

The Network Approach

the Production – Consumption Chain in Senegal

This article presents a social analysis of the co-ordination of the production-consumption chain in agriculture. The inter-relations in two production-consumption chains are compared: cereals and dairy in Senegal.

Social network analysis is a valuable means of exploring the dynamics of urban agriculture and how economic reasoning is embedded in these social networks.

To begin with, the principle actors are identified from the production to the consumption ends of the chain. The many different connections between individual and collective actors, both vertical and horizontal and whether negative or positive, strong or weak have to be analysed and understood, as well as the underlying links that provide structure and in some cases reproducibility to this system.

Empirical and detailed knowledge is sought of the actors, their roles, their social and economic or other relations, the pinpointing of their interests, and forms and means of mediation. These relationships are often a result of strategic behaviour according to different rationales. The determination of the dominant rationale requires the identification of the others such as: avoidance, confrontation, contractual cooperation, formal or informal exchanges, reciprocity and privatisation.

The network involved in the long *production-consumption chain of cereals* has developed from a specific context.

1) A *multiplicity of actors* (producers, collectors, merchants, processors, distributors, and consumers) is involved. There is a large distance between producers and processors, due to the great number of intermediaries that make use of their economic positions or role in the distribution of raw materials.

2) *Institutional support*, through the activation of linkages with technical support and financing institutions. The importance of these relationships depends on what support is expected. They offer an opportunity

to gain access to market information, price fluctuations and insight into threats and opportunities of other intervening structures in the production-consumption chain and into production supply routes.

3) The *exchange of services* and arrangements that facilitate (the means of) transactions. This concerns for instance, the supply of cereals on credit, deferred payment, forms of reciprocity between employers and their employees (gifts, donations, bonuses), supply orders, subcontracting of markets by ceding quota shares, etc. These exchanges may develop up to sub-regional level where experiences, techniques and technology provide the links, intersection points, and the context in which further relations (pending proximity and distance) are developed.

4) The *distance* between the (rural) supply and urban processing and consumption zones.

5) In contrast to many industrial producers, urban micro-enterprises may survive by closer contact to consumers through their *personalised labels*. Their presentation as Innovators-processors lends them a nationalistic stamp, a factor in mobilising customers, promoting products and adherence to other, possibly semi-processed products.

The shorter *production-consumption chain involved in the processing of milk* is distinguished by these factors.

1) *Trade linkages and interchanges* between processor and producers (cattle-owners), possible due to the homogeneity of the social groups involved (both belonging to the same ethnic group of agro-pastoralists).

2) The processing units receive an *aid* from support and financial institutions. These financial and technical partners also help the producers of milk by facilitating access to inputs, veterinary care, training, hygiene and natural resources. This two-way assistance further enhances the link between processors and producers who now depend on these external partners (the factual innovators in this food chain).

3) Forms of *reciprocity between producers and processors* through the exchange of goods and services. The producers regularly provide the daily supply of raw materials to the processing unit, reinforcing the links

of loyalty to the processor who, in return, offer credit often used to purchase products and foodstuffs.

4) The influence of the processing unit depends on the *promoters' investment* in the close link with rural producers at the beginning and with the consumers the end of the production-consumption chain.

The comparison of these chains reveals that institutional support is a necessity. On the one hand in the creation of wealth in the context of an emerging economy and in making the provision of services possible. Importantly, the conditions for maintaining transversal links between different actors, even as competitors, are (still) influenced from outside. Economic trade relations may suffer from the skilful management of non trade relations, chance relations also interact and the development and amount of contacts make risk management easier.

The permanence of the network(s) in the system essentially depends on balanced power-sharing negotiations, in which mediation plays a fundamental role. A particular important aspect in this is the notion of trust. Trust is built through a process of successive agreements and linkages, whether they are definite, accepted or tolerated.

Trust works through avoidance of confrontation, conflict regulation or amicable agreements, through signed contracts or informal exchanges based on reciprocity. Within this context, the privatisation of linkages plays as much of a role as social network skills do. Risks or manipulation are eliminated through a high level of predictability between actors in the control of the resources.

The forms of these relationships and underlying strategies come from different social connections and are shaped and maintained through the horizontal and vertical relations that develop and fit together, according to their interdependencies or complementarities. The process of building, extending, and diffusing ideas, of learning, building know-how, techniques and technology operates through their common or complementary functions.