



Adoption of food safety and quality standards among Chilean raspberry producers – Do smallholders benefit?

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ABSTRACT

The growing importance of food quality and safety standards in international markets is influencing production and marketing conditions of farmers worldwide. The effects of this development on small-scale farmers in developing countries are controversially discussed in the scientific debate. While small-scale farmers may benefit from standard compliance in terms of better market access and technology upgrading, non-compliance may lead to market exclusion and marginalization. The present study aims to identify the factors influencing a certification according to food safety and quality standards and the impact on farm management and income among export-oriented raspberry farmers in Chile. Survey data from 57 certified and 169 non-certified Chilean smallholder raspberry producers is analyzed. The analysis of the certification decision shows that small-scale farmers are less likely to implement food safety and quality standards. Once farmers are able to overcome the barriers and implement a food standard, we find that this has a positive effect on their quality performance and net raspberry income.

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Introduction

Since the mid 1980s, a shift from state governance to private governance of agricultural markets in many developing and transition countries and a parallel increase in high-value exports to the European and North American retail sector led to a dramatic transition of agricultural value chains towards closer coordination and consolidation. As a consequence of this development, food safety and quality standards have gained in importance, scope, diversity, and complexity. Farmers worldwide are confronted with increasingly stringent requirements in important export and high-value domestic markets. Whether or not this development is a particular challenge for smallholder farmers in developing countries is controversially discussed in the literature (Boselie et al., 2003; Reardon et al., 2009; Reardon et al., 2001; Swinnen and Maertens, 2007).

The transformation of global value chains has also come along with a shift from public to private standards and from product to process standards. Although private standards such as GlobalGAP are voluntary standards, they have become quasi-mandatory standards in many countries because main supermarket chains require standard compliance from their suppliers. While product standards control the quality of the final product, process standards in

addition require the compliance with certain standardized procedures during the production and handling process, which cannot be controlled by testing the final product. Therefore, to ensure the compliance with process standards along the whole value chain, private actors have developed certification schemes and reinforced vertical value chain integration (Reardon et al., 2001).

In Europe, the private GlobalGAP¹ standard represents the most important standard for on-farm processes (Herzfeld et al., 2008). GlobalGAP was developed in 1997 by an association of large retail chains, the Euro Retailer Produce Working Group, and serves the objective of setting one standard for Good Agricultural Practices (GAPs) that fits agricultural production systems worldwide. As a pre-farm gate standard, GlobalGAP covers all processes from the procurement of farm inputs until the product leaves the farm. GlobalGAP is currently operating in more than 100 countries and more than 70,000 farms are certified according to GlobalGAP requirements worldwide (GlobalGAP, 2011; Herzfeld et al., 2008). Although GlobalGAP is a private and therefore voluntary standard, it has become quasi-mandatory in some countries, such as in the UK and in Scandinavian countries, where retailers demand a GlobalGAP certification as a precondition for the procurement of fresh fruits and vegetables. Supermarkets in other European countries procure both certified and non-certified products, but often give preference to certified goods (Chemnitz et al., 2007).

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¹ GlobalGAP was founded under the name EUREPGAP in 1997 and renamed GlobalGAP in 2007. We use the term GlobalGAP throughout the paper.

Food quality and safety standards have also become important for accessing the US market. In 1998, the US Food and Drug Administration (US FDA) developed guidelines to reduce microbial food hazards particularly in the context of fresh fruits and vegetables (US Food and Drug Administration, 1998). In their guidelines they define good practices concerning the production, handling, processing, and transport of fruits and vegetables in order to minimize the risk of microbial contamination. Both domestic and foreign producers are addressed on a voluntary basis (US Food and Drug Administration, 1998). Since various large US supermarket chains request a certification according to the US GAP² standard from their suppliers, it has become a critical tool to access the US market (FAO Commodities Studies 3, 2007).

In recent years, food quality and safety standards have also become more important in the domestic markets of many non-OECD countries in Africa, Latin America, and East Asia due to the rapid expansion of modern supermarket chains in these countries (Berdegué et al., 2005; Neven and Reardon, 2004; Reardon et al., 2003; Reardon and Berdegué, 2002). The overall growing importance and complexity of private food safety and quality standards has led to a debate about the consequences of these standards for smallholder agriculture in developing countries. While critics fear that the increasing importance of standards leads to the exclusion of small-scale farmers who lack the funds and managerial capacity to implement the stringent requirements, proponents think of standards as a chance for smallholder farmers to upgrade their farming systems (Asfaw et al., 2010; Chemnitz et al., 2007; Kleinwächter and Grethe, 2006).

The present research aims to contribute to this debate by assessing the role of private food safety and quality standards in the Chilean raspberry export sector. More specifically, the objective is to identify the factors that influence the farmers' decision to get certified under the regulations of GlobalGAP and US GAP standards. Furthermore, we analyze the effect of certification on raspberry quality and income to identify the channels through which farmers may benefit from standard compliance. Chile has been chosen as the country of interest due to its strong export orientation. Among the relevant agricultural export products, the berry sector is dominated by smallholder production and a sufficient number of certified farmers can be found (INDAP, 2007). The analysis is based on data from a comprehensive household survey including 57 certified and 169 non-certified raspberry farmers. The data does however not specify whether the certified farmers are complying with the GlobalGAP, the US GAP, or both standards.

The remainder of the paper is organized as follows. The second section reviews the existing literature to give an overview of the transition of value chains in developing countries towards higher standard requirements and the implications for small-scale farmers. In the third section, we introduce the Chilean raspberry sector and discuss the importance of standards within the sector. The empirical data used in the study is described in sections four and five. Sections six and seven comprise the analytical part of the paper presenting the methodological approaches and the results of the econometric analyses. Finally, section seven concludes the paper.

Transition of value chains towards higher standard requirements: Implications for smallholder farmers

Over the past two decades, agricultural value chains in developing and transition countries have changed rapidly. In many countries, there has been a shift from state governance to private

governance of agricultural markets as well as a shift from domestically oriented to globally oriented value chains (Swinnen and Maertens, 2007). European and US supermarket chains increasingly procure fresh fruits and vegetables (FFVs) from developing and transition countries, which has led to a transition of the FFV sector in those countries towards shorter value chains, specialized logistics, preferred supplier systems, and higher standard requirements (Boselie et al., 2003). This development has been reinforced by the growing importance and market shares of supermarket chains in the domestic markets of Latin America (Berdegué et al., 2005; Reardon and Berdegué, 2002), Asia (Reardon et al., 2003) and some African countries including Kenya (Neven and Reardon, 2004; Neven et al., 2009).

An important aspect of the value chain transition is the increasing importance and changing nature of standards. While in the past, food production and handling has mainly been regulated by public standards focusing on product attributes such as minimum pesticide residue levels, these have increasingly been complemented by private standards that take the whole production and handling process into account. In order to ensure compliance with these process standards, private actors have developed certification schemes and reinforced vertical value chain integration (Reardon et al., 2001). Many exporting companies in developing countries have strengthened their control over the production process by backward integration or the establishment of outgrower schemes (Jaffee and Masakure, 2005). The transition of value chains, including the growing importance of food quality and safety standards in international markets has spurred a debate about the potential consequences for smallholder farmers. While upgrading and standard compliance might entail substantial benefits in terms of improved prices and better market access for producers, some experts fear that especially small-scale farmers might be excluded and marginalized from this development (Muradian and Pelupessy, 2005; Reardon et al., 2009).

At the farm level, standard implementation and certification usually entail high recurrent and non-recurrent costs. Non-recurrent costs result from one-time initial investments necessary to meet the requirements of the standard, such as the construction of storage buildings and sanitary facilities. These costs are usually fixed costs or vary only slightly with farm size. Recurrent costs that have to be covered on a regular basis include certification fees and annual water analyses among others (Asfaw et al., 2010; Hobbs, 2003). Some of these recurrent costs also represent large fixed costs components. Altogether, the substantial fixed costs involved in standard adoption and certification make the compliance with food standards relatively more expensive for small-scale farmers (Woods et al., 2006). Besides the direct costs of implementation, meeting the standard and certification requirements entails significant managerial effort. Farmers need to know about all aspects of the respective standard and keep detailed records and documentation of all production processes. This can be difficult for small-scale farmers in developing countries, especially if they have low levels of education and lack reading and writing skills. Hobbs (2003) emphasize that the lack of managerial skills can be an important barrier to certification.

In order to overcome the financial and managerial constraints, smallholders often need to rely on the assistance from downstream actors of the supply chain, non-governmental, or governmental institutions. While on the one hand, small-scale farmers can profit from linkages to exporting companies that provide them with credit and training (Key and Runsten, 1999), on the other hand they can end up in a situation of dependency or lock-in (Hobbs, 2003). Finally, small-scale farmers might be excluded from export markets because the increasing importance of standards makes sourcing from smallholders less attractive for exporting companies, who face high transaction costs when controlling for standard

² The US FDA standards are often referred to as US GAP standards. We adopt this terminology in this article.

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