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# The impact of contracts on organic honey producers' incomes in southwestern Ethiopia



Jony Girma, Cornelis Gardebroek \*

<sup>a</sup> Agricultural Economics and Rural Policy Group, Wageningen University, Hollandseweg 1, 6706 KN Wageningen, The Netherlands

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#### ABSTRACT

In southwestern Ethiopia honey is a non-timber forest product that provides income for many smallholders. Some of these beekeepers supply their honey under contract to a company that markets their organic honey internationally allowing them to access premium markets. Since both production and marketing depend crucially on the forest, both smallholders and the company have an interest in preserving the forest. An important question is whether smallholders also benefit economically from supplying under contract. The objective of this study is to examine the contribution of participation in contract supply of organic honey to beekeepers' income levels in the Sheka zone in southwestern Ethiopia. Results indicate that contract supply improved quality of honey delivered, the prices beekeepers received, and total honey income per household. The findings illustrate the potential of contract supply of forest product for sustainable management of forests.

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#### 1. Introduction

In rural development strategies market oriented production is often considered a means for achieving sustainable livelihoods for the rural population. This approach is most common for industrial crops, high value agricultural products, and products for export markets (Gebreeyesus and Sonobe, 2012). Organic agricultural products are interesting in this respect due to the sustainable nature of production, their premium prices, and the growing demand for organic products worldwide. This provides good opportunities for organic honey from developing countries like Ethiopia and in particular for beekeeping households in natural forest areas since these are ideal places for organic honey production. For beekeepers the forest is not only a source for collecting honey, thereby supporting the livelihoods of smallholders (Abebaw et al., 2012; Asfaw et al., 2013; Worku et al., 2014), but it also safeguards the organic nature of it. However, in order to benefit from these markets and receive premium prices, beekeepers also face challenges in meeting the high quality standards in these markets that may also imply higher input costs. Moreover, organic production requires certification and the associated costs could be (partly) borne by beekeepers.

This study focuses on beekeepers in the Sheka zone in southwestern Ethiopia, a major honey production region. In this area improving market access for beekeepers is an important development challenge

since the remoteness of the area and the lack of an organized market system often result in low producer prices (Gazahegn, 2001). In 2005, the local government in the Sheka zone and NGOs concerned with natural forest conservation took the initiative of linking beekeepers and honey processors. Nowadays, beekeepers have two options to sell their honey; through a contract with a processing company that exports the honey as organic, or on the local market. The contract provides a higher price than the local market, but also requires compliance with organic regulations and other requirements such as mandatory bookkeeping.

The study examines the contribution of participation in contract supply of organic honey to beekeepers' income levels in the Sheka zone. In the analysis it is explicitly recognized that higher incomes may be due to higher prices, higher production levels, or both. If contract supply of organic honey has a positive impact on beekeepers' incomes this may justify support to other sectors where a similar approach could be introduced. In addition, these outcomes are relevant for natural forest conservation since supply of forest honey highly depends on the existence of the forest, so beekeepers have an interest in conserving the forest. As far as we know this is the first study to analyze the impact of contractual organic honey production. Another contribution of this study is that we separately analyze the effect of contract supply on honey prices and income from beekeeping since most studies only focus on the effects of contracts on income (e.g. Bellemare, 2012; Bolwig et al., 2009).

In this study the following research questions are central. First, are prices for honey produced under contract higher than local market prices because of the contract relationship? It could well be that a

<sup>\*</sup> Corresponding author. Tel.: +31 317 482951; fax: +31 317 484736. *E-mail addresses*: jgmeshesha@gmail.com (J. Girma), koos.gardebroek@wur.nl (C. Gardebroek).

contract stipulates higher quality requirements that would explain higher prices so that farmers without a contract but producing honey of the same quality could also obtain higher prices. A higher price for honey under contract of similar quality as honey without contract could be due to better marketing opportunities of the contracting firm. Second, what are the main factors that contribute to beekeeping income? Is it the price of honey, factors that determine the quantity of honey produced, or the contract? Third, does participation in contract supply of organic honey increase beekeepers' incomes compared to selling at local markets?

In the next section, we discuss related studies on the effects of contracts on small-scale farmers. Section 3 provides an overview of honey production in Ethiopia. Section 4 describes the survey methods and the data. The methodology is discussed in Section 5. Section 6 presents and discusses the results of the empirical analysis. Finally, Section 7 summarizes the main findings of the study and provides recommendations.

#### 2. Contract farming for smallholder farmers

#### 2.1. Concept of contract farming

Contract farming is defined as an agreement between farmer(s) and a contractor for the production and supply of agricultural products under forward agreements, frequently at predetermined prices (Eaton and Shepherd, 2001). It is an efficient way to manage production and marketing in agriculture. Contract farming serves as an economic institution operating between spot markets and vertical integration. According to Bijman (2008), Eaton and Shepherd (2001), and Singh (2002) a main objective of contract farming is to overcome problems and constraints that smallholders face. The literature indicates that there are different reasons for the farmers and processors to engage in contract farming. In general, both parties are likely to choose contract farming instead of vertical integration or spot market exchange when transaction costs and risk can be minimized (Singh, 2002). Contract farming arrangements provide farmers with access to a wide range of services that otherwise may be unattainable. Access to markets, credit, and new technologies are some of the additional benefits for farmers besides reduction of transaction costs and risk (Bijman, 2008; Slangen et al., 2008). Reliable input supply and consistent product quality are the main reasons for processing firms to conclude contracts with smallholders (Eaton and Shepherd, 2001).

#### 2.2. Empirical evidence

In early assessments of contract farming in developing countries, many case studies showed a positive effect on income. Minot (1986) reviewed contract farming in developing countries and found that in general contract farming improved farmers' incomes. Porter and Phillips-Howard (1997) also acknowledge that incomes of African farmers under contract may have improved, but that by considering other social aspects of contract farming the situation of farmers could improve even further.

There are a number of studies that explore the impact of contract farming using econometric analysis. Based on survey data collected from contract farming in poultry, maize seed, and rice seed in Indonesia, Simmons et al. (2005) found that contracts have a positive effect on farmers' welfare. The contracts for broilers and seed corn resulted in increased returns to capital but not for seed rice. For all three products contracts led to a reduction in absolute poverty. Birthal et al. (2005) found that the gross margins for contracting dairy farmers in India were almost double those of non-contracting farmers. The main reason for this difference is lower production and transaction costs for contracting growers. Warning and Key (2002) explored how participation in the NOVASEN (a private

company) program affected the agricultural income of 32,000 peanut growers in Senegal. They found that participants in the contract program increased their income substantially compared to nonparticipants. In addition, the authors found that the contract farming scheme did not favor larger or wealthier growers. Bolwig et al. (2009) found that Ugandan smallholders growing organic coffee and supplying under contracts with organic certification had revenues that are 75% higher than non-contracting coffee producers, leading to 12.5% higher household incomes. Similarly, Jones and Gibbon (2011) analyzed the income effect of participation in smallholder contractual organic cocoa production in Uganda and found that there was a positive revenue effect of contract farming. Bellemare (2012) analyzed the impact of contract farming in Madagascar across various regions, crops, and contracting firms and concluded that participation in contract farming increased household income considering this wide variety of cases. Barrett et al. (2012) synthesized results from studies in five different countries across the globe, and concluded that contract farming has positive income effects. Nevertheless, the authors also warn that on certain welfare aspects of contract more research is required, for example long-run and distribution effects of contracts. Moreover, they make a case for using more robust methods in analyzing treatment effects of contract farming on farmer welfare. Dedehouanou et al. (2013) look beyond income effects and analyze subjective wellbeing of contract and non-contact households in Senegal using panel data. They conclude that contracting mostly has a positive effect on self-reported subjective well-being and that this is due to higher incomes.

In spite of this substantial number of studies showing positive income effects of contract farming for smallholders, some studies have shown that in developing countries contracts sometimes also have negative effects (Little and Watts, 1994; Porter and Phillips-Howard, 1997; Siddiqui, 1998; Singh, 2002; Torres, 1997). Processors are likely to contract larger farmers or they may offer different types of contracts to different farmers, which can increase social inequalities in a community (Singh, 2002). It may also create conflicts within communities between farmers with and without contract (Singh, 2002). As specialization increases, it exposes farmers to asset specificity and hold-up problems or prevents them from looking for other firms that offer higher prices (Key and Runsten, 1999). Sometimes, processors increase their quality standards if supply exceeds market demand leading them to reject the surplus leading to losses for farmers (Glover, 1984). Schipmann and Qaim (2011) show that small-scale farmers in Thailand growing green peppers consider multiple elements in their choice for contract farming. Higher prices are important, but farmers also value independence, flexibility and a trustworthy relation with the company they

In general, the benefits of participation in contract farming vary between countries based on the sector involved, the type of contract, the number of agribusiness firms working in the area, type of the final market and so on. The income effect as a result of contract farming also varies accordingly. Especially in countries where contract farming is not well established, exploitation of farmers by the contracting firms may happen. Eaton and Shepherd (2001) discuss the case in which contract farming has a negative effect on farmers' incomes because of a monopsony position and opportunistic behavior of the processing firm. Lack of transparent pricing and quality control are among the factors that result in negative income effects.

Contract farming has not been applied in Ethiopia on a large scale yet. Oil crops, vegetables, barley, wheat and honey are some of the crops produced under contract farming. Nijhoff (2010) made an inventory of nine contract farming initiatives in Ethiopia. Most of these are still in its initial phase. Oil crops, vegetables and honey are produced for export markets while barley and wheat are supplied to local processing companies.

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