

Farm Management Schemes within Organic PGS; Survey and Analysis in Sóc Sơn, Hanoi, Vietnam

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Abstract

A comparative analysis of collective and individual management schemes within Organic Participatory Guarantee Systems (PGS) in the Hanoi province in northern Vietnam indicates that collective farm management enhances social and ecological practices. The study has juxtaposed the schemes in terms of social and ecological systems as well as impressions of farmers and retailers.

Introduction and Background

Demand is rising for organic vegetables in Vietnam. This poses many challenges for small-scale rural farmers who supply the Hanoi markets. Strict third party certification is well beyond their reach, both in terms of cost and technical ability. Organic participatory guarantee systems (PGS) offer an alternative through peer-review and social control, supporting appropriate farming practices, local market development, and social cohesion (Zanasi and Venturi 2008). PGS is based on civil society (Fonseca et. al, 2008), and ensures agro-biodiversity conservation and livelihood security by recognizing the merits of traditional practices and customs (Darlong 2008). PGSs are context specific and the systems vary greatly, but all propose collective efforts for marketing and certification of organic products. The purpose of this study was to determine how PGS farmers manage collective work and decision-making in land-use planning when they share collective organic land.

Material and methods

Following are the results of a comparative analysis of two PGSs management systems, which took place from January to April 2012. The farms covered by the survey are in the Hanoi province in northern Vietnam. All the farms are operating within a PGS framework outlined by the Agriculture Development Denmark Asia (ADDA) and Vietnam Farmers Union (VNFU) Organic Project (ADDA-VNFU 2009). These farmers groups are operating under 'National Basic Standards for Organic Products in Vietnam' prepared by the Vietnamese Ministry of Agriculture and Rural Development (MARD 2006) and further clarified in the PGS Organic Standards published by the ADDA and VNFU Organic Project (ADDA-VNFU 2011).

In the study area organic producers are organized into groups, which manage the production of organic vegetables and the supply of these vegetables to the local markets through the PGS. Most are operating under what can be called an 'individual' farm management system, wherein farmers are responsible for a small plot of land within an organic managed land area but work together on the sale of their products through the PGS. However, the ADDA-VNFU Organic Project is promoting a transition to what can be called 'collective' land management, wherein groups cooperate on the management of a single piece of farmland (Fresh Studio 2010). At the time of this study, there were already as many as six producer groups under 'cooperative' management and more making the transition.

Past studies have found large potential for organic markets in Hanoi as well as room for improvement in the management systems and standards for production (Fresh Studio 2010). This research sought a detailed comparison of the different management systems, to determine the strengths and weaknesses of the transition to 'collective', to clarify the exact implications of the shift, and to determine areas for improvement. It was hypothesized that the transition from individual plot management to cooperative land management would assure better crop rotations, more reliable fallow periods, higher use of green manures, better and more reliable yields and higher quality and productivity overall; that cooperative systems would be perceived

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by the farmers as a net positive with an easier and more fair work environment (Whitney et al. 2014) and better income generation; that retailers dealing with these producer groups would prefer the 'collective' management system.

Farmer surveys were conducted in the field as semi-structured questionnaires with 6 managers and 24 member farmers from six organic vegetable PGS producer groups⁵. These six groups were randomly chosen from 13 local PGS groups; half were 'collectively' managed⁶, and half 'individually' managed⁷. Representatives from four randomly chosen retailers⁸ who deal with farm groups under both systems of management, were also interviewed. This study will focus on the economic and nutrient efficiency of these systems based on interviews, observations, and PGS bookkeeping. Data was processed with OpenOffice 3 Calc, 2010, and tested with the Student's *t*-test. .

Description of the Farming Area

Soc Son is a district of Hanoi located about 40km northwest of the city center, near Noi Bái International Airport and easily reachable via the Thang Long Highway. This rich delta region is largely rice fields at the moment but is undergoing a rapid transformation from countryside to suburb as the urban center of Hanoi expands and the population radiates outward to the surrounding villages. The area has 13 PGS groups with 141 farmers (16 male and 125 female), all growing market vegetables along with subsistence farm animals and rice fields. The weather and soil conditions in the area lead to rapid mineralization and heavy nutrient losses in soil with low pH and imbalances of soil Ca, K, and Mg. The area around Soc Son is within the Red River Delta, which tends to have higher soil quality but these soils have been heavily worked and are nutrient poor with very low CEC.

Each farmer group works within a single portion of land (avg. 6,000 m²) managed under organic standards, surrounded by a buffer zone, with an average of 9 members. They grow 24 different species of vegetable crops throughout the cropping cycle with an average farm yield of around 1.8 tons per month. Each farmer household had an average of 4.5 people with 1 cow or buffalo, 2 pigs and 20 chickens or ducks. PGS groups have app. 9 members with labor from family members and the occasional hired hand i.e. for heavy tilling with a buffalo.

Results

Group leaders reported average yields of 319 kg/ha/month. Major soil amendments included 25 kg/ha/month compost, 40 kg/ha/month mulch, and 1 kg ea/ha/month kitchen ash and lime. Horizontal nutrient balances from a three-month cropping plan (63 rows and 9 vegetable types) from the Than Cong group (collective) showed a positive balance of 8.3 kgN, 10.2 kgP, 6.1 kgK/ha/month. An extrapolation of this against other rotational and yield data leads to the conclusion that both management systems are likely in the positive (2.5kgN 4.3kgP 5.1kgK /ha/month). However, compost made by 'collective' farmers is of better quality (C:N 30:1) than that made by 'individual' farmers' which is more nitrogen rich (24:1), and only the collective groups regularly use green manures and fallow; future 'collective' cropping plans call for increases of both.

Farmers in both systems reported an average turnover of 2.8 million Vietnam dong (VND)/month (150USD). However, collective groups were cheaper to run for the farmers by area (1.5 million VND/ha/month for collective, vs. 2.3 million VND/ha/month for individual, $p=0.02$); the total costs of production per farmer within a PGS group ranged from 2-5 million VND/month for collective and 6-9 million VND/month for individual.

Likewise, labor differed greatly (collective 222hr/month, vs. individual 274hr/month, $p=0.002$). Farmers in collective management systems reported spending less time working on the field by area, deriving from less time on weed control and tillage. They also generally reported less time on management activities though they were ultimately responsible for a lot more (e.g. when and where to weed and who should do it). Individual groups had a daily meeting and all tended to have a monthly meeting, whereas, in collective groups, meetings took up little time as impromptu part of work on the field.

Retailers were asked a series of questions about the working relationship with PGS groups. A Student's *t*-test of all responses revealed that retailers preferred the quality of the collective groups products ($p=5e-04$),

⁵ located in the villages of Trung, Thanh Nhân and Bái Thuong, in the Thanh Xuân commune, Sóc Sơn district, Hanoi and part of the Thanh Xuân PGS Inter-group

⁶ Bái Thuong (n=6), Thanh Cong (n=5), Thanh Nhan (n=5)

⁷ An Duong (n=5), Doan Ket (n=4), Trung (n=5)

⁸ Organic Roots, EcoMart, Tam Dat and Vinagap in Hanoi

communication with collective groups ($p=8e-05$), product management of collective groups ($p=5e-04$), and business relations with collective groups ($p=4e-05$).

Discussion and Conclusions

Results from this study suggest that the transition from individual plot management to cooperative land management assures better crop rotations, more reliable fallow periods, higher use of green manures, better and more reliable yields and higher quality and productivity overall among these small-scale producers. The management of collective groups is more comprehensive but, at the same time, easier. Retailers prefer the collective management scheme, find that the products are better, and the groups easier to do business with. Collective labor is a more effective and efficient way to go about doing the more labor-intensive work i.e. weeding and tilling, where the majority of the labor happens. However, there are some important issues to tackle regarding yields, labor and income generation, to make the transition a smooth and high functioning one. There are also several areas where significant improvement could be made in both types of cropping systems, better management of inputs being paramount, especially in the making and storing of compost.

Suggestions

More in-depth review and data collection within these farmers groups are needed to determine what is really going on in the fields. The data presented here is very rough, to say the least. However, it should give a general picture of the possible areas to be addressed and may help to guide future research. It may also serve as a catalyst for good data collection on the field, throughout the farming practices, so that future analysis (especially nutrient analysis) can be more effective. Data collected in the field, throughout the farming practices, will also help in strengthening the organic standard within the PGS.

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