



The role of collective action in leveraging farmers' performances: Lessons from sesame seed farmers' collaboration in eastern Chad



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ABSTRACT

In recent decades, the role of farmers' associations in developing countries has been increasing due to a number of projects promoted by local and international governmental and non-governmental institutions and organizations. This paper analyses the effectiveness of collective action in enhancing farmers' market performances in terms of production quantity, production quality and profit. Specifically, the study points out the role of associations in leveraging smallholder market performance by providing learning, production and network support. In-depth interviews with local sesame value chain actors and a structural equation model based on a survey involving 97 farmers in East Chad are implemented. The farmers involved are part of the EU Project "Peanut and sesame food chain support: from production to marketing" led by a governmental organization. Results show that collective action supportive activities can effectively leverage farmers' market performances. Some policy implications for research and development organizations are finally discussed.

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1. Introduction

In African countries, as in other parts of the developing world, the agro-food supply chain and its actors are facing important challenges as a result of significant changes in economic, financial, environmental, and social contexts. African farmers and rural producers did not benefit from the first Green Revolution of the 60s and 70s, unlike their Asian counterparts. Most of the African governments did not successfully deliver complementary support, such as financial and infrastructure investments, for the agricultural equipment and technologies to succeed, and for rural markets to flourish (Toenniessen et al., 2008; Markelova and Mwangi, 2010). Moreover, most agro-food value chains in developing countries are inclined to be captive due to the strong dependence of producers and suppliers on large buyers (Gereffi et al., 2005; Vandeplas et al., 2013). Smallholders in these countries typically have to face significant challenges, such as a lack of market information, low resources, difficult access to inputs and poor marketing infrastructure, low bargaining power and asymmetric power relationships, all of which impact on the distribution of costs and

benefits for the chain actors, keeping the value-adding activities within large and multinational firms (Trienekens, 2011).

As many scholars and practitioners have pointed out, the development of types of collaboration among farmers is crucial to cope with, or at least moderate, this issue and fix market inefficiencies (e.g. Kruijssen et al., 2009; Markelova et al., 2009; Poulton and Lyne, 2009; Trebbin and Hassler, 2012; Fischer and Qaim, 2014).

And in fact, although recourse to the use of farmer cooperation and collective action is not new, it has recently been sponsored by policy makers and practitioners all over the world as a valid growth strategy, especially for African countries where agricultural development is linked to smallholders' ability to produce and commercialize their products (Toenniessen et al., 2008; Bernard and Spielman, 2009; Markelova and Mwangi, 2010).

However, despite several theoretical studies and a number of governmental and non-governmental projects promoting farmers' collaboration, few researches empirically measure the social and economic effectiveness of collective action. Are farmer organizations 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 boost their own performances? To answer this question, this study specifically looks at the role played by farmers' associations in supporting learning activities to improve farmers' productive capabilities; in

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sharing and providing agricultural supportive services and facilities in order to improve access to and availability of production inputs; and in leveraging relational opportunities for farmers to extend their network by fostering new linkages with potential buyers. Finally, it contributes towards filling the empirical gap by implementing a structural equation model and using in-depth interviews with local actors as supporting evidence to assess the impact of the learning, production and network support of collective organizations on farmers' performance.

Our approach is based on an evaluation of a government-led programme in the Chadian 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 (PADL-GRN) financed by the European Union), which aims to increase smallholder farmers' output and improve farmers' marketing performance by enhancing their levels of learning and productive competences, by providing supportive facilities and by improving relational linkages and opportunities.

This study shows that collective action can effectively leverage farmers' market performances in terms of production quantity, product quality and making a profit. Our major findings pinpoint, first, the crucial role of training and learning support as the main trigger to boost farmers' performances, second, the positive effect of production inputs and facilities provided by farmers' associations and, finally, the importance of building a relational and social context which fosters collaboration among supply chain actors.

The paper is structured as follows. First, we look at the African sesame market background and at the role of collective action in supporting and enhancing small farmers' performance; then we focus on the case of a government-led programme in Chad and define the research hypotheses. In the second section, we explain our methodology, conceptual model and analysis results. Finally, we conclude with a discussion of the main findings and policy messages from our analysis.

2. Theoretical framework and research hypotheses

This study focuses on the sesame value chain in Africa and specifically investigates the role of collective action in leveraging farmers' performance by analysing the case of a group of farmer organizations involved in a non-governmental programme in Chad.

2.1. The sesame value chain background

Sesame (*Sesamum Indicum*) is an oilseed crop which has huge economic potential, considering that its seeds contain 46–56% of excellent quality oil which is highly appreciated by food industries as well as pharmaceutical and chemical industries.

Sesame is a flowering plant of the genus *Sesamum*. It was probably domesticated in Asia or East Africa, although sesame is now cultivated in most of the tropical, subtropical, and southern temperate areas of the world.

It is well known as one of the oldest oilseed crops used by humans, as it has been cultivated since antiquity for its seeds and its precious oil. The ancient Egyptians, Romans and Chinese used sesame in their cuisine in several different ways.

According to data¹ provided by the Food and Agriculture Organization of the United Nations (FAO), in 2013, around 96% of the world's total sesame production (4,847,921 t) is concentrated in Asia (2,486,768 t) and Africa (2,177,441 t). In fact, as we can observe

in Fig. 1, the major producing region is Asia (about 51% of world total production in 2013), followed by Africa which contributes about 45%. The Americas' (Central and South only) contribution is estimated to be 4% while Europe's is negligible.

The steady increase in the world production of sesame (more than 100%) from 2,378,530 t in 1990 to 4,874,921 t in 2013 (see Fig. 1), and in particular, of African production (with its very high growth rate of around 450%), means that sesame is becoming an important growth source for developing countries and an important opportunity to generate wealth and employment. It is interesting to note that the African production over the last 2–3 years has almost closed the gap with Asian production. Today it is one of the main sources of cash income for millions of small-scale farming families, small traders and local processors, most of whom live in rural areas with limited natural resources, low agricultural potential and high poverty levels (You and Johnson, 2010; FAO, 2014). Moreover, in addition to its economic benefits, sesame cultivation also has ecological advantages and plays a vital role in stabilizing and maintaining agricultural environments (Ashri, 1998).

The analysis of the top 25 sesame producing countries in 2013 stresses the dualism between the African and Asian countries (see Fig. 2). Moreover, Fig. 2 shows the main African producing countries are Sudan and Tanzania. Chad was 18th in the world list of producers in 2013 but it shows a very high growth rate of around 250% (from 11,000 t to 39,000 t).

Despite this growth, Chad's sesame value chain has a number of constraints that limit its real potential. From the InterAcademy Council (2004), Juma (2005), Spielman et al. (2008), Kaganzi et al. (2009), Markelova et al. (2009), we identified some drawbacks in the East Chadian sesame value chain context such as: 1) dominance of raw sesame seeds over other sesame products; 2) low quality and poor image of produced sesame compared to Asian sesame; 3) lack of education on land preparation; 4) lack of access to inputs, especially financial resources; 5) lack of capacity building and training in modern farming practices, export procedures, market access, market information and market practices; 6) lack of access to outputs, such as product storage, transport and delivery; 7) poor marketing infrastructure in the production centres resulting in high post-harvest losses; 8) lack of access to market information and prices; 9) poor marketing performance in terms of quantity, quality and food security; and 10) lack of co-ordination and collaboration among producers and between producers and exporters/buyers.

In this context, the promotion and support of producers' organizations is crucial to develop the sesame industry and enhance the linkages within the value chain. Therefore, the role of collective action promoted through national and international aid programmes may be particularly critical to overcome most of the constraints listed above.

2.2. The role of collective action in shaping the African agro-food value chains

Meinzen-Dick and Di Gregorio (2004) define collective action as "a voluntary action taken by a group in pursuit of common interests or in the achievement of common objectives". In collective action, members may act directly or through an organization; they may act independently or with the support of external agents from governmental entities, non-governmental organizations (NGOs) or development projects. These commonly shared goal actions can enable small farmers, above all in developing countries, to take advantage of the changes in the global value chains and deal with existing market imperfections.

Several studies have argued the potential benefits of collective action for local farmers and producers. Collective action can generate scale economies in the production and commercialization

¹ Aggregate data, may include official, semi-official, estimated or calculated data by FAO (<http://faostat3.fao.org/download/QJ/QC/E>).

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