Food and Agriculture Organization of the United Nations

European Commission

cirad AGRICULTURAL RESEARCH FOR DEVELOPMENT

FOOD SYSTEMS AT RISK

NEW TRENDS AND CHALLENGES

FOOD SYSTEMS AT RISK

NEW TRENDS AND CHALLENGES

Sandrine Dury,
Pauline Bendjebbar,
Étienne Hainzelin,
Thierry Giordano
and Nicolas Bricas (Eds)

Published by
the Food and Agriculture Organization of the United Nations
and
Le Centre de Coopération Internationale en Recherche Agronomique pour le Développement
and
the European Commission

Rome, 2019

Citation:

Dury, S., Bendjebbar, P., Hainzelin, E., Giordano, T. and Bricas, N., eds. 2019. *Food Systems at risk: new trends and challenges.* Rome, Montpellier, Brussels, FAO, CIRAD and European Commission. DOI: 10.19182/agritrop/00080

ISBN 978-2-87614-751-5 (CIRAD)

ISBN 978-92-5-131732-7 (FAO)

CHAPTER 4.2

RISKS OF SMALLHOLDER EXCLUSION FROM UPGRADING FOOD CHAINS

Guillaume Soullier[1], Paule Moustier[2] and Frédéric Lançon[1]

SUMMARY

Large agri-industries fuel the upgrading of certain food chains. This chapter presents the risks of smallholders not benefitting from this upgrading. The first risk is that upgrading does not spread to all food value chains, generating territorial inequalities. The second is that the most endowed smallholders are included while the poorest are excluded. The third risk is that those smallholders who are included tend to be in a weak bargaining position against large agri-industries. As a result, most smallholders do not get higher incomes from upgrading food chains.

1. CIRAD, UMR ART-DEV, F-34398 Montpellier, France; University of Montpellier, F-34090 Montpellier, France.
2. CIRAD, UMR MOISA, F-34398 Montpellier, France; University of Montpellier, F-34090 Montpellier, France.

Poor smallholders in traditional food chains

In 2013, the extremely poor represented 10.7 percent of the world's population (World Bank, 2016). Of these, 50.7 percent lived in sub-Saharan Africa and 33.4 percent in South Asia. Of extremely poor workers aged over 14, 65 percent worked in the agricultural sector (World Bank, 2016).

Smallholders are characterised by limited productive assets, management implemented at the family level and an often informal legal status (Bélières *et al.*, 2015). This definition mainly concerns agricultural producers, but it can be extended to downstream operators, who carry out trade, processing and retailing activities with limited assets. Smallholders include socially marginalised groups, such as women, young people and ethnic minorities. These groups have reduced access to resources and fewer opportunities than others (De La O Campos *et al.*, 2018).

Smallholders operate in uncertain environments and have limited access to productive resources (Devaux *et al.*, 2016). This constrains their innovation, quality management and access to output markets. As a result, they participate in traditional food chains, which provide products of heterogeneous quality and generate low incomes. This is particularly the case for domestic and staple chains.

The upgrading of value chains

Large agribusinesses are investing in new technologies in production, storage and processing, including in LI and LMI countries. They have access to bank credit, technology and information. They define the attributes of final products and develop new business models to control their supplies. They implement contract farming, which is "a sales arrangement between a farmer and a firm, agreed before production begins, which provides the farmer with resources or services" (Ton *et al.*, 2018). Contract farming often includes the setting of standards, i.e. a set of quality criteria for product attributes. Some large agribusinesses also choose to control their supplies hierarchically.

Large agri-industries are diverse in their origins, activities and the segments in which they operate. As a result, different patterns of upgrading coexist. The supermarket revolution relates to large-scale investment in retailing, the centralisation of supply systems and the implementation of vertical coordination. The quiet revolution relates to investments in improved processing and storage, and direct sourcing from smallholder farmers (Reardon *et al.*, 2012; Soullier and Moustier, 2018).

It is still unclear whether smallholders manage to grasp the opportunities offered by the upgrading of food chains. This chapter discusses the risks that smallholders do not benefit from the upgrading of value chains and questions the contribution of food chain upgrading to the reduction of poverty and inequality.

Risk 1: Upgrading does not affect all food value chains

Upgrading does not affect all food value chains, contributing to territorial inequalities. Several factors in certain territories generate costs and uncertainty which discourage agri-industry investments (Barrett *et al.*, 2012). These comprise infrastructure quality (such as roads, irrigation and storage), degree of insecurity, institutional context, agroecological conditions and proximity to markets for quality products.

As a result, many food chains are not upgrading. Several domestic food chains in sub-Saharan Africa have received little investment or innovation (Soullier and Moustier, 2013). Indeed, domestic chains target national demand, do not benefit from a shift in demand for quality products, face various uncertainties and generate little income. Some traditional chains may also disappear when faced with a reduction in demand and competition from imported products or from agribusinesses. This has been observed in the milk sector in Brazil, where 60,000 small dairy farmers went out of business in the second half of the 1990s, unable to invest in pasteurisation (Reardon and Berdegue, 2002). Consequently, the unequal geographical coverage of upgrading food chains tends to increase inequalities between territories. This is particularly the case in some parts of sub-Saharan Africa and South Asia, which represent a major risk since these two regions are home to 84 percent of the world's extremely poor population (*cf.* Chapter 4.3).

Risk 2: Less endowed smallholders are being excluded from upgrading food chains

Large agri-industries select business models and suppliers that best meet their quality standards and reduce their costs and uncertainties (Barrett *et al.*, 2012). They often prefer better endowed smallholders, who have access to technology, generate economies of scale and present lower transaction costs. For example, most farmers supplying supermarkets in Vietnam were found to be above the poverty level (Moustier *et al.*, 2009). Poorer smallholders often do not have access to credit and cannot invest to meet agribusiness contract requirements.

The number of smallholders included in upgrading chains is therefore very limited. Through a meta-analysis of 26 case studies, Ton *et al.* (2018) have shown that in 61 percent of the cases studied contract farmers had larger landholdings or owned more non-land assets than non-contracted farmers. However, exceptions do exist, particularly when operations are labour-intensive and collective action is possible (Reardon *et al.*, 2009). But these cases are rare and in developing countries "the proportion of farm households involved in contract farming is probably in the range of 1-5 percent" (Devaux *et al.*, 2016, p. 136). While poorly documented, the inclusion of smallholders downstream may show similar results.

In some cases, agri-industries fuel an increase in agricultural production and smallholders excluded from upgrading can continue their activities in traditional food chains. However, they remain stuck in low-income activities. In others, production does not increase sufficiently and smallholders risk being replaced by large agribusinesses. This has happened in some Asian countries, where medium and large millers replaced smaller ones (Reardon *et al.*, 2012). In such situations, some become employees of large agri-industries (FAO, 2015) but not all, because these large agri-industries are capital-intensive rather than labour-intensive. Furthermore, smallholders do not necessarily gain higher incomes when they are employed.

Risk 3: When included, smallholders may not always benefit

Upgrading may lead to asymmetries of power. Indeed, large companies integrate activities that generate the most added value and outsource those that are riskier and less profitable (Gereffi, Humphrey and Sturgeon, 2005). They often outsource agricultural production to smallholder famers where contracts include risk-transfer mechanisms. Large agribusinesses can also be opportunistic, with payment delays, no payment, purchasing price reductions or inappropriate rejection of products (Barrett *et al.*, 2012). Some policies seek to balance power relationships in value chains, for example through multi-stakeholder platforms or inter-professional associations. However, multi-stakeholder partnerships may also lead to exclusion practices (HLPE, 2018).

As a result, the incomes of those smallholders who are included may not improve. On average, contract farming increased farmers' incomes by 38 percent, thanks to access to improved inputs and quality management (Ton *et al.*, 2018). However, these figures hide a bias toward the studies showing positive impacts, which are more likely to be published and appreciated by donors and policy makers.

Nevertheless, some vertical coordination approaches can have no or negative impacts on smallholder welfare. For example, rice growers in Senegal committed to production contracts simply because it was their only way to fund rice growing, but they received an income almost 13 percent lower than producers using bank credit and marketing paddy with spot transactions. Why? Because the production contract included high interest and insurance rates (Soullier and Moustier, 2018). Furthermore, the impacts depend on the product and specificities of the value chain. Positive impacts are more likely in export chains of high-value products than in domestic staple chains. This can be a major obstacle to alleviating poverty because millions of family farmers only participate in domestic staple chains.

Finally, upgrading could increase income inequalities within food chains. The total value added increases with upgrading, but its distribution becomes less favourable to smallholders (Reardon *et al.*, 2009, 2012). When included, smallholders receive higher incomes in absolute value, but their share of the total value added within the chain generally decreases and income inequalities between smallholders and large agribusinesses increase. For example, the upgrading of the rice chain in Bangladesh made it possible to produce high-quality rice but decreased producer shares of the total value added from 69 percent to 38 percent (Reardon *et al.*, 2012). A similar trend has been observed in Senegal, where the upgrading of the rice chain decreased the farmers' share of the total value added from 60 percent to 37 percent (*cf.* Figure 19). In Nicaragua, the supermarket revolution in vegetable chains has highlighted a similar trend (*cf.* Box 10). There are, however, some exceptions, such as in Vietnam where farmers' organisations have contributed to improving the quality of lychee (Moustier *et al.*, 2010) and secured a 25 to 42 percent increase in the total value added (Moustier, 2009). These inequalities seem to differ from one type of food chain to another. Value may be more concentrated at the wholesale level when products can be stored rather than in chains comprising a few intermediaries and supplying perishable products.

BOX 10

DO SUPERMARKETS IN NICARAGUA STRENGTHEN INEQUALITIES?[1]

In Nicaragua, horticultural production (tomatoes, green peppers, lettuce and cabbage) is conducted by farms with different structures. Around two-thirds are rainfed farms and the others are irrigated. Among irrigated farms, half are large, farming more than seven hectares. Before the 1990s, most of these farms marketed products in traditional value chains, made up of small collectors and retailers. Then two companies upgraded horticultural value chains by developing supermarkets: the national company La Colonia and the international company Walmart. In 2009, there were 65 supermarkets in Nicaragua. These supermarkets often used contracts to purchase horticultural products and set quality standards. They purchased horticultural products from those farmers that offered the lowest transaction and procurement costs. As a result, they preferred sourcing from the largest farms or from cooperatives, and from farms representing the lowest transportation costs. Supermarkets also preferred sourcing from irrigated farms, because they could continuously supply products throughout the year, in contrast to rainfed farms.

As a result, farmers located in very remote areas and growing rainfed produce on small farms were much less likely to be included in the upgraded chain. Furthermore, the supermarkets specified quality standards, defined in terms of variety, size, colouration, cleanliness, damage and weight. On average, supermarkets accepted 70 percent of the total production and rejected the remaining 30 percent. In contrast, the traditional value chain bought produce of all sizes and grades and provided outlets for produce rejected by supermarkets. Furthermore, the study has shown that farmers marketing to supermarkets did not receive higher prices than in the traditional value chain. La Colonia purchased vegetables at prices similar to those of traditional markets. Walmart even purchased tomatoes at prices 35 percent below the market price since Walmart's prices were steady compared to traditional markets. This price might, however, include an overly expensive insurance against price risk.

1. Based on Michelson, Reardon and Perez, 2012.

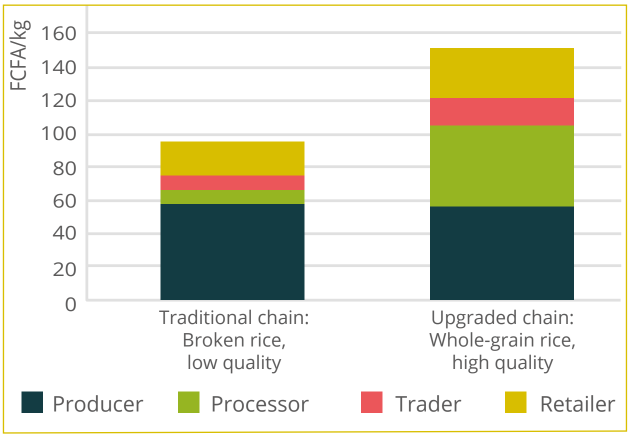

Figure 19: *Distribution of value added in traditional and upgraded rice chains in Senegal.*
Source: Soullier, 2017.

References

Barrett, C., Bachke, M., Bellemare, M., Michelson, H., Narayanan, S. & Walker, T. 2012. Smallholder participation in contract farming: comparative evidence from five countries. *World Development,* 40(4): 715–730 [online]. https://doi.org/10.1016/j.worlddev.2011.09.006

Bélières, J.-F., Bonnal, P., Bosc, P.-M., Losch, B., Marzin, J. & Sourisseau, J.-M. 2015. *Family farming around the world: definitions, contributions and public policies.* M.-C. Thirion & P.-M. Bosc, eds. Paris, AFD and CIRAD. (also available at http://publications.cirad.fr/une_notice.php?dk=576161).

De La O Campos, A.P., Villani, C., Davis, B. & Takagi, M. 2018. *Ending extreme poverty in rural areas – Sustaining livelihoods to leave no one behind.* Rome, FAO.

Devaux, A., Torero, M., Donovan, J. & Horton, D., eds. 2016. *Innovation for inclusive value-chain development: successes and challenges* [online]. Washington, DC, International Food Policy Research Institute [online]. https://doi.org/10.2499/9780896292130

FAO. 2015. *The State of Agricultural Commodity Markets 2015-16.* Rome. 77 pp.

Gereffi, H., Humphrey, J. & Sturgeon, T. 2005. The governance of global value chains. *Review of International Political Economy,* 12(1): 78–104 [online]. https://doi.org/10.1080/09692290500049805

Michelson, H., Reardon, T. & Perez, F. 2012. Small farmers and big retail: trade-offs of supplying supermarkets in *Nicaragua. World Development,* 40(2): 342–54 [online]. https://doi.org/10.1016/j.worlddev.2011.07.013

Moustier, P. 2009. Gouvernance et performance des filières alimentaires au Vietnam. *Économies et sociétés,* 31(11): 1835–1856.

Moustier, P., Tam, P.T.G., The Anh, D., Binh, V.T., & Nguyen, T.T.L. 2010. The role of farmer organizations in supplying supermarkets with quality food in Vietnam. *Food Policy,* 35(1): 69–78 [online]. https://doi.org/10.1016/j.foodpol.2009.08.003

Reardon, T., Barrett, C., Berdegué, J. & Swinnen, J. 2009. Agrifood industry transformation and small farmers in developing countries. *World Development,* 37(11): 1717–1727 [online]. https://doi.org/10.1016/j.worlddev.2008.08.023

Reardon, T., Chen, K., Minten, B. & Adriano, L. 2012. *The quiet revolution in staple food value chains: enter the Dragon, the Elephant, and the Tiger.* Metro Manila, Philippines, Asian Development Bank and International Food Policy Research Institute. (also available at http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/127312/filename/127523.pdf.

Soullier, G. 2017. *Modernization of domestic food chains in developing countries: what effects on small-scale farmers? The rice value chain in Senegal.* Economics, University of Montpellier. (PhD dissertation)

Soullier, G. & Moustier, P. 2013. The dominance of relational governance in African food value chains: a long way towards the Asian quiet revolution? Paper presented at the 140th Seminar of the European Association of Agricultural Economists, December 13-15, Perugia, Italy.

Soullier, G. & Moustier, P. 2018. Impacts of contract farming in domestic grain chains on farmer income and food insecurity. Contrasted evidence from Senegal. *Food Policy,* 79: 179–198 [online]. https://doi.org/10.1016/j.foodpol.2018.07.004

Ton, G., Vellema, W., Desiere, S., Weituschat, S., D'Haese, M. 2018. Contract farming for improving smallholder incomes: What can we learn from effectiveness studies? *World Development,* 104: 46–64 [online]. https://doi.org/10.1016/j.worlddev.2017.11.015

World Bank. 2018. *Piecing together the poverty puzzle* [online]. Washington, DC. https://doi.org/10.1596/978-1-4648-1330-6