Productivity and Growth in Organic Value-chains (ProGrOV)

Networks organization along organic foods value chains in Kenya

Research results from the ProGrOV project

In this issue - and in forthcoming issues - ICROFS news will bring a number of articles with results from the ProGrOV project presented by the MSc students from Uganda, Kenya, Tanzania and Denmark.

The ProGrOV project is about improving productivity and growth in existing organic value-chains in Uganda, Kenya and Tanzania by way of developing agro-ecological methods governance and management of chains, and by capacity development regarding research focussed on organic and interdisciplinary approaches.
An MSc student from the DANIDA project ProGrOV has done a survey of certified organic farmers and marketing outlets around Nairobi. The survey was conducted between February and April, 2012 with kales as a case study.

The results show that there was poor and uneven access to information for producers and other weak chain members due to fragmentation of producers and traders and distant markets. The study recommends reorganization of the network structure to facilitate information flow and minimize exploitation of farmers so that all stakeholders benefit from the network structure.

Kale is among the most preferred green leafy vegetables in Nairobi, reasons being it’s nutritious and acts as a source of income to peri-urban traders and farming households. Food supply chains consist of sub-networks in production, distribution, and marketing whereby each relationship in the structure has a unique context.

Operations in the networks are based on actors’ functional role; interests, goals, rules, and power relations define this role. The aim of this study was to describe the network organization of stakeholders along organic products value chains.

Network organization of organic value chains in Kenya

There are two facets of inter-organizational relationships; relationships can be arranged as chains (vertical ties) or as networks (horizontal ties) based on the reason for interdependence. Figure 1 is a generic diagrammatic representation of the organic kales value chain network.

A network has three main elements namely; actors, activities, and resources. The level of dependency among actors depends on criticality of the resources in that value chain. Some relations are based on loyalty and trust, while others depend on opportunism. Strong ties share more voluntary, supportive information as they form a solid basis for trust whereas weak ties enhance access to a wider source of resources. Actors with better position in a network have more control and can collaborate with other network members.

Organic kales supply chains in Kenya

A food supply chain shows the movement of food from the primary production all the way to the ultimate consumer. The products physical flow downstream while information flows is both upstream and downstream.

The organic kales supply chain in Nairobi has several actors; producers, input providers, traders and consumers. Agrochemical shops, sector support groups/organizations and

Figure 1: Schematic representation of organic food value chain networks (based on Lazzarini et al., 2001)
social networks (neighbours and other farmers) provide the main primary inputs to farmers. Green groceries, restaurants, specialty shops and wholesalers acted as the main traders (figure 2).

Approximately 79 percent of farmers are organized into farmer groups. About only a third had farm size exceeding an acre. Most of the organic produce was sold directly to consumers either at the farmers market, basket schemes, home deliveries, farm gate sales or through conventional vegetables market.

Approximately 70 percent of the farmers sell organic kales at the organic farmer markets every weekend on Saturday. In Nairobi, there are three farmer markets; in Karen, Hurlingam and Thika. Karen and Hurlingam farmers’ markets are within 10 kms from Nairobi’s CBD while Thika farmers’ market is approximately 40 kms from Nairobi.

Excess produce is sold to retailers (speciality outlets, groceries, restaurants and supermarkets). Almost 50 percent of farmers also sell organic kales through middlemen, about 13 percent use basket schemes, 10 percent sell to wholesales while only 7 percent sell to supermarkets.

**Measure of centrality**

Measure of centrality in social networks describes actors’ positions and integration relative to others in the network. *Degree centrality* measures the ties of an actor in relation to other actors in the network. *Closeness centrality* measures the possibility of interactions with other actors based on a minimum number of intermediaries, that is, the reachability of the actors including indirect ties. *Betweenness centrality* measures the number of shortest paths between network actors that pass through a given organization.

**Centrality measures of the organic kales value chain**

The degree centrality was 67.3 ± 14.5 percent, Network centralization was 42.3 percent which shows the stakeholders are somehow linked to one another. Closeness centrality was 76.3 ± 8.2 percent which showed that most stakeholders were near the middle of the network structure and required fewer connections to link to everyone in the network. However, network centralization based on closeness centrality measure was about 26.87 percent indicating that although there were many connections among stakeholders, actors were still fairly far from each other. Based on betweenness centrality, centralization was approxi-
The results are from the first graduated MSc student from ProGrOV. The ProGrOV project aims to increase organic agricultural productivity and develop the organic business, improve livelihoods and build capacity for sustainable development in the East African Region. It focuses on increasing productivity and growth in organic value chains through research addressing development of agro-ecological methods, governance and management of organic value-chains, and capacity development using participatory and interdisciplinary approaches.

**About ProGrOV**

Mr. Njenga’s fellow students in the ProGrOV project will graduate over the coming 3 years and more results from this will be presented in ICROFS news in the coming issues.

The project is a collaboration between Universities in Uganda, Kenya, Tanzania and Denmark. It is funded by the Danish Ministry of Foreign Affairs and coordinated by ICROFS.

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**Reorganization of the network structure is needed**

Along organic value chain, there was uneven access to information for producers and other weak chain members due to fragmentation of producers and traders and distant markets. This increase costs associated with access to information. The study recommends reorganization of the network structure to facilitate information flow and minimize exploitation of farmers so that all stakeholders benefit from the network structure. In addition, farmers’ groups should provide information such as market information, training on food safety and quality and post-harvest products handling. These will provide farmers with them an opportunity to minimize exploitation. In addition, implementation of group activities during production, marketing and certification should be encouraged.

Joshpat Njenga Gichure has during his studies at University of Nairobi been supervised by Professor Jonathan Nzuma, University of Nairobi, Professor Kostas Karantininis, University of Copenhagen, and Analytical Consultant Paul R. Kledal, Institute of Global Food & Farming Ltd.

More information

Read more about ProGrOV: http://www.icrofs.org/Pages/Research/progrov.html