

**Title:** Economic analysis of non-livestock production in agro-pastoral areas. the peanut value chain in the Ferlo (Senegalese Sahel)

**Authors:** Wane Abdrahmane, Touré Ibra, Mballo Aliou Diouf, Nokho Cheikh Ibrahima, Konaté Aminata<sup>1</sup>

## ABSTRACT

Despite debates among economists about the concept of the market - from Smithonian theories to Arrow-Debreu-Hahn reformulations (1959, 1971) to Hal Varian microeconomics treaties (1995, 2003) - there are still recommendations for (more) integration of economic sectors into local, national, regional and even world markets. This view assumes that markets generate value and have positive impacts on actors throughout the whole food system (Reardon *et al*, 2010; Swinnen and Vandeplas, 2010, Maertens and Swinnen, 2009; Webber and Labaste, 2009). Some writers stipulate a positive effect on poverty reduction (Ben-David *et al*, 2000; Bhagwati and Srinivasan, 2002; Dollar and Kraay, 2004; Maertens and Swinnen, 2009; Chyi and Hwang, 2011) while others argue that only a correlation and not causality, has been established (Rodrik 1998, 2000; Fosu and Mold, 2008; Ravallion, 2006; Annabi *et al*, 2008).

In Africa, development actors and public policy-makers generally advocate linking rural smallholders to high-value or high-growth markets (World Bank, 2007; Henson and Jaffee, 2006, 2008) to profit from lucrative opportunities and to meet the challenge of rising meat and milk consumption (Delgado *et al*, 1999). In the Sahel, agropastoral populations are involved, but they use the markets to satisfy their basic consumption needs or when they see a particular market opportunity (Wane *et al*, 2010; Kerven, 1992). It is common for Sahelian agropastoral populations already living under strong constraints to be buffeted by a host of simultaneous or repeated shocks, such as climate, economic, social and political crises (Ickowicz *et al*, 2012). In this situation, which threatens their productive assets, environment and livelihood, Sahelian pastoralists develop other economic activities to secure their livestock production system (Tran, 2011) and their socioeconomic and cultural heritage as well (Ancey and Monas, 2005).

In this context, we use a spatial and landscape analysis to study non-livestock products value chains. A CORAF-AUSAID project (2011-2013) led us to conduct a focus group in early 2012 in the rural community of Thiel (agropastoral site at the South of the Ferlo, close to the groundnut basin). The agropastoralists clearly designated peanut and dairy productions as priority areas for technical and scientific support.

We chose to study the peanut value chain, which is very important but not the main economic activity of the Senegalese agropastoralists, with the challenge to identify the potential of financial resources generation from groundnut and to analyze its economic utility for the agropastoralists. Groundnut is a cash crop from which income is used to supplement livestock production activities (such as buying inputs) and to provide by-products to feed animals, as well as products, which contribute to households' food security. Our research approach studied a representative sample of 120 pastoral encampments (units of residence and accumulation which unite one or more households on the basis of extensive family relationships such as paternity, marriage, friendship etc.). A total of 160 encampments were identified in the rural community of Thiel (Wane *et al*, 2010). We also conducted surveys among other relevant actors of the value chain. We used the value creation conceptual framework from UNIDO in 2011 as the analytical grid to study different dimensions of the peanut value chain.

Thus, we identify the main actors of the Thiel peanut value chain, determine their contribution to value creation and look at the uneven distribution of the value added. Then, we analyze the role of inputs suppliers; the production capacities of pastoralists; the main market parameters, the constraints linked to the marketing; the value-chain governance through a social networks analysis and finally the modalities and funding needs.

In our "discussions" section, we look at the concepts of diversification and pluriactivity to see how the peanut crop functions in the agropastoral areas of the Ferlo. We go beyond strictly financial aspects of the value chain analysis and center the debate on the concept of "value" and the socioeconomic importance of groundnut for agropastoral

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<sup>1</sup> Respectively Economist at CIRAD-PPZS [awane@cirad.fr](mailto:awane@cirad.fr), Geographer CIRAD-PPZS, Engineering student in statistics - ENSAE Dakar- internship at CIRAD-PPZS, Engineering student in statistics - ENSAE Dakar - internship at CIRAD-PPZS, Master in Rural Economics, University Cheikh Anta Diop of Dakar, internship at CIRAD-PPZS

populations. These populations must make choices between market income, human food security (self-consumption) and herd food security (agricultural by-products in dry season).

Finally, we outline some directions for a better integration of heterogeneous knowledge (including local scales) by orienting agricultural research on development outcomes to support public policies. Due to economic dominance of livestock activities in this semi-arid area and the weight of food in the household budgets, the main option consists in an intensification of crop-livestock systems. This implies an increased use of external inputs, adaptation of agricultural innovations to local conditions and providing incentives for smallholder farmers, strengthening their capacity, building trust along the value-chains and creating a favourable business environment. These orientations could help to reinforce the resilience of agropastoral populations and to reduce their vulnerability to global change in general (Wane *et al*, 2011), to climate shock in particular (Devarajan *et al*, 2013).

**Keywords:** value-chain, peanut, agropastoralism, Senegalese Sahel, Ferlo

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