Strengthening the Linkages Between Malian Cereal Farmers and Buyers[1]

Policy Brief #2: Value Chain Coordination Strategies

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Key Message: *In the Malian cereal markets, coordination can be led by farmers, buyers, or third-party service providers. Each of these strategies has different strengths and challenges, especially with respect to its economic sustainability. To be economically sustainable, farmer marketing cooperatives should seek an appropriate membership base, focus on value-addition activities, and develop their capacity to raise investment capital.*

1. Introduction

To capture market opportunities, farmers must coordinate their production and marketing activities (in terms of prices, quality, quantity, and other terms of exchange) among themselves and with buyers (Peterson, et al., 2001). Coordination can occur vertically, such as between farmers and buyers through different kinds of contracting arrangements, or horizontally, such as among farmers through different types of farmer organizations. When spot market prices alone do not adequately provide coordination among these actors, they must use coordination structures that complement price while minimizing transaction costs (Coase, 1937). We examine 15 cases of smallholders supplying cereal buyers in central and southern Mali, in order to in identify the coordination structures used and assess the strengths and weaknesses of each structure in terms of its economic sustainability. The case study data was collected in 2014 and 2015 through over 100 interviews with rice, millet, sorghum, and maize value chain actors and an analysis of their contracts and organizational documents.[2]

2. Value chain coordination strategies

Malian cereal farmers and buyers use three distinct combinations of coordination structures that utilize farmer organizations and contracting in complementary ways to provide inputs, credit, extension, post-harvest processing, market linkages, and transport services to farmers. Each of these three coordination strategies is led by a different value chain actor.

Farmer-led coordination. The most common combination of coordination structures is the marketing cooperatives complemented by marketing contracts. A marketing contract allows buyers to specify transaction terms (e.g., quantity, quality, timing and pricing), while leaving production decisions to farmers (Mighell and Jones, 1963). Marketing contracts vary in the level of detail, form (i.e., verbal versus written agreements), and advance timing (the period between agreement and delivery can range from two weeks to several months). In marketing cooperatives, farmers join together to integrate into other value chain segments to access inputs,

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[2] For a description of these transaction cost problems, please see Vroegindewey, Theriault, and Staatz (2018) or, for a summary, "Policy Brief #1: Coordination Challenges and Policy Implications."

credit, or technical services, and/or through purchasing, storing, transporting, and processing of outputs (Staatz, 1987).

Three types of marketing cooperatives are used in Malian cereals, which differ in terms of scale and services.

- **Small village-level marketing cooperatives** facilitate access to credit and inputs, and aggregate output for a limited number of farmers.

- **Larger unions,** or regional marketing cooperatives, have paid staff, substantial warehousing space, and other collective assets. They take out annual loans to finance fertilizer, certified seed, extension services, commercial warehousing and other operations for thousands of farmer members. They also aggregate more than 1,000T/year in grain from members through three mechanisms: in-kind reimbursement of input loans, inventory credit (warrantage), and internal spot purchases. They sell to institutional buyers, wholesalers, and industrial feed processors, after which the cooperatives reimburse bank loans and return a pro-rata dividend to members.

- **Service-provider farmer organizations** were originally created with a specific purpose of providing credit or training services to members. Over time they have developed a pattern of ad hoc interventions in cereal markets through bargaining with large buyers and facilitating information flows and logistics. Like unions, they have a large membership base, output capacity, and a permanent staff that provides perennial services to farmers. However, they lack marketing assets and capacity.

Buyer-led coordination. In a less common combination of coordination structures, rice and maize buyers use resource-providing contracts to provide farmers with fertilizer and seeds on credit, a guaranteed market and information, assistance aggregating and transporting output and, in some instances, access to land, processing equipment, and loaned grain during the lean season. Sometimes bargaining farmer associations complemented the buyer-led coordination actions by monitoring production and facilitating logistics and the exchange of information.

Service provider-led coordination. In one case, a third-party service provider organized individual farmers; provided financial, input and extension services; and marketed their grains to a processor through a marketing contract. This actor also provided other core coordination activities normally associated with bargaining farmer associations: the organization and monitoring of production and facilitating output bulking.

3. Assessment of the economic sustainability of each strategy

The three coordination strategies have distinct strengths and weaknesses with respect to their economic sustainability, and thus the appropriateness of each depends on the particular context.

Strengths and weaknesses of buyer-led coordination. Buyer-led coordination is best-suited for situations in which a buyer's scale is limited (compared to the farmers' scale), profitability is dependent on valorizing a specific asset (i.e. special machinery or a brand), and there is a significant amount of supply uncertainty (in terms of quality, quantity, or price). The strength of the strategy is that it builds a flexible and dedicated network of suppliers that meets a buyer's specific needs, while faciliating farmers' access to input and output markets. However, resource

constraints limit scalability, especially for small and medium enterprises (SME). In the two cases of SME processors using resource-providing contracts, cash, storage and staff constraints limit supply and lead to the underutilization of processing facilities. In addition, buyers wishing to expand resource-providing contracts to suppliers outside their personal networks face higher risks of side-selling given the competitive nature of cereal markets in Mali. The industrial rice and maize processor claimed that it used to pre-finance its suppliers but was forced to stop after incurring losses, and then shifted exclusively to marketing contracts, mostly with traders. These challenges help to explain why buyers supplement resource-providing contracts with other forms of procurement, including production on their own farms. A rice wholesaler in one case also relies significantly on a network of marketing cooperatives.

Strengths and weaknesses of service provider-led coordination. A strength of the service provider-led coordination is that farmers have access to an integrated package of high-quality inputs and technical assistance. However, pressures to keep input prices low enough to attract farmer clients, especially given the governemnt's ongoing fertilizer subsidy program, is a threat to this model. It also faces the difficulty of keeping operating costs down in deliverying technical packages to thousands of scattered smallholder clients, and in effectively linking them to renumerative output markets. The service provider in this study had to depend heavily on external funding to cover its costs (approximately 50,000 FCFA per farmer in 2014), and had not yet facilitated sales for more than 10% of its farmers.

Strengths and weaknesses of farmer-led coordination. National and regional policies have placed increasing responsibility on marketing cooperatives for the management of farmer credit, input procurement, extension, and marketing services. Development agencies have also shown interest in directly engaging farmer organizations as partners and beneficiaries of projects. For example, during field work, we observed four concurrent projects actively promoting the combination of marketing cooperatives and marketing contracts in the Koutiala area. The capacity of farmer organzations to manage such partnerships and perenialize services to their members requires structural elements (such as central management, monitoring systems, and collective investments) and resources (such as dedicated staff and operational budgets) typically limited to marketing cooperatives. Due to the prevalence of this type of coordination structure, we conclude with three key lessons about the long-term economic sustainability of marketing cooperatives.

- ***The activities of marketing cooperatives should by covered by revenues derived from market prices.*** Farmers primarily join cereal marketing cooperatives to obtain better access to input and credit markets, and only secondarily as an output market channel. However, it is in marketing member output that cooperative profits are typically realized. Service-based fees, used primarilly by service-provider farmer organizations, are one option for partly financing coordination activities. A related challenge is that large millet/sorghum and rice marketing cooperatives are currently dependent on institutional markets (e.g., OPAM and the World Food Program) for most of their sales. While these markets offer an opportunity for cereal farmers to upgrade and professionalize, over time they do not likely represent a growing source of demand.

- ***A strong productive asset base is crucial to the profitability of marketing cooperatives.*** Farmer access to fertile land, traction animals, farm equipment, and irrigation systems are important determinants of farm productivity and profitability, which should result in

stronger farmer participation in marketing cooperatives. Collective assets, such as processing machinery (e.g., threshing, milling, cleaning, and sorting), new products (e.g., parboiled or whole polished rice, pre-cooked cereals, new varieties, or nutrient-enriched grains), improved packaging, warehouses, and transport vehicles can also capture margins or enhance what is otherwise an undifferentiated commodity. However, the capital investments required to sustain such value-addition currently depend on external project assistance. The annual financing of production and marketing activities also typically requires third-party partners to secure bank loans with guarantees. To evolve beyond this dependence, marketing cooperatives need to develop their own capacity to raise capital through commercial borrowing and internal and external equity.

- ***A balanced membership base is critical.*** On one hand, village-level marketing cooperatives are not large enough to pool sufficient equity and output for effective coordination with buyers. On the other hand, the largest cooperatives face difficulties in monitoring and managing their large and heterogeneous membership base. Medium-sized and regionaly-based unions, membered by different village cooperatives from a single geographic zone, appear to be most effective in terms of balancing monitoring costs with economies of scale.

For more information, please see Vroegindewey, Theriault, and Staatz (2018).

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