemes on poverty would provide the relevant empirical evidence and policies that could benefit program planners and policy analyst.

In light of the foregoing, the objective of the study is to assess the effect of certified organic production on poverty in smallholder farming production systems. The novelty of the study is to make contribution to empirical literature in terms of effect of local market-oriented organic production systems on poverty. This is as opposed to related prior studies (Bolwig, Gibbon, & Jones, 2009; Chiputwa, Qaim, & Spielman, 2013) which have focused on export markets. There exists a dearth in micro level empirical evidence in literature that tests the hypothesis that certified organic agriculture is really pro-poor among smallholder farmers focusing on fast emerging pro-poor local market-oriented production systems in Kenya. The study demonstrates so using data from cross-sectional survey of peri-urban vegetable and rural honey producers to assess the effect of local market-oriented certified production systems on poverty.

2. MATERIALS AND METHODS

(a) Data

Data were obtained from cross sectional household survey among peri-urban vegetable producers in Ongata Rongai district and rural honey producers in Mwingi District during the months of June and July, 2013 in Kenya. In vegetable production systems, data were collected from conventional producers (also referred as noncertified vegetable producers in this study) and certified organic producers.¹ In contrast, among honey producers, all honey production in Mwingi is considered organic because of minimal usage of external inputs in agricultural production and existence of forest buffer zones. Hence, in organic honey production system, data were collected from noncertified and certified organic honey producers. Producers sampled in both case study sites had practiced commercial farming in their respective production systems for at least

three years. The two studies were purposively sampled because they have relatively developed pro-poor crop and livestock organic production and marketing systems supplying local markets and involving relatively large number of farmers. Plans are in advanced stage in certified organic production systems to diversify the schemes to exploit demand export market. Certified organic produce are meant for the growing local niche market in urban areas that are conscious of the quality of food intake due to the increasing income levels and the negative effects of urbanization. Certified organic producers supply their produce to local supermarkets, restaurants, hotels, several organic shops, other urban markets and in flea market in Nairobi, mainly through farmer groups and as individuals. Further, the two certified organic production systems benefit from group certification and initial certification costs is subsidized by nongovernmental organizations in order to facilitate the participation of the poor in the schemes. Certification of organic farming processes is through local farmer producer groups formed for the purpose of enhancing organic farming in respective production systems.

Ongata Rongai district is along the great rift valley near the Ngong' hills, located southwest of Nairobi, the capital city of Kenya in Kajiado County. The district receives bimodal rainfall pattern; short rains occurring between October and December and long rains between March and May. The certified organic vegetable production project is coordinated by Kenya Organic Agricultural Network (KOAN) (a local nongovernmental organization). Certified organic farming was initiated in 2007 by KOAN and groups of farmers to curb the problem of rapid soil degradation and to enhance alternative livelihood strategies, thus helping in alleviation of poverty. Organic production and marketing systems are certified by Encert through farmer groups to reduce the cost of certification. The groups also help in ensuring larger marketable produce throughout the year through members' coordinated production, reduced contract making costs with consumers and transportation of organic produce to the markets. In 2003, the Ongata Rongai district which was in the former Kajiado district had 11% of the population living below the Kenya's national poverty line. However, some sub locations had poverty incidences of up to 93% (CBS, 2003). Based on Kenya Integrated Household Budget Survey of 2009, the larger County of Kajiado had poverty levels of 11.6% (CRA, 2011). Government extension officers and Community Sustainable Agriculture and Healthy Environmental Program (CSHEP) provide technical assistance to farmer groups ranging from biodiversity and soil conservation, food production and marketing, food and quality standards, and crosscutting issues in general human development.

Mwingi district on the other hand is located in Eastern Kenya and is a semi-arid region receiving rainfall of between 500–700 mm. It is a highly food insecure region where the livelihood of the residents heavily hinges on rain fed agro-pastoralism and honey production.² Certified organic production is through a main producer group (Mwingi Honey Place) established in the year 2002 and currently involving over 2,000 households in 38 groups. The farmer groups receive technical assistance and inputs in form of high-yielding Langstroth bee hives from International Centre of Insect Physiology and Ecology (ICIPE) and International Fund for Agricultural Development (IFAD). The member's organic production and marketing systems are certified by KOAN and Institute of Marketecology through farmer groups. The intervention has led to 10–18% increase in productivity, which has increased household income by 15% (ICIPE, 2013). Based on Kenya Integrated Household Budget Survey of 2009, Kitui County which Mwingi falls had poverty levels of 63.5% (CRA, 2011).

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