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FROM PUBLIC TO PRIVATE GOVERNANCE IN AGRI-FOOD SUPPLY CHAINS OF TRANSITION AND DEVELOPING COUNTRIES

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1 Introduction[1]

There is an extensive literature on the governance of economic activities in general and on supply chain governance in particular (e.g. GEREFFI et al., 2005; KIRSTEN and SARTORIUS, 2002; DOLAN and HUMPHREY, 2000). The focus in this literature is on the non-market coordination of economic activities and transactions in commodity chains. Such a focus is very important to understand recent changes in global food systems.

The governance systems of agri-food supply chains are crucial factors in the organization of trade and the relations within supply chains, all of which have major impacts on economic performance and development. In this paper we will argue that important changes have taken place in the governance of food systems and supply chains in transition and developing countries and that these changes in governance structure have major effects on quality, equity and efficiency of the agri-food system, and on farms and rural development in these countries.

Food and agricultural commodity value chains in developing and transition countries have undergone tremendous changes in the past decades. In particular, one can identify a dramatic shift from public (or state) governance to private governance of the agri-food systems. Companies and property rights have been privatized, markets liberalized, and economies integrated into global food systems. The liberalization and privatization initially caused the collapse of state-controlled vertical coordination, but more recently, privately governed vertical coordination systems have emerged and are growing rapidly. This is a response to consumer demand for food quality and safety on the one hand and the farms' production constraints caused by factor market imperfections on the other hand. In this paper we discuss (a) the importance of these changes in governance, (b) their implications for efficiency and equity, and (c) the effects in developing and transition countries.

2 Privatization and liberalization

Twenty-five years ago, a vast share of the poor and middle income countries, covering a large share of the world's agricultural areas and farmers, were characterized by state-controlled supply chains for agricultural and food commodities. This was most extreme in the Communist world, spreading from Central Europe to East Asia, where the entire agri-food system was under strict control of the state. However, also in many African, Latin-American and South Asian countries the state played a very important role in the agri-food chains. For example, in Brazil and Mexico, wholesale markets were run by the state; in South Asia the state heavily regulated food markets and many African commodity markets and trade regimes were controlled by (para-)state organizations. In many of these countries, the state played an important role in agricultural production and marketing in the decades after independence from colonial power. Governments in Sub Sahara Africa (SSA) and South Asia were heavily involved in agricultural marketing and food processing through the creation of marketing boards, government-controlled cooperatives and parastatal processing units. These govern-

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[1] The paper summarizes key findings from several of our studies. We refer to these studies for more detailed arguments, data and empirical evidence, and analyses (see reference list).

ment institutions were often monopoly buyers of agricultural products, especially for basic food crops and important export crops.

This system of state intervention and control has undergone tremendous changes in the 1980s and the 1990s as a global process of liberalization induced dramatic changes in many of these regions. In the transition world, the liberalization of prices, trade and exchanges, the privatization of the state enterprises etc. removed much of the state control over the commodity chains as well as the vertical coordination in the chains. Similar processes of privatization and liberalization of domestic and international commodity and financial markets reduced the control of the state over the food and agricultural chains in many developing and emerging economies.

These developments have been reinforced by the liberalization of trade and investment regimes in transition and developing countries – policy reforms which often accompanied the privatization and domestic price reforms. Trade liberalization caused major changes in trade of agri-food products, while the liberalization of the investment regimes induced foreign investments in agribusiness, food industry, and further down the chain, with major implications for farmers (DRIES and SWINNEN, 2004). Several food sectors in Eastern Europe, such as the sugar, dairy, and retail sector, have received massive amounts of foreign investment, which now holds dominant market shares. An example is the rapid growth of modern retail chains ("supermarkets") in transition and developing countries which was triggered by the reform process in former state-controlled economies (REARDON and SWINNEN, 2004).

Associated with these changes is the spread of (private and public) food standards and an increase in the share of high-value products – mainly fish and fishery products, and fruits and vegetables – in world agricultural trade. Consumers are increasingly demanding specific quality attributes of processed and fresh food products and are increasingly aware of food safety issues. These food quality and safety demands are most pronounced in western markets (and increasingly in urban markets of low-income countries) and affect traders and producers in transition and developing countries through international trade.

3 From Public to Private Governance of Supply Chains

3.1 State-controlled vertical coordination

Vertical coordination (VC) was widespread in state-controlled food supply chains. Again this was most extreme in the Communist system where production at various stages and the exchange of inputs and outputs along the chain was coordinated and determined by the central command system (ROZELLE and SWINNEN, 2004). However also in other regions where the state played an important role in food chains vertical coordination was widespread. Government marketing organizations and parastatal processing companies used VC systems with upstream suppliers. The dominant form of state-controlled VC was that of seasonal input and credit provisions to small farmers in return for supplies of primary produce (POULTON et al., 1998). In fact, state-controlled VC was often the only source of input and credit for peasant farmers (IFAD, 2003).

Most analyses point at the deficiencies and inefficiencies of these systems. State-controlled VC in centralized agricultural marketing systems in developing and Communist countries was often motivated by political motives and by objectives to provide cheap food for urban markets, the maximization of foreign exchange earnings, the creation of rural employment, ascertaining the viability of certain businesses, etc. This is considered one of the primary causes of the inefficiency of the Soviet farming complex (JOHNSON and BROOKS, 1983; SWINNEN and ROZELLE, 2006). Also in Africa, several studies conclude that state-controlled outgrower schemes were inefficient and poorly managed, which manifested itself, among other things, in low credit repayment rates (WARNING and KEY, 2002).

3.2 Liberalization, privatization, and the break-down of vertical coordination

This system of vertical coordination has undergone tremendous changes in the 1980s and the 1990s. In the transition world, the liberalization of exchange and prices, and the privatization of farms and enterprises caused the collapse of vertical coordination and caused major disruptions in the food chain.

The disruptions in relationships of farms with input suppliers and food companies also resulted in many farms facing serious constraints in accessing essential inputs (feed, fertilizer, seeds, capital, etc.). Also in many developing countries privatization and market liberalization led to the decline of input and credit supply to farms as it disrupted the working of various government-controlled agricultural institutions, cooperative unions and parastatal processing companies (IFAD, 2003). As government marketing boards and cooperatives have ceased to play a major role in the procurement of agricultural produce, so has the provision of credit and agricultural inputs through state-controlled VC. In addition, market liberalization led to the removal of price supports and input subsidies, a reduction in government research and extension services, and a decline in government (subsidized) credit to the agricultural sector (KHERALLAH et al. 2002; ROZELLE and SWINNEN, 2006).

3.3 The emergence of private vertical coordination

However, following privatization and liberalization, new forms of VC have emerged and are growing (SWINNEN, 2007; WORLD BANK, 2005). These are no longer state-controlled but are introduced by private companies. Private traders, retailers, agribusinesses and food processing companies increasingly contract with farms and rural households to whom they provide inputs and services in return for guaranteed and quality supplies. This process of interlinked contracts is growing rapidly in the transition and developing world.

The emergence and spread of private VC is caused by the combination of, on the one hand, an increasing demand for products of high quality and safety standards with private sector investments and increasing consumer incomes and demands (both domestically and through trade) and, on the other hand, the problems which farms face to supply such products reliably, consistently and timely to processors and traders due to a variety of market imperfections and poor public institutions.

Farmers in developing and transition countries face major constraints in realizing high-quality, consistent supplies. These include financial constraints as well as difficulties in input markets, lack of technical and managerial capacity etc. Specifically for high-standards products, farmers might lack the expertise and have no access to crucial inputs such as improved seeds. To guarantee consistent and quality supplies, traders and processors engage in VC to overcome farmers' constraints.

The importance of VC in developing and transition countries is further explained by the lack of efficient institutions and infrastructure to assure consistent, reliable, quality and timely supply through spot market arrangements. VC is in fact a private institutional response to the above described market constraints. To overcome problems of enforcement and constraints on quality supplies, private VC systems are set up by processors, traders, retailers and input suppliers.

Increasing consumer demand for quality and food safety is another driving force behind private VC in transition and developing countries. Investment by modern processors and retailers (supermarket chains) reinforces the need for supplying large and consistent volumes by their use of private standards and requirements of extensive supervision and control of production processes.

Emerging empirical evidence suggests that these new forms of private VC can be an engine of economic growth, rural development and poverty reduction. The next section presents evidence on its effects in transition and developing countries.

3.4 The importance of private vertical coordination

The importance of private VC is increasing in developing and transition countries. At the end of the 1990s, in the Czech Republic, Slovakia and Hungary, 80 % of corporate farms sold crops on contract, and 60-85 % sold animal products on contract (SWINNEN, 2006). A survey of agri-food processors in five CIS countries found that food companies which used contracts with suppliers grew from slightly more than one-third in 1997 to almost three-quarters by 2003 (WHITE and GORTON, 2004). There is also significant growth of supplier support measures – including credit, inputs, prompt payments, transportation, and quality control – as part of these contracts. Over 40 % of processors in the CIS sample offer credit to at least some of the farms that supply them; and 36 % offered inputs, in 2003.

In developing countries private VC is emerging and growing in many sectors. Traditional tropical export products (coffee, tea, cocoa, rubber and oil palm) are increasingly grown by smallholders under contract farming arrangements, often with the provision of inputs, new technologies, and credit and extension services to farmers. For example in Kenya, half to the coffee is produced by smallholders (BAUMANN, 2000). In South and Southeast Asia, there has been a sharp increase in VC, especially in animal farming and dairy processing (GULATI et al., 2005). In SSA, private VC has become a dominant system of rural financing. For example, in Mozambique and Zambia it is virtually the only source of finance for agricultural households (IFAD, 2003). Also in Latin-America, VC is widespread over many different agricultural commodities and includes various contractual arrangements ranging from purely marketing contracts to production contracts with provision of inputs, credit, technical assistance and marketing assistance (DIRVEN, 1996).

4 Effects of Private Vertical Coordination

The emergence of private VC is often mentioned as a new engine for economic growth, rural development and poverty reduction. In this section we summarize the empirical evidence on the impact of VC in transition and developing countries. We distinguish between efficiency effects and equity effects.

4.1 Efficiency effects

The impact of private VC systems on productivity is difficult to quantify as several other factors affect output simultaneously and as company level information is difficult to obtain. Still, the evidence suggests that successful private VC has important positive effects, both direct and indirect.

The direct impact is on the output and productivity of the processing company that initiates vertical contracting and of its suppliers involved in VC schemes. Supplying farmers have experienced beneficial effects on output, productivity, and product quality – and ultimately on incomes – through better access to inputs, timely payments, and improved productivity with new investments. Case studies indicate that private VC programs can lead to strong growth in output, quality and productivity. For example, case studies of the sugar and dairy sectors in East Europe show how new private contracts and farm assistance programs caused output, yields, and investments to grow dramatically (GOW et al., 2000; SWINNEN, 2006). A major IFPRI-FAO study finds that contract broiler farmers are significantly more efficient and produce higher profits than independent farms in the Philippines and Thailand (GULATI et al., 2005). MAERTENS and SWINNEN (2006) find that the benefits from contract-farming in horticulture production in Senegal in terms of higher rural incomes are substantial. In the case of Polish dairy farms, milk quality rose rapidly following contract innovations by dairy processors in the mid 1990s. The share of the market held by highest quality milk increased from less than 30 % on average in 1996 to around 80 % on average in 2001 (DRIES and SWINNEN, 2004).

Indirect effects emerge through household and farm spillovers as households' risk reduces; their access to capital increases and the productivity of non-contracted activities increases. Next to farm assistance VC also implies guaranteed sales, often at guaranteed prices, which comes down to decreased marketing risk for farmers. Coordinating firms also share in the production risk of farmers through ex ante provision of inputs and credit. Moreover, credit arrangements and prompt cash payments after harvest in VC programs improves farmer's cash flow and access to capital. Reduced risks, improved income stability and access to capital are particularly important effects in the case of capital and insurance market imperfections. In addition, contract-farming can lead to productivity spillovers on other crops, resulting from management advise, access to improved technologies, better input use, etc.

A number of empirical studies provide evidence for these household spillover effects. For example, GULATI et al. (2005) show that there is significantly less variation in yields and prices during the year for contract broiler farmers in India. HENSON (2004) shows that contracted vegetable farmers in Uganda benefit from reduced risk and improved access to credit. Another illustrative example comes from MINTEN et al. (2006) on the FFV sector in Madagascar. A large number of very small farms benefit from vegetable contract farming through more stable incomes, shorter lean periods, and technology and productivity spillovers on rice. There are a number of studies specifically examining the motivations of farmers to engage in contract-production. These show that guaranteed sales and prices, access to inputs and credit are the most important motivations rather than direct income effects (e.g. MAERTENS et al., 2006; MINTEN et al., 2006).

4.2 Equity Effects

There are two potential equity issues with VC processes. The first concerns the distribution of rents in vertically coordinated food supply chains. The second concerns the participation and exclusion of smallholders and poorer farmers in contract-farming.

Vertical coordination implies sharing risks, costs and benefits between the coordinating firm – mostly food processors, exporters and retail chains – and farmers/suppliers. By introducing an interlinked contract, farms can access credit, inputs, etc. which were unavailable before and processing companies can have access to higher quality and timely supplies. Productivity and therefore income increases for the supply chain as a whole. However, a key question is who benefits from this increase in efficiency and total income? If the supplier and the processor benefit, both parties share in the gains from the institutional innovation, and everybody is better off. However, if the processing firm can set the terms of the contract such that it captures most or all of the rents, the productivity growth may not benefit the farms; and interlinking may even bestow additional monopoly power upon the processing company. Contract-farming has often been criticized as being a tool for agro-industrial firms and food multinationals to exploit unequal power relationships with farmers and extract rents from the chain (WARNING and KEY, 2002). However, our review of empirical evidence on the effects of VC presented above indicates that farmers do share importantly in the benefits of contract-farming and VC.

The capacity of emerging VC in agri-food supply chains to serve as an engine of pro-poor economic growth critically depends on the types of farmers that are included in contract schemes. VC has the potential to affect the way income is distributed within a rural economy and can exacerbate existing patterns of economic stratification (WARNING and KEY, 2002). If agro-industrial firms prefer to contract with wealthier farmers, then poorer households will be excluded from direct benefits. There are three important reasons why this might be so. First, transaction costs favour larger farms in supply chains. Second, when some amount of investment is needed in order to contract with or supply to the company, small farms are often more constrained in their financial means for making necessary investments. Third, small farms typically require more assistance from the company per unit of output.

However, there are also reasons why agro-industrial firms do contract with smallholders and poorer farmers. First, the most straightforward reason is that companies have no choice. In some cases, small farmers represent the vast majority of the potential supply base. Second, while processors may prefer to deal with large farms because of lower transaction costs in *e.g.* collection and administration, contract enforcement may be more problematic, and hence costly, with larger farms. Processors repeatedly emphasized that farms' willingness to learn and a professional attitude were more important than size in establishing fruitful farm-processor relationships. Third, in some cases small farms may have substantive cost advantages. This is particularly the case in labour intensive, high maintenance, production activities with relatively small economies of scale. Fourth, processors may prefer a mix of suppliers in order not to become too dependent on a few large suppliers.

Empirical observations show a very mixed picture of actual contracting, with much more small farms being contracted than predicted based on the arguments above. In fact, surveys in Poland, Romania and CIS find no evidence that small farmers have been excluded over the past six years in developing supply chains. In the CIS, the vast majority of companies have the same or more small suppliers in 2003 than in 1997 (SWINNEN, 2006; WORLD BANK, 2005). Also for the peanut sector in Senegal, no evidence was found for a bias in the participation of farmers in contract-schemes towards better-off households (WARNING and KEY, 2002). Moreover, studies on the FFV export sector in Madagascar by MINTEN et al (2006) and in Senegal by MAERTENS et al. (2006) find that there are important effects on poverty reduction from vertical coordination in high-value supply chains.

5 Concluding Comments

The governance of agri-food supply chains in transition and developing countries has dramatically changed over the past 25 years. The most important change is from public (or state) governance to private governance of the agri-food systems, and from domestically oriented to globally integrated. Companies and property rights have been privatized, markets liberalized, and food supply chains integrated into the global economy. An important aspect of these changes is that liberalization and privatization initially caused the collapse of state-controlled vertical coordination. However, more recently, privately governed vertical coordination systems have emerged and are growing rapidly. This is a response to consumer demand for food quality and safety on the one hand and the farms' production constraints caused by factor market imperfections on the other hand. In this paper we have shown that these changes have major effects on quality, equity and efficiency of the agri-food systems and, more generally, have major implications for economic performance and development in these countries (and beyond). It is also clear that we do not yet sufficiently understand all the changes that are taking place and their implications and that this should be an important field for future research.

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