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► To cite this version:

Alain de Janvry, Elisabeth Sadoulet. Agricultural Value Chain Development and Smallholder Competitiveness. 2019. <hal-02069504>

HAL Id: hal-02069504

<https://hal.science/hal-02069504v1>

Submitted on 15 Mar 2019

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Agricultural Value Chain Development and Smallholder Competitiveness

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The Ferdi and AFD organized a workshop at the AFD in Paris on November 15, 2018, on “Agricultural value chain development and smallholder competitiveness”. Participating institutions to the workshop included Ferdi, AFD, the University of California at Berkeley, Leuven University, CIRAD, IFPRI and the University of Bordeaux, CERDI, the World Bank, the FARM Foundation, the Avril Foundation, and Proparco/AFD. We report here on some of the major rationales for and results from this workshop.



► Role of agriculture for development

It is widely agreed in the development community that agriculture has a major role to play for growth and poverty reduction in “agriculture-based countries”, those countries with a high contribution of agriculture to current growth and a high share of their poor in the rural sector (World Bank, 2008). This includes most of the Sub-Saharan African (SSA) countries. For these countries, CAADEP (Comprehensive Africa Agriculture Development Program) recommended allocating 10% of government expenditures to agriculture. Yet, recent figures indicate that only 2 out of 43 countries meet this objective (Goyal and Nash, 2016). Presumption is that this is not due to ignorance on the part of governments, but to disappointment with returns from investment in agriculture. Pessimism with the role of agriculture for growth and poverty reduction has been voiced by influential economists (Collier and Dercon, 2009). Implication is that, if the CAADEP goal is to be met, investing public resources in agriculture has to be more rewarding. Success requires increasing the growth rate of agriculture and making this growth more effectively pro-poor. With high population growth and declining per capita land availability for rural populations, this demands the modernization of agriculture through the adoption of technological and institutional innovations that can increase both land and labor productivity. Yet, the gaps in fertilizer use and cereal yields, both good indicators of the overall level of modernization of agriculture, have kept on increasing between SSA and the rest of the world. Pro-poorness implies that smallholder farming has to be part of the approach, and that growth in commercial agriculture has to also create benefits for the landless and smallholders through the labor market. Yet, rural poverty is by far the largest contributor to overall poverty in most of SSA.

The modernization of agriculture goes beyond rising yields in staple food grains, was has been called the Green Revolution. Using agriculture for development requires achieving an agricultural and a rural transformation, as steps toward an eventual structural transformation. An agricultural transformation consists in the diversification of farming systems, a shift toward higher value crops, and a better use of labor calendars to reduce periods of idleness which are a major cause of rural poverty (de Janvry, Duquennois, and Sasoulet, 2018). Diversification requires insertion in value chains that provide access both to modern inputs and technology, and to markets, often through contracts with wholesalers, agro-industrialists, and agro-exporters. A rural transformation implies the emergence of a local rural non-farm economy, principally based on services to agriculture (backward linkages with agriculture), value addition to agricultural products (forward linkages), and the servicing of rural consumers’ demands (final demand linkages). This rural transformation helps rural households diversify and complement their sources of income with off-farm activities. An eventual structural transformation happens when the rural labor force moves to urban-industrial centers, and the share of agriculture declines in both aggregate employment and GDP.

► 2. How to promote the modernization of smallholder farming (SHF)? Push and pull approaches

The modernization of SHF agriculture and the associated agricultural and rural transformations are hampered by market and government failures. These failures can result in lack of profitability of innovations for specific SHFs given their own particular circumstances, lack of local

availability of innovations for adoption in spite of potential profitability, and constraints to adoption in spite of profitability and availability. Constraints include most particularly lack of access to liquidity under the form of savings and credit, risk and lack of access to risk-reducing instruments, lack of access to information on the existence of innovations and how to use them, and lack of access to input and output markets. Interventions to promote modernization must consequently address each of these failures and their consequences on adoption.

There are basically two contrasted ways of doing this. One is a “push” approach that addresses each of the market and government failures to secure profitability, availability, and the removal of constraints as they apply to particular categories of SHF, leading to adoption. The other is a “pull” approach that creates incentives to modernization by developing value chains for the particular products, and managing vertical (contracts, shareholder dialogue) and horizontal (producer organizations) coordination within the value chain to overcome the profitability-availability-constraints obstacles as they apply to the inclusion and competitiveness of SHF in the value chain.

The “push” approach has been extensively explored with randomized controlled trials. They have shown how credit, risk and insurance, information, and access to markets limit adoption and can be overcome with various institutional reforms (Bridle *et al.*, 2018). The objective of the workshop on agricultural value chain development and smallholder competitiveness was to explore this “pull” approach.

► 3. Value chain development and smallholder competitiveness

Value chains (VC) for agricultural products link farmers backward to their input and technology suppliers and forward to intermediaries, processors, and ultimately consumers (Reardon *et al.*, 2009; Swinnen, 2018). Induced by income gains, urbanization, and globalization, there has been in recent years a rapid development of VC for low-value staple food crops, medium value traditional export crops, and high-value non-traditional export crops. They can take a wide variety of forms in linking SHF to consumers (Byerlee and Haggblade, 2013):

- Spot markets: individual SHF buy inputs from agro-dealers and technology companies and sell products to local traders (coaxers) who in turn sell to wholesalers, retailers, and ultimately consumers. This applies mainly to low value staple food crops for the domestic market (Lançon, 2018).
- Collective action for marketing: SHF buy inputs and sell products through producer organizations and cooperatives.
- Contract farming with individual SHF or with producer organizations (productive alliances, see World Bank, 2016): contracts are typically resource-providing, potentially including credit, insurance, access to inputs, and technical assistance, at the same time as they specify quality of deliveries and offer price guarantees.
- Outgrower schemes with plantations or estates: SHF are contracted to deliver to the estates, typically also with resource providing contacts (Casaburi and Willis, 2017).
- Vertically integrated commercial farms where SHF participate to value sharing through the labor market (Maertens and Swinnen, 2013).

Like VCs, contracts can also take a variety of forms (FARM Foundation, 2018). Important for

value chain development (VCD) and value chain inclusiveness (VCI) is resource-providing contracts (Bellemare and Lim, 2018). Advantages of these contracts are that they can help SHFs overcome market failures (in credit, insurance, inputs) and government failures (in extension services and technical assistance). Disadvantages is that they are typically difficult to put into place and implement. Monopsony power of contracting agents (agribusiness, agro-exporters, supermarkets) can lead to hold-up practices with delays in payments and lower prices on deliveries. Principal-agent relationships facilitate appropriation by the lead agent of the net social gains created by the contract, typically the commercial partner. Contract rigidity (phytosanitary and quality norms; technological specifications in production) can be difficult to implement for SHFs, including on domestic markets when servicing supermarkets and rich consumers with quality standards that approximate international norms. Side-selling by SHFs when the contract price is inferior to the local market price can undermine the credibility and enforcement of contracts. Empirical studies tend to show positive benefits of these contracts for SHFs under the form of technology adoption, agricultural transformation, and income and employment gains, although most studies suffer from selection and external validity issues (Bellemare, 2015).

Value chain development (VCD)

There have been multiple initiatives by governments, the private sector, development agencies, and NGOs to promote VCD. The World Bank has invested heavily in VCD in seven West African countries with investments in infrastructure (roads, irrigation, electricity, market facilities), support to producer organizations (training, capacity), supporting services (financial, technical assistance), and public sector capacity (extension, regulation). This has focused on value

chains such as mango, onions, meat, and poultry in Burkina Faso, and onions and rice in Senegal. Work at IFPRI (Devaux, Torero, Donovan, and Horton, 2016) emphasizes the importance of building asset endowments for SHF to participate in value chains (land, knowledge, skills, social capital), strengthening of producer organizations, and developing multi-stakeholder platforms. These platforms are to help actors in a VC communicate and coordinate actions to address bottlenecks to VCD. Swinnen (2018) emphasizes the role of identifying entry points for VCD that can consist in financing the leading firm in a VC, financing agri-business companies so they have resources to in turn finance farmers in interlinked contracts, and directly targeting constraints in VCD such as farmer training, PO development, and service providers. As revealed by the FARM Foundation (2018) review of contracting in VC in SSA, leading private sector agents have been particularly important in acting as coordinating agents for VCD. Coordination can thus be achieved at the cost of competition, creating an interesting trade-off whereby monopoly power in value chains can help facilitate vertical coordination. Finally, quality certification can have an important role in VCD where phytosanitary and other qualitative aspects of produce are important (Dequiedt, 2018). This can be done by third-party certification as in the onion study in Senegal (Bernard *et al.*, 2017). Important is for certification to happen upstream in the VC before aggregation of produce makes it impossible to reward individual quality contributions (Abate and Bernard, 2018). Where quality can be certified early in the VC, incentives can be created for farmers to invest in quality enhancement, in particular through the adoption of technological change (Balineau, 2018).

Value chains for low-value domestic staple foods are particularly important for SHF, but more difficult to develop as discipline is harder to achieve due to the large number of producers and availability of local buyers facilitating side-

selling (Lançon, 2018). Yet, success with VC development for domestic producers is important if SHFs are to remain competitive with imports, and also potentially substitute for imports. Successful upgrading of domestic low-value VCs is thus important for SHF welfare and domestic food security.

VCD does not necessarily come top-down from commercial partners, it can also come bottom-up at the initiative of producer organizations. Collion (2018) thus contrasts top-down “aggregation” schemes in Morocco where an agroindustry contracts with producers to secure the provision of produce with quality specifications, to bottom-up “productive alliances” in Latin America where a producer organization develops a business plan that involves contracting with a commercial partner typically in resource providing contracts. Capacity of the PO to do this typically comes with technical assistance and subsidies provided by the public sector and with the support of international development organizations (World Bank, 2016). Hence, the “pull approach” to modernization and transformation can come from downstream as well as from upstream agents in the value chain.

Value chain inclusion (VCI)

With SHF inclusion in VCs, VCD can become not only a powerful instrument for growth but also for poverty reduction via profit-making as entrepreneurs and via employment benefits as workers. Some of the key aspects for successful inclusion are the following: (1) Sufficient asset endowments for SHF under the form of land, capital, health, knowledge and skills, and social capital to initiate production for the market and participation in a VC. The BRAC graduation model for the rural ultra-poor thus importantly starts with meeting minimum asset thresholds to engage in agricultural entrepreneurship (Banerjee *et al.*, 2015). (2) Producer organiza-

tions with capacities, discipline, and bargaining power to engage in contracting with commercial partners in productive alliances, without the risks of side-selling and contract defaulting (World Bank, 2016). (3) Willingness and capacity of commercial partners to contract with SHFs in resource providing contracts, or in cooperation with service-providing institutions such as commercial banks and technology companies that offer SHFs access to these resources. (4) Quality recognition sufficiently upstream in the VC that it creates incentives for SHF to engage in quality improvement in their production practices. (5) Helping SHF identify the comparative advantages they can build upon in achieving competitiveness. This can often be based on labor-intensive activities anchored in traditional farming systems. (6) Insertion of a VCD effort in a broader rural development strategy pursuing agricultural and rural transformations. This includes infrastructure investments to connect often remote areas that can be competitive to markets with lower transaction costs.

As this long list of conditions indicates, VCI is difficult to achieve and requires both commitment by supporting agencies and sustained support to achieve results. Fair trade contracts can be a way of providing price and other supports to VCI (Balineau, 2018). Improvements in the performance of labor markets, through for example employment agencies and skilling of potential workers, can help extend the benefits of VCD into VCI through employment in vertically integrated agribusiness schemes (Van den Broeck, Swinnen, and Maertens, 2016).

► 4. Conclusion

With modernization of SHF lagging and its recognized importance for growth, agricultural and rural transformations, and poverty reduction in agriculture-based countries, efforts have

been pursued using both a push and a pull approach. The push approach has yielded benefits, especially in terms of institutional innovations to overcome constraints to adoption. Yet, it has shown limits with modest success in technology adoption, calling for a complementary approach. A pull approach that uses VCD and VCI has been relatively less explored in spite of potential effectiveness. The Ferdi-AFD workshop had the purpose of initiating a work program in support of VCD and VCI in SSA. Workshop participants stressed the potential of VCD/VCI

as a development instrument (Avril Foundation, direct contribution). Proparco/AFD (direct contribution) emphasized the importance of financing private sector initiatives with foreign aid resources. Important lessons from experiences reviewed highlight the key roles of asset endowments, producer organizations, contracting, and VC coordination through lead agents and multi-stakeholder platforms. Together, these recommendations help define a research program to be followed in the years to come.

► References

- **Abate, G.** and **T. Bernard.** 2018. "Lemons markets in African agriculture: Wheat in Ethiopia." Ferdi-AFD workshop.
- **Abhijit B., E. Duflo, N. Goldberg, D. Karlan, R. Osei, W. Parienté, J. Shapiro, B. Thuysbaert** and **C. Udry.** 2015. "A multifaceted program causes lasting progress for the very poor: Evidence from six countries." *Science* 348(6236).
- **Balineau, G.** 2018. "Experiences in smallholder inclusion: Contracting, certification, and fair trade." Ferdi-AFD workshop.
- **Bellemare, M.** 2015. "Contract farming: What's in it for smallholder farmers in developing countries?" *Choices* 30(3): 1-4.
- **Bellemare, M.** and **S. Lim.** 2018. "In All Shapes and Colors: Varieties of Contract Farming." *Applied Economic Perspectives and Policy* 40(3): 379-401.
- **Bernard, T., A. de Janvry, S. Mbaye** and **E. Sadoulet.** 2017. "Expected Product Market Reforms and Technology Adoption by Senegalese Onion Producers." *American Journal of Agricultural Economics* 99(4): 1096-1115.
- **Bridle, L., J. Magruder, C. McIntosh** and **T. Suri.** 2018. "Experimental Insights on the Constraints to Agricultural Technology Adoption." ATAI, CEGA, UC Berkeley.
- **Byerlee, D.** and **S. Haggblade.** 2013. "African Food Systems to 2030: Toward Inclusive Business Models." Stanford University, Center on Food Security and the Environment.
- **Casaburi, L.** and **J. Willis.** 2017. "Time vs. state in insurance: Experimental evidence from contract farming in Kenya." ATAI, CEGA, UC Berkeley.
- **Collier, P.** and **S. Dercon.** 2015. "African agriculture in 50 years: Smallholders in a rapidly changing world?" FAO expert meeting on How to Feed the World in 2050. Rome, 2009.
- **Collion, M.-H.** 2018. "Inclusive value chains." Ferdi-AFD workshop.
- **de Janvry, A., C. Duquennois** and **E. Sadoulet.** 2018. "Labor Calendars and Rural Poverty: A case study for Malawi." University of California at Berkeley.
- **Dequiedt, V.** 2018. "Product quality in developing countries agrifood supply chains: a survey of theory." CERDI, University of Clermont-Ferrand.
- **Devaux, A., M. Torero, J. Donovan** and **D. Horton.** 2016. "Innovation for inclusive value chain development: Successes and challenges." IFPRI Synopsis, Washington DC.
- **FARM Foundation.** 2018. "Contractualiser avec les agriculteurs en Afrique." www.fondation-farm.org. Paris.
- **Lançon, F.** 2018. "Agricultural Value chains inclusiveness and domestic demand." Ferdi-AFD workshop.
- **Maertens, M.** and **J. Swinnen.** 2006. "Trade, Standards, and Poverty: Evidence from Senegal." LICOS discussion papers series, Leuven University.
- **Reardon, T., J. Swinnen, C. Barrett** and **J. Berdegue.** 2009. "Agrifood Industry Transformation and Small Farmers in Developing Countries." *World Development* 37(11):1717-1727.
- **Swinnen, J.** 2018. "Inclusive Value Chains to Accelerate Poverty Reduction in Africa." Ferdi-AFD workshop.
- **Van den Broeck, G., J. Swinnen** and **M. Maertens.** 2016. "Global Value Chains, Large-Scale Farming, and Poverty: Long-Term Effects in Senegal." Licos discussion papers series, Leuven University.
- **World Bank.** 2008. *World Development Report-Agriculture for Development*. Washington DC.
- **World Bank.** 2016. *Linking farmers to markets through productive alliances*. Washington D.C.



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n° ISSN : 2275-5055

