



# Connecting smallholder farmers to local markets: Drivers of collective action, land tenure and food security in East Chad



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## ABSTRACT

The paper deals with the drivers influencing smallholder farmers' access to local markets in developing countries, assuming that collective actions along with food security and land tenure are related and interconnected aspects that could facilitate market access.

Data were collected in 26 Chadian villages in the Sila region; 98 questionnaires were submitted to peanut and sesame farmers belonging to associations. An ordered logistic regression was adopted to estimate our model where the dependent variable, *access to market*, is operationalized in terms of perceived improvement to market access.

Our research contributes to the present understanding of the determinants of market access and its links with collective actions, land and food security through a comprehensive view of association support activities, structural features and household assets.

Our main findings highlight that the role of secure land tenure is crucial in order to achieve a better access to local markets, confirming that strong relationships within local value chain stakeholders have positive effects on the capability to sell products, whereas the role of food security is circular: the more food secure a farmer is, the more he or she has access to markets but on the other side access to markets guarantees a higher food security.

## 1. Introduction

According to the Food and Agriculture Organization (FAO) projection, by 2050 the world's population will reach 9.3 billion. Therefore, to feed this greatly increased population, food production must rise by 70% – down to 60% in an update of the report (Alexandratos and Bruinsma, 2012). Improved food production techniques are a necessity, although this remains an insufficient condition. Different actions are needed to achieve the required 60% increase in food production to guarantee adequate food access for every human being.

Practitioners and scholars (IFPRI, 2002<sup>1</sup>; Dorward et al., 2004; McCulloch, 2008; Fischer and Qaim, 2012) agree that investment in development country (DC) agriculture must increase over current levels through a combination of higher public investment and better incentives for smallholders; a significant priority should be given to agricultural research, development and extension services. Global markets must be able to function effectively, as food security will depend on international trade and access to a stable supply of imports for an increasing number of countries (FAO, 2009). Therefore, access to markets is crucial for boosting farmers' market performances and

represents a virtuous cycle for productivity and availability of food (Barham and Chitemi, 2009; Markelova et al., 2009; Markelova and Mwangi, 2010; Fischer and Qaim, 2012, 2014; Chagwiza et al., 2016; Orsi et al., 2017).

It will have to accomplish this in the context of shrinking availability of arable land and water, and other environmental constraints. In fact, arable land and water constraints, combined with the negative impacts of climate change, an increase in pests, and longer-term changes in agricultural production due to increasing temperatures, pose additional challenges (Annez et al., 2010; Hazell et al., 2010).

Smallholder farmers could increase their health and security if they had better access to viable markets for their agricultural outputs. In addition, to effectively allocate and distribute the world's food supply, improved access to agricultural markets also serves as a powerful tool for economic growth in less-developed countries. In regions such as sub-Saharan Africa, where 70% of the population relies on agriculture for their livelihood, and 80% of all the farms are less than two hectares in size, smallholder farmers can turn their surpluses into income only if they have the ability to gain access to markets (IFPRI, 2002). Increased incomes, in turn, support food security and help to alleviate poverty.

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There is an ever-increasing realisation that the opportunity for smallholders to raise their incomes from agricultural production, natural resource management and related rural enterprises, depends on their ability to successfully participate in markets.

Collective actions and farmers' organizations could offer one solution for smallholders to obtain access to land, increase their food productivity and, finally, participate in the market more effectively (Mwangi and Markelova, 2009).

The aim of this paper is to understand the elements affecting smallholder farmers' access to local markets by adopting a multi-dimensional approach. Our research contributes to the present understanding of the determinants of market access and its relationships with collective actions, land tenure and food security. However, despite several theoretical researches and a number of governmental and non-governmental programmes fostering farmers' collaboration, access to land and food security, few studies empirically measure the social and economic effectiveness of these drivers when combined. Are farmer organizations, land tenure and food security able to make farmers more efficient in keeping value-adding activities and in collaborating with other players in the value chain to identify and exploit better market opportunities and gain access to local markets? To answer this question, this paper specifically looks at the role played by farmers' associations in supporting learning activities, sharing and providing agricultural supportive services, and leveraging relational opportunities to enhance farmer market access.

Our analysis relies on an assessment of a government-led programme in the Chadian peanut and sesame value chain called "Peanut and sesame food chain support: from production to marketing" (this project is part of the Development Support Programme for Local and Natural Resource Management financed by the European Union), which aims to increase smallholder farmers' productivity and improve farmers' market performance.

The paper is structured as follows. First, we look at the literature background on market access in developing countries; then we focus on the case of a government-led programme in Chad. We explain our data, variables, conceptual model. Finally, we conclude with a discussion of the main findings, limitations and future research.

## 2. Literature background

In the last decades, several scientists have documented the relevance of land property rights and land tenure security in stimulating agricultural development and hence improving the wellbeing of landholders in developing countries (Feder and Feeny, 1991; Besley, 1995; Place and Otsuka, 2001; Goldstein and Udry, 2008; Fenske, 2011; Bellemare, 2013).

Land tenure systems determine who can use what resources for how long, and under what conditions, so land tenure is an important part of social, political and economic structures (Cousins, 2007; Lavigne Delville, 2007; Okoth-Ogendo, 2008).

A logical and practical pattern which links land rights and food security can be described as follows: weak land rights create tenure insecurity that generates poor land management, which causes land degradation and reduced land productivity and the process results in food insecurity (Holden and Ghebru, 2016).

When food is the main output and the producer is a smallholder, partly producing for home consumption and partly for the market, stronger user rights to land are likely to enhance investment and land productivity, thereby her/his food security, and ensure a steady supply of products to the local market (Bezabih et al., 2016; Holden and Ghebru, 2016).

Considerable debate currently surrounds appropriate mechanisms for securing and strengthening land rights in developing countries (Toulmin and Quan, 2000; Sjaastad and Cousins, 2009; Loehr, 2012), because insecurity of tenure is commonly equated to lack of land titles and perceived as the probability of losing one's ownership of land

(Bugri, 2008; Aha and Ayiteyb, 2017).

A particularly crucial issue in Africa is the coexistence of different tenure sub-systems from diverse sources: the international and national property rights systems, the religious and the customary ones. Customary land tenure systems, characterised by communal or collective land ownership, are still prevalent (Migot-Adholla et al., 1991; Place and Otsuka, 2001; Goldstein and Udry, 2008; Fenske, 2011; Mwisigyea et al., 2017) and are not guaranteed to have proper records, which makes it difficult to purchase land and resolve land-related conflicts.

Furthermore, the bundle of different rights and multiple tenures create inadequate tenure security (Sjaastad and Bromley, 1997).

Some political economists have proposed formalising customary property rights through individual titling in order to strengthen the tenure security, reduce the conflicts, both internal and external, and protect the land from grabbing (De Soto, 2000), but this approach seems not to be practicable in contexts where the overall level of regulation and the power of institutions are extremely low (Quan, 2000; Bromley, 2009; Meinzen-Dick and Mwangi, 2009; Bennett et al., 2013).

The most promising pattern is recognizing existing forms of land rights and existing authorities, identified by the customary land tenure systems, (e.g. Wily, 2011) and integrating them into the collective actions. This could assure food security and market access to a community through shared rights and responsibility.

As described above, resource poverty could lead to low productivity, food insufficiency, and lack of income to purchase the food items needed for the household; therefore, smallholders with inadequate access to productive resources would become food insecure. In contrast, the stronger the land rights and access to resources are, the higher productivity will be and thus food security, but at the same time high productivity implies a surplus that can be sold in the markets. Access to markets provides additional income for the family to integrate their diet with other food, i.e. more protein in addition to grains, to differentiate household expenditures (other than food) and to invest in agriculture, etc. (Baiphethi and Jacobs, 2009).

Although the link between food security and market access is fundamental in developing countries, especially in the typical African subsistence agricultural model, commercialization by farmers is not high enough to enable them to benefit from increased income, savings, and investment in productive assets (IFAD-IFPRI, 2011; Mahelet, 2007), and smallholder farmers are very slow in shifting to commercialization within farming systems (Wiggins et al., 2011).

Commercially oriented households have significantly higher food security status than subsistence oriented ones when market access barriers are reduced (Gabre-Madhin, 2009).

According to Armah and Asante (2006) and Asante et al. (2016) intensity of maize commercialization in Ghana positively influences food consumption expenditures and increases in the sale of maize results in increases in purchases of food items needed to address households' food security. But the intensity of smallholder maize commercialization is generally low with up to 41% of farming households being purely subsistence farmers (Armah and Asante, 2006; Asante et al., 2016).

Furthermore, with urbanization in much of Africa south of the Sahara, new market opportunities in new urban markets can create relevant opportunities for smallholders (Kaganzi et al., 2009).

Cash-cropping and contract farming arrangements to serve particular markets have been vigorously promoted as crucial steps in improving the connection to the markets and solving food security problems in Africa (Ferguson and Kepe, 2011).

But smallholder farmers must create an entrepreneurial culture in rural communities where "farmers produce for markets rather than trying to market what they produce" (Lundy et al., 2002) in order to thrive in a competitive global economy. Training and access to information are the levers for the enhancement of the entrepreneurial skills of smallholders.

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