LOCAL FOOD SYSTEMS IN VIETNAM:
STRENGTHS AND OPPORTUNITIES

Dao The Anh, Denis Sautier
Centre for Agrarian System Research and Development (CASRAD)
Vietnam Academy of Agricultural Sciences (VAAS)
Km9, Thang Long Avenue,
An Khanh, Hoai du, Hanoi, Vietnam

ABSTRACT

Local food systems in Vietnam have a long history, reflected by the high number and abundance of traditional local specialty products which are enhanced during wartimes by the necessity of self production. Presently, Vietnamese agriculture comprises about 60% of the total labor force, with small-scale production areas. Agriculture has become much extraverted, and a significant exporter in numerous commodities. Still, in a context of rapid urbanization and sustained economic growth, urban markets are a major driver for agriculture. In 2003, peri-urban agriculture in the Hanoi "green belt" was estimated to represent about 40% of the city’s vegetable supply. At the national level, the value of domestic market doubled between 2001 and 2006 and it continues to grow quickly in terms of volume and quality requirements. Surveys show Vietnamese consumers are very sensitive to the origin and traceability of products. These opportunities are being taken advantage of by farmers’ organizations in cooperation with private enterprises which develop marketing and processing centers for farm production and strengthening local food systems. This paper discusses the cases of H’mong beef and sticky rice value chains for the domestic market. Finally, these initiatives open the way for more proactive public policy to promote the future of local food systems in Vietnam.

Key words: local food systems, urban markets, farmers’ organizations, food value chains

INTRODUCTION

After the period of Resolution Khoan 10 (in 1988) which centered around the land distribution for farming households, the sector of VN agriculture has contributed a considerable part to the GDP growth which increased more than four-folds between 1994: 220 $/per capita and 2009: 1068 $/per capita.

In 1990, Vietnam agriculture accounts for 32% GDP and growth rate of agriculture upon GDP increase by 4.2% per year (World bank, 2001). Thanks to the renovation process, Vietnam has rapidly met the objective of self-sufficiency and obtained a spectacular decrease in food insecurity.

Beyond covering the needs of its national food system, Vietnam became the secondary-ranking rice exporter all over the world, but the rice price tends to be reduced. Renovation policies have contributed to the poverty reduction all over the country from 58% in 1993 to 11% in 2010 (World Bank, 2011). This has been made possible by the responsibility of people and mobilization of household economy on intensively exploited small parcels of land the produce of which are both for the family and the market. The question is how this equititarian smallholder system will evolve along with urbanization trends and the increase in average incomes. Will it maintain the focus on local food systems considered at the family commune or district levels? Or will it be displaced by export crops, mechanization and increasing costs of labor? The transformation of rural economic structure is considered as a priority matter in the incentive policies to enhance the growth of agriculture.

Evolution of rice-based food system in Vietnam

Speaking of local food systems in Vietnam necessarily means speaking about rice. Rice represents about 60% of cultivated areas, and in 1997, accounted for 70% of the average Vietnamese diet (in energy intake) (Jaffee, 2011). In Vietnamese as in other Asian languages, “to eat” is translated by ‘to eat rice’. A large part of the rice producing units in Vietnam are produced mostly as priority to meet their own food supply. The households are typically small-scale, less than 0.3 ha in Red River Delta and 0.7 ha in Me Kong River Delta (Dao The Anh, 2003).

Rice has long been a dominant food staple in
Vietnam and is deeply ingrained in the country’s culture, traditions, and economy. Rice has been cultivated in parts of present-day Vietnam for several thousand years. While the first rice exports from Vietnam’s Mekong Delta date from the late 18th Century or earlier, a regularized export trade was launched in the 1930s and this continued on for several decades.

Agriculture and rice development in Vietnam are based on the delta exploitation. This consist of the use of different modes of cultivation adapting to different ecological conditions. Y. Coyaud (1950) distinguished the following types of cultivation with different elevations:

- Summer crop, non-stable;
- Summer crop, stable;
- Winter crop, non-stable, summer crop, stable,
- Winter crop, non-stable,
- Winter and summer crops, stable,
- Winter crop stable, summer crop non-stable,
- Winter crop, stable,
- Winter crop, non-stable,
- Flooded area, no rice cultivation.

In general, rice is grown in high and medium fields in Vietnam. The field is embanked to retain water. This is the method of rainfed lowland. On low field at a time when there were no dams yet, during the rainy season, the fields were flooded. The flood in the Red river flows abruptly without regular time like in the Mekong, so it is impossible to plant floating rice just like what they do in the south. It is possible only to plant rice during the dry season when water is scarce. This crop is called Chiem or winter rice. In this delta, the air is relatively fresh so the crop needs to have cold tolerant varieties. These varieties are also tolerant to drought, to acid and saline soils. They are early duration varieties but the vegetation period lasts to 6-7 months due to low temperature.

The combined impact of war-time disruptions and incentive problems associated with “collective” agriculture resulted in stagnant rice production during the 1960s and 1970s. To address a growing food deficit, Vietnam, both before and after the 1975 unification, needed to import rice, totaling more than one million tons per year (Bui Ba Bong and all, 2010).

To address the most severe disincentives from the “collective agricultural system”, farmers were permitted, after 1981, to sell their surplus production once they fulfilled their supply quota. Modest gains were made, although per capita production still did not recover to the level of 1960. More radical reforms were brought in with the launch of the Doi Moi policy in 1986, recognizing agricultural households as the basic unit of production and introducing a freer market for agricultural inputs and products. These reforms, together with subsequent advances in the development and spread of improved rice varieties, and investments in irrigation and water resources management, helped spur a dramatic acceleration of rice productivity and commercialization which has continued, virtually unstoppable, for the past two decades.

Fig. 1 and Table 1 illustrate this extended trajectory of paddy rice output expansion. Between 1990 and 2010, national paddy production doubled from 19.2 million tons to nearly 40 million tons. During the 1990s, both the area planted and the productivity changes each grew at a relatively rapid pace. The area of dedicated rice land increased only marginally from 4.11 million ha in 1990 to 4.21 million ha in 2000, yet improvements in water resources management and the availability of shorter growing period varieties enabled an increased intensity of plantings (i.e. crop seasons per year) from 1.47 to 1.82. The total sown area for rice rose steadily during the 1990s, reaching an all-time high of 7.67 million hectares in 2000.

Rice plantings subsequently declined as some lands—especially in the Red River Delta—were converted from agricultural to industrial or urban use, and as some other rice land were converted for use in aquaculture, fruit tree production, or, less commonly, other annual cash crops for domestic market. While rice plantings ticked up slightly following the food price spikes in 2008, the sown rice area in 2010 was below the 2000 peak and the level of dedicated rice land was more or less the same as that which was applied in 1990. Over time, the pace of productivity growth has slowed, having averaged more than 2.8% per annum in the late 1990s, yet only around 1.5% per annum during the past five years. In 2010, average national yields were 5.32 tons/ha, yet with wide variations among seasons, locations, and farm size categories. Average national yields have been increasing about 1 ton per hectare per decade.

While there have been localized problems with

1 Average national yields were 6.22 tons/ha during the (largest) Winter-Spring season. In contrast, average yields in the Summer-Autumn and Autumn-Winter seasons were 4.77 and 4.62 tons/ha, respectively.
2 Average yields were 3.18 tons/ha in 1990 and 4.24 tons/ha in 2000.
drought, pest and disease infestations, extended period of flood inundation, and the incidence of salt water intrusion, the national pattern of paddy production has been remarkably stable and consistent—a pattern which contrasts sharply with that of most other major rice producing countries in Asia. Only in two of the past 20 years—2001 and 2005—did national production fall below the total from the prior year and the scale of this drop was very small—between 300,000 and 400,000 tons (e.g. 0.8 and 1.3%). Year to year declines in the production within specific seasons has been somewhat more frequent, yet still relatively uncommon. The largest single drop occurred between the Autumn-Winter seasons of 1993 and 1994, when production fell by 800,000 tons. The largest recent decline occurred between the Summer-Autumn seasons of 2005 and 2006, when production fell by 750,000 tons. That was equivalent to a 7% drop for that particular season.

With expanding production, national output began to exceed domestic consumption and other requirements (i.e. for seed and feed) by the late 1980s and, during the first half of the 1990s, exports averaged some 1.66 million tons per year. This trade more than doubled, averaging some 3.36 million tons per year during the latter half of the 1990s. As illustrated in Fig. 2, Vietnam’s rice exports have experienced a more recent surge and are expected to exceed 7 million tons in 2011. In 2010, nearly one-third of national rice production (after considering the conversion from paddy) was exported. These expanded exports have serviced both commercial markets, especially in Africa, and public food distribution and safety net programs. While the gross value of these exports has exceeded $2.5 or even 3 billion in recent years, the net foreign exchange earnings are considerably lower given the heavy use of imported fertilizers and agro-chemicals, use of imported farm equipment and rice processing equipment, and fuel to run this equipment and to run river barges and other forms of logistics. Some 40 to 50% of the costs of exportable rice are associated with imported inputs. Rice is a relatively low value (and low value added) commodity. At a policy level, the “value” of rice exports also needs to take into account (i) unmeasured costs, including the depreciated value

### Table 1. Period trends in rice sown area, productivity and paddy output

(Average annual change; %)

<table>
<thead>
<tr>
<th>Periods</th>
<th>Sown area</th>
<th>Yield</th>
<th>Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-95</td>
<td>2.16</td>
<td>3.05</td>
<td>5.40</td>
</tr>
<tr>
<td>96-00</td>
<td>2.54</td>
<td>2.84</td>
<td>5.38</td>
</tr>
<tr>
<td>01-05</td>
<td>-0.86</td>
<td>2.91</td>
<td>2.05</td>
</tr>
<tr>
<td>06-10</td>
<td>2.60</td>
<td>1.72</td>
<td>4.32</td>
</tr>
</tbody>
</table>
on dedicated water resources infrastructure and the systems for irrigation management, (ii) broader social costs, especially adverse environmental impacts associated with high levels of agrochemicals and fertilizer use (and run-off), and (iii) the opportunity costs of the land, labor, water and other resources devoted to producing surplus rice— as opposed to producing other exportable or import- commodities which can be substituted. When these factors are taken into account if it is evident that generating ever-increasing levels of rice output and continuing to expand rice exports is not, necessarily a good thing. ‘More’ is not always ‘better’. And, under many scenarios, producing and exporting less rice could prove to be much better—from a welfare and economic growth perspective— for Vietnam.

Thus, in the space of 25 years, Vietnam has moved from a situation of a national food deficit—with a relatively widespread incidence of hunger—to a situation of a very large food surplus with only modest pockets of hunger. Table 2 summarizes the changing rice balance over this period. The country has gone from a modest rice deficit in 1986 to positive balances of approximately 3, 5, and 8 million tons in 1990, 2000, and 2010, respectively. While in 1990, the surplus supply was equivalent to 28% of ‘rice available’, in 2010 this proportion was 39%. Over this period, the share of exports in ‘rice available’ has precisely doubled from 16% to 32%.

Table 3 summarizes the progress of Vietnam in reducing the incidence of undernourishment and improvements in per capita energy supply. Long-term improvements in rice productivity certainly contributed to these trends. In these and other respects, Vietnam’s performance matches or exceeds that of other Asian countries. For example, while the share of Vietnam’s population classified as ‘undernourished’ fell to 11% over the 2005-07 period, the comparative proportions for Indonesia, Philippines, Thailand, and Cambodia were 13%, 15%, 16%, and 22% respectively. During the 2005 to 2007 period, Vietnam’s per capita dietary energy supply was 2770 per day, surpassing the results of all other Asian developing countries other than China. The comparable figures for Thailand and Indonesia were 2530 and 2540.

While addressing malnutrition (and especially child malnutrition) still remains a challenge for Vietnam, this is less and less an issue of food (or, more narrowly, rice) availability. The primary exceptions to that are with localized and temporary losses of crops or stored foods where natural disasters have occurred. Certain segments of the population remain vulnerable to food insecurity, yet this is now primarily an issue of accessibility, associated with periodic food price spikes, temporary loss of income/livelihood activity, or, in some locations, chronic poverty. While the proportion of Vietnam’s population that regularly lacks access to sufficient food energy is now in the single digits, the incidence of child (underweight) malnutrition is higher, at 18.9% nationally and above 25% in some regions. Issues associated with

---

3 And the costs of methane emissions from irrigated rice production, especially in the Red River and Mekong River Deltas.
4 This is a clear conclusion from the policy reform simulation modeling undertaken as part of this research. See Policy Note #3 for the specific results.
5 Defined by FAO as having an inadequate daily energy supply to maintain an active pattern of activity.
poor maternal health, nutritional imbalances in diets, lack of access to clean water supplies, and the incidence of certain diseases or parasites tend to be more important factors to these patterns than the lack of food, per se. According to FAO data, rice as a share of total calories consumed in the Vietnamese diet peaked in the period between 1975 and 1985 at approximately 75%. As Fig. 3 illustrates, this share has been declining steadily and is now approximately 55%. This is still quite high in comparison with other Asian middle income countries. For example, the (2005-07) share of rice in dietary energy supply was 26%, 38%, 48%, and 49% in China, Thailand, Philippines, and Indonesia, respectively. We would expect the share of rice in national calorie consumption to fall below 50% in the coming years as dietary patterns continue to diversify in Vietnam. Rice as a share of household expenditures is steadily declining. It was 17% in 1996, yet below 8% in 2010.

Based on VHLSS, GSO and other data, it

### Table 2. Vietnam: National rice balance, 1986 to 2010

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Paddy production</td>
<td>16003</td>
<td>19225</td>
<td>24964</td>
<td>32530</td>
<td>35833</td>
<td>39973</td>
</tr>
<tr>
<td>Seed</td>
<td>480</td>
<td>769</td>
<td>989</td>
<td>1301</td>
<td>1075</td>
<td>1199</td>
</tr>
<tr>
<td>Postharvest loss</td>
<td>1600</td>
<td>1922</td>
<td>2496</td>
<td>3253</td>
<td>3583</td>
<td>3997</td>
</tr>
<tr>
<td>Feed</td>
<td>480</td>
<td>577</td>
<td>749</td>
<td>976</td>
<td>1792</td>
<td>1999</td>
</tr>
<tr>
<td>Rice available</td>
<td>7394</td>
<td>10372</td>
<td>13468</td>
<td>17550</td>
<td>19393</td>
<td>21633</td>
</tr>
<tr>
<td>National reserves</td>
<td>100</td>
<td>100</td>
<td>200</td>
<td>1179</td>
<td>831</td>
<td>869</td>
</tr>
<tr>
<td>Industry demand</td>
<td>180</td>
<td>207</td>
<td>269</td>
<td>351</td>
<td>582</td>
<td>649</td>
</tr>
<tr>
<td>Rice for consumption</td>
<td>7245</td>
<td>7169</td>
<td>9610</td>
<td>11043</td>
<td>11173</td>
<td>11685</td>
</tr>
<tr>
<td>Balance of supply and demand</td>
<td>-132</td>
<td>2896</td>
<td>3389</td>
<td>4977</td>
<td>6807</td>
<td>8430</td>
</tr>
<tr>
<td>Rice export</td>
<td>0</td>
<td>1624</td>
<td>1988</td>
<td>3477</td>
<td>5255</td>
<td>6828</td>
</tr>
<tr>
<td>Rice import</td>
<td>132</td>
<td>0</td>
<td>10</td>
<td>40</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>Estimated carry over stocks</td>
<td>0</td>
<td>1272</td>
<td>1411</td>
<td>1540</td>
<td>1602</td>
<td>1702</td>
</tr>
</tbody>
</table>

### Table 3. National food security indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Measure</th>
<th>Period average</th>
<th>Average annual change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>90-92</td>
<td>95-97</td>
<td>00-02</td>
</tr>
<tr>
<td>Proportion of undernourished population</td>
<td>Percent</td>
<td>31</td>
<td>22</td>
</tr>
<tr>
<td>Number of undernourished</td>
<td>Millions</td>
<td>21.0</td>
<td>16.7</td>
</tr>
<tr>
<td>Minimum dietary energy requirement</td>
<td>Kcal/person/day</td>
<td>1710</td>
<td>1740</td>
</tr>
<tr>
<td>Dietary energy supply</td>
<td>Kcal/person/day</td>
<td>2090</td>
<td>2310</td>
</tr>
</tbody>
</table>

Indeed, in 2006, the incidence of child malnutrition was only slightly lower for Vietnam’s middle income quintile (23.2%) than it was for its poorest (28.6%) and near poor (24.5%) quintiles. According to FAO data, rice as a share of total calories consumed in the Vietnamese diet peaked in the period between 1975 and 1985 at approximately 75%. As Fig. 3 illustrates, this share has been declining steadily and is now approximately 55%. This is still quite high in comparison with other Asian middle income countries. For example, the (2005-07) share of rice in dietary energy supply was 26%, 38%, 48%, and 49% in China, Thailand, Philippines, and Indonesia, respectively. We would expect the share of rice in national calorie consumption to fall below 50% in the coming years as dietary patterns continue to diversify in Vietnam. Rice as a share of household expenditures is steadily declining. It was 17% in 1996, yet below 8% in 2010. Based on VHLSS, GSO and other data, it
appears that per capita rice consumption in Vietnam peaked several years ago and has now begun to decline. According to VHLSS surveys, in-house rice consumption per capita fell by an average of 1.4% between 2002 and 2008, with the pace of decline being higher for the urban population (1.7%); and amongst middle and upper income groups (1.9% and 2.4%, respectively). The broader national pattern is consistent with trends observed among other Asian countries (Table 4). With per capita consumption now declining faster than Vietnam’s population growth rate, the absolute consumption of rice in Vietnam has begun to decline, albeit very slowly.

Per capita consumption now in Vietnam is approximately 135 kg, although this has fallen to just over 100 kg within the urban population. Consumption patterns within Asia (and within some individual countries) are quite diverse, although for many countries which have moved into middle income status, consumption seems to decline before leveling off in the range of 75 to 100 kilograms per capita (Table 5). The government’s Food Security Resolution 63/NQ-CP anticipates per capita rice consumption in Vietnam of 100 kilograms by 2020. This would involve a much accelerated decline from the current trend, yet per capita consumption could be expected to reach that level during the subsequent decade.

The debate on future prospects for rice production had been reactivated by the 2008 world food crisis which showed a very high volatility of international process, particularly rice. In Vietnam, the defenders of local food systems have supported the Resolution 63 (enacted by PCVN in --. 2009). One of its main measures is to define a protected area of 3.8 million ha of rice field by government planning. The designated areas must be maintained as paddy land, although not necessarily cultivated in paddies. More recently in 2011, a World Bank-coordinated study (Jaffee et al., 2011) observed that regions most concentrated in rice production...
in Vietnam are also frequently the less developed localities. Considering that the growth of rice production and the potential for exports actually concentrates for 2/3 on 5 Provinces from the South of Vietnam and on 280,000 producers, the study concludes that national food security is ensured, that efforts can be concentrated on the core of what is called by them a «rice belt», and that the objective to maintain 3.0 to 3.3 million ha paddy land is justified (ibidem).

Therefore the debate exists between “concentration” vs. “decentralization” of rice production. Yet on all accounts, a large part of Vietnam rice production and rice producers will maintain their orientation for self-production or local markets – especially in the Red River Delta in the North where production units are smaller and producers have already developed a high level of pluri-activity. The contrasts will tend to increase with the Mekong delta in the South where commercial specialization will take place. Finally, the Vietnamese example may provide a good illustration that local food systems and exporting food systems may coexist.

**Strong domestic market in Vietnam**

Until 2006, Vietnam’s population is 84,155,800 people, ranking second in Southeast Asia, the 6th in Asia and the 13th all over the world. Its annual growth rate is roughly 1.26%, in which, 72.88% are living in rural areas, and 27.12% in urban ones (GSO, 2008). This creates a high demand for food, and the domestic market plays an increasing role in the food market of Vietnam.

Table 6 clearly shows that food consumption and expenditure per capita in both urban and rural areas are increasing. This shows that the lives of the people in Vietnam have improved. The high demand is also one of the main reasons impacting on the prices of food. Until 2002 to now, food price is continuously increasing, especially in the year 2007, foodstuff and food CPI increase by 11.2% and especially in early 2008, the price of many foods increase from 25 – 30% (MARD, 2008) despite of the fact that, in 2006, the supply of many goods has reduced in comparison to 2004, the year chosen as standard line in calculating prices. The labor structure change can explain for that, a number of laborers have left the agriculture sector to pursue careers in industrial and service sectors, resulting in higher rate of food purchases.

The value of food consumption, as well as the value of exports, has increased in the period 1993 – 2006. During this period, the value of domestic consumption has always been higher than the value of exports. The data shows that the domestic agricultural market still plays a more important economic role than the export market, as shown by (Moustier et al., 2003), although the difference between the two is decreasing.

Moreover, some domestic agricultural products will face difficulties in exportation if they cannot meet international standards or rules of WTO on SPS and others. Selling in the domestic market, which has less demanding standards for quality, will be necessary for the inclusion of small farmers. And the increasing standards of quality in the domestic market (in particular in supermarkets) can serve as a first step before entering the international market.

**Agricultural diversification**

The development of domestic market leads to agricultural diversification. With regard to diversification coefficient of cultivation, the highest is in Southeast, the lowest is Highland and Mekong River Delta. With regard to agricultural diversification coefficient, the highest efficient is in the Southeast, Central South coast, and

---

1 In Vietnam, consumption price is usually calculated by exchanging it into 1999 and 2004 name as comparative price. It is considered as standard line to define the change of price over years.
## Table 6. Consumption and expenditure for food in Vietnam

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption in urban areas (1000 VND/capita)</td>
<td>1455</td>
<td>1830</td>
<td>2302</td>
<td>3050</td>
<td>3779</td>
</tr>
<tr>
<td>Consumption in rural areas (1000 VND/capita)</td>
<td>1006</td>
<td>1236</td>
<td>1519</td>
<td>1793</td>
<td>2235</td>
</tr>
<tr>
<td>Population in urban areas (1000 people)</td>
<td>13,961.2</td>
<td>17,464.6</td>
<td>19,873.3</td>
<td>21,601.4</td>
<td>23,046.1</td>
</tr>
<tr>
<td>Population in rural areas (1000 people)</td>
<td>55,683.3</td>
<td>57,991.7</td>
<td>59665.4</td>
<td>59,836.3</td>
<td>60,266.9</td>
</tr>
<tr>
<td>Consumption in urban areas (million VND)</td>
<td>20,313,546</td>
<td>31,960,218</td>
<td>45,748,337</td>
<td>65,884,270</td>
<td>87,091,212</td>
</tr>
<tr>
<td>Consumption in rural areas (million VND)</td>
<td>56,017,400</td>
<td>71,677,741</td>
<td>90,631,743</td>
<td>107,286,486</td>
<td>134,696,522</td>
</tr>
<tr>
<td>Total consumption (Million VND)</td>
<td>76,330,946</td>
<td>103,637,959</td>
<td>136,380,079</td>
<td>173,170,756</td>
<td>221,787,733</td>
</tr>
<tr>
<td>Exchange rate (VND/USD)</td>
<td>11,100</td>
<td>13,500</td>
<td>15,100</td>
<td>15,700</td>
<td>16,100</td>
</tr>
<tr>
<td>Total consumption (billion USD)</td>
<td>6.9</td>
<td>7.7</td>
<td>9.0</td>
<td>11.0</td>
<td>13.7</td>
</tr>
<tr>
<td>Average consumption/capita (USD)</td>
<td>98.7</td>
<td>101.7</td>
<td>113.5</td>
<td>135.4</td>
<td>165.3</td>
</tr>
<tr>
<td>Total food purchases (USD)*</td>
<td>3.5</td>
<td>3.7</td>
<td>6.7</td>
<td>8.6</td>
<td>11.0</td>
</tr>
<tr>
<td>Value of agricultural exports (billion USD)**</td>
<td>1.3</td>
<td>3.1</td>
<td>4.4</td>
<td>5.8</td>
<td>9.6</td>
</tr>
<tr>
<td>Rate of purchase in urban areas (%)</td>
<td>95.2</td>
<td>95.3</td>
<td>95.4</td>
<td>95.29</td>
<td>95.78</td>
</tr>
<tr>
<td>Rate of purchase in rural areas (%)</td>
<td>56.8</td>
<td>63.8</td>
<td>71.75</td>
<td>70.02</td>
<td>72.26</td>
</tr>
<tr>
<td>Expenditure in urban areas (1000 VND/capita)</td>
<td>1384</td>
<td>1743</td>
<td>2198</td>
<td>2907</td>
<td>3620</td>
</tr>
<tr>
<td>Expenditure in rural areas (1000 VND/capita)</td>
<td>571</td>
<td>786</td>
<td>1086</td>
<td>1255</td>
<td>1615</td>
</tr>
<tr>
<td>Expenditure in urban areas (million VND)</td>
<td>19,322,301</td>
<td>30,440,798</td>
<td>43,681,513</td>
<td>62,795,270</td>
<td>83,426,882</td>
</tr>
<tr>
<td>Expenditure in rural areas (million VND)</td>
<td>31,795,164</td>
<td>45,581,476</td>
<td>64,796,624</td>
<td>75,094,557</td>
<td>97,331,044</td>
</tr>
</tbody>
</table>


*All data are in current prices; food purchases include cigarettes and drinks.

Northeast. With regard to agriculture-sylviculture-aquaculture’s region, areas having highest coefficient also are Southeast, Central South coast, and Northeast. On the contrary, lowest coefficient expressing specialization is in the Highland.

Diversification coefficient all over the country increased in 7 years from 1996 to 2002, in which cultivated diversification had the fastest increase, then agriculture and agriculture-sylviculture-aquaculture. The region having the highest increase in diversification coefficient is the Southeast; Meanwhile, all other regions have the tendency of reducing the diversification. Regions having the lowest increase in diversification coefficient are Highland, Red River Delta, Central North, and Mekong River Delta (Table 7).
At the household level, the diversification of agricultural products from rice and the diversification of farmers’ business activities in an effort to ensure the farmers’ income has been discussed and settled as well as the situation of other agricultural countries in East and South Asia last years before. In the 1990s in Vietnam, rate of rice upon agricultural GDP accounted for about 40%, in China and Thailand, this rate was only around 21% and 11% respectively. In 1960s, these countries had the similar rice structure in agriculture like Vietnam’s structure at present. (World Bank, cited by Barker R., 2001). One big question is whether Vietnam will further develop following these diversification trends of countries? Our hypothesis is the production diversification of farming households in one area will be the motivation of transformation of rural economic structure.

The agricultural development process at the sub-region level in Red river delta in recent period shows that some of the sub-regions can strong diversify, in contrast to others which are less diversified (Dao The Tuan, Dao The Anh, 1997). In order to explain obstacles or advantages of this diversification process, we should deeply research these factors’ effect at farming household level in sub-regions. We should differ the diversification at the regional level (between types of households) and diversification at the household level. The concept of economic activities diversification of households includes non-agricultural activities which bring income for households because these types of economic activities have developed since long years ago because of the small field area.

The production diversification at the household


<table>
<thead>
<tr>
<th></th>
<th>Average Simpson diversification coefficient of crops</th>
<th>Average Simpson diversification coefficient in agriculture</th>
<th>Growth rate of Simpson diversification coefficient in crops</th>
<th>Growth rate of Simpson diversification coefficient in agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole country</td>
<td>0.58</td>
<td>0.71</td>
<td>0.89</td>
<td>0.77</td>
</tr>
<tr>
<td>Red river delta</td>
<td>0.49</td>
<td>0.68</td>
<td>-4.51</td>
<td>-0.32</td>
</tr>
<tr>
<td>Northeast</td>
<td>0.56</td>
<td>0.73</td>
<td>-0.75</td>
<td>0.16</td>
</tr>
<tr>
<td>Northwest</td>
<td>0.56</td>
<td>0.69</td>
<td>-0.55</td>
<td>-0.80</td>
</tr>
<tr>
<td>Central north</td>
<td>0.51</td>
<td>0.69</td>
<td>-4.07</td>
<td>-0.82</td>
</tr>
<tr>
<td>Central south coast</td>
<td>0.85</td>
<td>0.71</td>
<td>-1.67</td>
<td>-0.01</td>
</tr>
<tr>
<td>Highland</td>
<td>0.46</td>
<td>0.56</td>
<td>-6.02</td>
<td>-5.89</td>
</tr>
<tr>
<td>Southeast</td>
<td>0.66</td>
<td>0.77</td>
<td>4.66</td>
<td>2.58</td>
</tr>
<tr>
<td>Mekong river delta</td>
<td>0.48</td>
<td>0.63</td>
<td>-3.50</td>
<td>-1.93</td>
</tr>
</tbody>
</table>

Source: The calculations were based on data of Statistics head department (2003)
level is now popular in the Red river delta (above 70%) and is considered as the temporary transformation stage in the specialization process (Dao The Anh, 2003). However, the farmers have to overcome many obstacles to participate deeply into the market through commodity production and business. The production diversification at the household level will help the poor households to have stable income. This achievement has once decided other last diversification research in the world (Todaro, 1982).

In contrast, the specialization assists some rich households to do business by producing and exchanging commodities in the market. For this household type, the main difficulty is shortage of market information and experience. The market participation at high level caused many risks for households, therefore, most of them select production diversification at the household level. The agro-products production specialization is only carried by households who are in close relation with the consumption market through organized commodity chain. At present, the same level of oral-negotiated relationship with the market with breeding products or non-agricultural products may adapt following the market changes so that the households can easily specialize and face lower risks. One hypothesis is the fact that the crop cultivation products need to be closer organized because of its less adaptability.

The production diversification at the household level is now popular in different regions. The production diversification at the household level will help the poor households to have stable income. In contrast, the specialization assists some rich households to do business by producing and exchanging commodities in the market. For this household type, the main difficulty is shortage of market information and experience. The market participation at the high level caused many risks for households; therefore most of them select production diversification at the household level. Mekong River shows that farmer after specializing in rice (with more and more risk), are now choosing the diversification strategy. In some remote areas, minority farmers experience constraints in diversifying their livelihood activities. So this suggests a more deep research by case study to explore the factor of diversification to enable the realization of coping strategy for poor farmers.

**Fast change in food distribution system**

Vietnam is now at a turning point as regards the nature of food distribution. The present diversity in food distribution presents a unique picture and fits the disparity in purchasing power of the population. Yet, this balance is clearly jeopardized by the present administrative policies and by the rapid development of supermarkets. Currently in Vietnam, supermarkets cannot be considered a poor-friendly distribution chain (especially in Hanoi). This is in line with the capital-intensive rather than labor-intensive nature of business and the rationale of a limited number of large-scale distribution centers which are not adapted to the transportation constraints of the poor segments of the population. Supermarkets do, however, potentially offer income-generating opportunities for small-scale farmers who can form associations and guarantee product quality. Our study has enabled the formulation of recommendations designed to help food distribution systems better fit the needs of the poor - be they farmers, consumers or traders. Some of these recommendations have been acknowledged by public officials who agree that they are worthwhile, in particular a pilot action on the allocation of specific trading areas for street vendors who comply with rules of hygiene and food safety.

In late 2001, Vietnam had a total of 70 supermarkets, 32 in Hanoi and 38 in Ho Chi Minh City, while there were none before 1990. Ten years later, there are 571 supermarkets. The supermarkets are concentrated in the big cities: 142 in Ho Chi Minh city, 74 in Hanoi, 23 in Danang, 22 in Vinh city (NOIP, 2011). Consumers are expressing a growing concern for the quality - and more importantly safety - of food products. This demand has encouraged the development of supermarkets as the point of sale for food products and is also promoting new retailing enterprises operating at market stalls or shops, for which efforts towards visual quality (attractive presentation or packaging) and communication about product safety are major promotional tools.

**Local products promotion by TRIPs**

The renovation in economy and administration in recent years has helped Vietnam not only out of food shortages but also to increasingly export agricultural goods (Athukorala, 2009). After joining World Trade Organization (WTO) in January 2007, Vietnam’s agricultural products are facing a fierce competition on both domestic and international markets. In domestic markets, the consumers’ demand is increasing, especially in big cities where
high income groups are emerging and expressing higher requirements in terms of quality, diversity and food safety (Figué and Moustier 2009). One competitive asset of national products is the Vietnamese consumers’ confidence in food products associated with specific geographical areas that have a special quality reputation (Tran 2005). On external markets, prices of main exports like rice, coffee, rubber, cashew, pepper are continuously fluctuating in the global market. Diversification is therefore required in two directions: i) To produce products in big quantity, average quality ii) To push up export products of high quality and high added value based on Vietnamese products’ specification such as geographical indications. Typical natural characteristics as well as tradition and people’s skills in different localities are the conditions forming the basis of many famous local quality products (Poulain 1997). This kind of product often suffers abuses to their reputation, either through fraud or through name usurpation, damaging consumers’ trust and discouraging the production. Protecting the names of these products through geographical indication and maintaining their reputation as a local public good, are mechanisms currently applied by many countries to prevent famous products from being abused in reputation locally and globally. Many countries like France, Italy, Spain, India and Thailand have gained success in the field of geographical indication protection (FAO 2009). At the international level, geographical indications were recognized by the 1994 Trade Related Intellectual Property Rights (TRIPS) of WTO, as a full-pledged Intellectual Property Rights, on the same level as copyrights or patents.

In Vietnam, protected geographical indication (GI) has recently received attention as a strategy for local specialty food product development. Expected advantages of making good use of GI include increased fame and increased value, as well as preventing appropriation, abuse and fraud for famous products of Vietnam in the domestic and international markets –such as the Vietnamese Phu Quoc fish sauce frequently sold in the European market with a wrong indication of origin that it is produced in Thailand. Besides, considering the high number of local varieties currently marketed in Vietnam through geographical names and produced within specific ecosystems, GI appears as a possible tool to secure biodiversity and contain its current erosion process. Finally, the geographical indication tools would also enable some rural products to keep the cultural and regional identity and reinforce their commercial strength in the globalization context.

In 2010, 25 agricultural products have received GI registration in Vietnam, including fish sauce from Phu Quoc, Thanh Ha Thieu Litchi (Hai Duong province) and Hai Hau Xoan perfumed rice (Nam Dinh province), Dai Hoang Bananas (NamDinh province), Phuc Trach Pomelo (Ha Tinh province), Bac Kan seedless persimmon (Bac Kan province)... Potentially, a high number of agricultural products of Vietnam might be protected. However, the evidence available in the implementation processes for protection, use and management of geographical indications in Vietnam points out to several legal, economic and social problems which need to be addressed in order to bring into play the potential advantages from geographical indication. The issue at stake is not just a matter of experience or skills but relates to the organizational model required for ensuring the economic efficiency of the product differentiation scheme.

Local food systems overcome challenges

**Innovative case study 1: Hoa vang sticky rice of Kinh mon district, in Red river delta**

**Introduction to the territory and specialty products**

Hoa vang (“Golden flower”) sticky rice is one of the typical products of Vietnam. For many years, Hoa vang sticky rice has been used as material to make special foods such as wine, sticky rice cake or boiled sticky rice, that no other rice varieties can compare with it. Until 1986, most of Northern farmers used to grow Hoa vang on their land to meet the household demand. But in recent years, due to limited productivity and output, the area for Hoa vang was sharply reduced. In 2009, the area under Hoa vang sticky rice in Vietnam was 14,094 ha, and accounted for only 0,02% of the total rice area of the country (Le Duc Thinh, 2007).

Kinh Mon district, Hai Duong province is quite famous for growing Hoa vang sticky rice in the Red River delta. The district cultivates about 700 ha of Hoa vang sticky rice with the best quality in Hai Duong province. Kinh Mon has 16,326 hectares of natural land area, in which agricultural land area is 8,929 hectares (accounting for 54.7%). The district is surrounded by fours big rivers which cause a lot of difficulties for transport system development. When the An Thai bridge was not yet constructed, people had to travel to Kinh Mon by ferry, therefore, Kinh Mon was considered as “island district” of the Northern delta. Maybe, due to this inconvenient...
condition Kinh Mon is still one of the remaining important sticky rice production areas. On the other hand, the rivers and mountains have created fertile alluvial land. The farmers in the area have a long tradition of growing rice and in some families, they are preserving the Hoa vang sticky rice variety.

Hoa vang rice has some typical characteristics: this variety can be grown only one crop per year (winter crop). It requires a long time of cultivation of about 150 days from sowing. The rice plant is high and can bend down easily. It is famous for its good flavor. Due to its long growing time, this rice variety is often harvested late. For this reason its aroma is attributed to be attractive to rats, pests and diseases. Hoa vang sticky rice has a low productivity (60% of hybrid sticky rice variety 415). If the cultivation practice is not based on the correct production protocol and is attacked by stem borer, Hoa vang sticky rice may even become impossible to harvest. The shape of Hoa vang grain is round and not broken. The rice has good flavor, especially after cooking, and has the proper stickiness and sheen.

It has become difficult for consumers to find the real Hoa vang rice in the market. They complain that the stickiness and aroma of Hoa vang are not as good as they were in the past. Through a survey of sticky rice commodity chain (Pham Cong Nghiep, 2007), we can see that currently, Hoa vang rice is often mixed with other low quality sticky rice. The mixing rate may be about 30 – 50 % depending on the commodity channels.

So in this complex situation, in order to preserve the Hoa vang sticky rice in production, the CoDI intervention approach was necessary because it combines technological and institutional innovation.

Establishment and development of the farmer’s association

Key factors for linking farmers to markets: Selling a product with special quality aroma and stickiness, packaged with information about the farmers’ organization.

In 2006, the first Hoa vang sticky rice commercialization and production farmer group was established with 36 members and cultivated an area of 2.3 ha under the research–action result of the Centre for Agrarian System Research and Development (CASRAD) under the framework of the ‘Superchain’ project with funds coming from IFAD/Malica. By the end of 2007, there were three farmer groups with 131 members covering an area of 10 ha (Moustier et al. 2009). The CoDI intervention in 2008, assisted the groups to overcome the organization limitation of the farmer groups, as well as to promote its marketing activities by assisting the three farmer groups of Kinh Mon district to gain a legal form of organization. However, deciding which formation of organization, association or cooperative was most appropriate was a big challenge for the groups. This work needed time to search and discuss with the members and the local authorities. In the locality, the idea to develop a cooperative of Hoa vang production and distribution was not agreed by the communal agricultural cooperative. They felt that it was not good to establish another cooperative in the commune (though it is not restricted by law). After many discussions, the farmer groups decided to develop themselves into an Association of Hoa vang producers and traders.

The ‘Association of Hoa vang Poduction and Distribution in Kinh Mon’ was officially established according to Decision No.3651/QD–UBND of Hai Duong provincial people’s committee on 14 October 2008. The first meeting was organized on Dec 13, 2008. By 2010, the association had grown to 305 members and an area of 20 ha in the three communes of Kinh Mon district including: An Phu, Pham Menh, Long Xuyen communes. And the potential members in the district are still important, but they have to learn for respecting technical and organizational conditions to participate in the Association (Fig. 5).

The structure of the association includes the leading board and specialized groups like rice commodity production group, technical group in charge of selecting and producing seeds, monitoring the member’s practice; marketing group in charge of finding buyers and control quality of products sold to the association; accounting–financial group.

The process of development of farmers’ organization in producing and trading Hoa vang in Kinh mon district is shown in Table 8.

Criteria for selecting members: Due to its special biological characteristics, Hoa vang sticky rice needs to be grown in one concentrated area for appropriate protection and treatment. Therefore, farmers should come from the same village for easier clustering. To become a member of the group, the household must grow Hoa vang rice in the planned area, and must be willing to join and follow the group’s regulations. The group appoints its head and vice–head. The head of the group is responsible for designing the production plan:
area, seed demand and guidance on the technical protocols. The group also designs the regulations and orientations for operation. The members’ meeting has the highest authority in order to approve and make decisions regarding the group’s organization, regulations and activities.

Before establishing the association, the three farmers’ groups had linked up to organize joint selling and use the quality seeds from the first group to give to the members of new groups. They established one marketing group of three members who are responsible for trading.

Collective Action of Association: technical considerations (cultivation technical protocol, processing, preservation) are the key factors that help the product of the association to reach the desired quality standard and meet the demands of the urban market. The members were trained on general technical protocols before joining in the association. Some compulsory factors to ensure the products’ quality include: using the quality variety selected by the association, using organic fertilizer, putting down equally between organic and inorganic fertilizers. The micro-organic fertilizer can be used to replace entirely or partly. The association organized some input services for the members, such as fertilizers and plant protection drugs (Table 9).

Reorganization of production and post-harvest process for quality improvement

Implementing collective production protocol

Building the technical protocol based local knowledge - Village Crop Fairs: To build the

**Table 8. Farmers’ organization development**

<table>
<thead>
<tr>
<th>Year</th>
<th>Farmer organization</th>
<th>Household number</th>
<th>Area (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>1 group</td>
<td>36</td>
<td>2.3</td>
</tr>
<tr>
<td>2007</td>
<td>3 groups</td>
<td>131</td>
<td>10</td>
</tr>
<tr>
<td>2008</td>
<td>Association</td>
<td>131</td>
<td>10</td>
</tr>
<tr>
<td>2009</td>
<td>Association</td>
<td>253</td>
<td>20</td>
</tr>
<tr>
<td>2010</td>
<td>Association</td>
<td>363</td>
<td>23.4</td>
</tr>
</tbody>
</table>
technical protocol for Hoa vang production and processing, a survey on rice production and processing was conducted within 50 households who had production experiences. The result of this survey became the basis for the design of the technical protocol for Hoa vang sticky rice production. This protocol has been used to train the member farmers and was improved with the opinions gained after the annual workshop and field workshop with the village crops fairs approach.

One of the biggest constraints to farmers in following the protocol was that they did not have enough manure. Only 10% of members used manure. Therefore, a test was carried out to partly use microbial fertilizer instead of manure. The result showed that using microbial fertilizer has good results, high productivity and good quality.

Regeneration and Preservation of basic seeds at local level - Community Germplasm Nurseries:

The farmers had the habits to select and preserve seeds themselves, therefore, after many years, the seeds degenerated. To help farmers provide themselves their quality seeds, we consulted and helped farmers to restore the traditional Hoa vang rice according to the protocol required by Ministry of Agriculture and Rural Development (MARD). The result can be seen in the crop season of 2008, when the association restored successfully the traditional Hoa vang rice.

Hoa vang sticky rice seed production: To ensure that all the members of the association used the good general seeds, we consulted and helped farmers to restore the traditional Hoa vang rice according to the protocol required by Ministry of Agriculture and Rural Development (MARD). The result can be seen in the crop season of 2008, when the association restored successfully the traditional Hoa vang rice.

Hoa vang sticky rice seed production: To ensure that all the members of the association used the good general seeds, the association found one group who specialized in producing seeds (4 members). The group had the task to produce and provide seeds for the association. The seed production protocol of the group was monitored by the leading board of the association. At each harvest, the association can produce 1,000 kg of high quality seeds.

Production of Hoa vang commodity rice: With good seed resources and collective technical protocols, the member households have started to produce Hoa vang sticky rice in their own fields. To help the members follow the protocol closely, the association developed an internal quality control system. This system defines clearly the stages to be inspected, criteria for inspection, method of inspection and the person taking the duty. The leaders appoint people to visit and evaluate the protocol practice in the field of each household over each rice growing period. The information from that will be used to assess and classify the quality of household products later. If the product is not qualified, the association will not purchase.

Nowadays, the association produces about 80 tons of quality Hoa vang sticky rice paddy.

Processing and packaging improvement – Food processing park.

Collective processing: In order to guarantee the output quality of rice the CoDI project and communal authority have supported the Association to build a Food Processing Park specialized for Hoa vang sticky rice. In the past, sticky rice was often mixed with other rice varieties during the processing because they were processed in the same machine. An phu commune Committee has offered to Association 472,7 m2 of land for building an Association office and Food Processing Park. The Association and CoDI project have co-invested 78 millions VND (ca EUR3,200) for building the FPP in 2009. The FPP has started to operate in 2010 and is helping the Association to manage the sticky rice quality better through processing and packaging control. The FPP also contributes to a reduction of processing cost. The FPP and Association office became also the site for meeting, training and knowledge exchanges among farmers. This

<table>
<thead>
<tr>
<th>Criteria</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of households using the group’s seeds (%)</td>
<td>100</td>
<td>72</td>
<td>10*</td>
</tr>
<tr>
<td>Percentage of households using the group’s microbial fertilizer (%)</td>
<td>0</td>
<td>28</td>
<td>80</td>
</tr>
<tr>
<td>Percentage of packed paddy with assessment note (%)</td>
<td>100</td>
<td>0**</td>
<td>100</td>
</tr>
<tr>
<td>Collective processing and distribution (Percent of members selling to the association)</td>
<td>70</td>
<td>70</td>
<td>50***</td>
</tr>
</tbody>
</table>

Source: Released by the association’s leading board

* In 2008, the farmers used the seeds provided by the project in 2007
** In 2007, the marketing group did not organize the control
*** In 2008, many farmers kept rice to wait for higher price due to bad harvest.
successful result in land allocation showed the great interest of the local authority regarding the activities of the Association.

Packaging at food processing park: The products are packed with the association’s package, containing information relating to product’s characteristics and contact persons. Some information on the package are: Association’s name, name of product, production address, production in tradition protocol, certified on food hygiene standard.

Capacity building for Association and members

Capacity building for the board of leaders and members of the Association through regular training in many fields include: (1) Training three farmers with good skills to become the association’s technicians who are able to produce and restore Hoa vang rice variety in the future. (2) Training on technical protocols to produce commodity rice for members. (3) Training on improving capacity for the association leaders and inspectors in terms of planning, meeting chairing, monitoring the association’s activities. (4) Training on recording of financial books to help the leaders and accountants be able to take notes and follow the financial transactions. (5) Training on internal control to help members follow the technical protocols to ensure the quality External quality monitor.

In order to bring the Hoa vang sticky rice product to the consumers, the association is implementing the external monitoring activities besides the internal quality control system.

The national fertilizer and seed experiment centre helped the association to check the seeding rice on the fields. The key criteria used are seed quality and level of seed uniformity. At the same time, the centre also conducts some lab analysis on quality criteria such as seed uniformity, seed vitality and rate of seed sprouting.

Before packaging, the association’s marketing group sends the rice samples for analyzing in Hai Duong Department of Health. If the samples are qualified according to the regulation of Ministry of Health regarding quality and hygiene, the certificate on food hygiene will be issued for the product by the provincial health centre.

In addition, currently, the association is in the process of improving documentation to submit to the Intellectual Property Department at the Ministry of Science and Technology to be awarded collective mark certificate “Kinh Mon Hoa vang sticky rice” for the product of Hoa vang sticky rice of the association. When the product is certificated, the problem of fake commodity in the market will be solved. According to the plan, in March of 2011, the Hoa vang sticky rice product will get the collective mark protection “Kinh Mon Hoa vang sticky rice”, supported financially by provincial authority.

Product commercialization process

The association has implemented some commercial promotion activities so that the product of Hoa vang sticky rice can approach the market:

Stakeholder workshop: to introduce the product to the commercial agents, the association organized a stakeholder workshop with the attendance of the representative of supermarkets, companies, and wholesaling/retailing agents, woman consumer club (4 supermarkets, 5 food companies, 7 agents). This meeting showed that the stakeholders have a rather high demand for this product (about 10-30 tons/ supermarket/year). And they are willing to pay for a higher price of Hoa vang sticky rice in comparison with the same type of products from other suppliers.

Annual knowledge fairs: The association participated in the yearly spring agriculture product exhibition. In March 2010, with the support of the project and ‘Big C’ supermarket, the association organized a tasting event in Big C Supermarket in Hanoi and Big C supermarket in Hai Phong for 6 days. This activity shows that consumers highly appreciate the quality of the association’s product (97% of 222 consumers in Hanoi and 100% of 74 consumers in Hai Phong gave good comment about the product quality).

Other type of advertisement: information about the product of Hoa vang sticky rice is also promoted through posters, leaflets and means of communication such as radio, newspapers, television and the internet.

Up to now, the association has reached an agreement with 9 wholesale/retailer agents in Ha Noi, Hai Duong, Ho Chi Minh city, two wine companies, and two supermarkets in Ha Noi (Fivimart và Hapromart) with the consumption quantity of 25 tons of paddy each year.

Economic impact

To the association members: Joining in the association, the producers increased their income through improving and increasing their productivity (300kg/ha) and the association purchase of a price per kg of paddy of 500VND higher in comparison.
with the price in the free market. The interest of the association’s members are 39% higher than the ones outside the association in 2008 (Table 10).

In 2009, the 253 members CoDI-supported producer association reaps VND 500-700 per kg of sticky rice, which is higher than the produce of other producers.

To the association: The activities of the Association in sticky rice value chain have created an increasing commercial profit for all of their member (Fig. 2).

In 2009, with 20 ha of sticky rice the Association has contribute to income raising a amount of 106,900,000VND for all of their members.

The successful story of the Association has contributed to the change of agricultural development strategy of Kinh mon district with the recognition of the role of local varieties such as Hoa vang sticky rice as orientation for other communes in the district. This activity also promotes the changed vision for other local cultures such as garlic and onion as main culture for a diversification strategy. The Association has contributed positively to territory development of Kinh mon district.

Lesson learned from activities

To help poor farmers link with the market, it is very important in the first place to help farmers select and identify the products to be developed, with a potential to increase the value through an improvement in the quality/safety, especially for farmers in remote areas. This will really contribute to stabilize and increase the household’s income.

The market for the products should be identified and studied from the beginning before intervention in order to formulate a support strategy. Besides establishing new chains for quality products, to improve the current chains and diversify the product marketing outlets in order to avoid dependence on the retailers. Focus on farmers’ priority crops and improving existing market chains (sticky rice, pomelo) helps to maintain farmer interest.

It is also important to identify the organization that would best fit to facilitate the farmers’

<table>
<thead>
<tr>
<th>Table 10. Production efficiency between the household inside and outside the association per ha</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2008</strong></td>
</tr>
<tr>
<td>Total of expenditure (VND/ha)</td>
</tr>
<tr>
<td>Seeds</td>
</tr>
<tr>
<td>Fertilizers</td>
</tr>
<tr>
<td>Plant protection drugs</td>
</tr>
<tr>
<td>Other expenditures</td>
</tr>
<tr>
<td>Total of gross income (VND/ha)</td>
</tr>
<tr>
<td>Profit (VND/ha)</td>
</tr>
<tr>
<td>Socio-economic impact</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Source: survey data of 50 households, in which, 30 households inside and 20 households outside the association, winter crop 2007

Fig. 6. Commercial profits created by the Association for their members during 2006-2009
activities. The selection of the organization should be based on the real conditions of farmers and the chain. Usually it should start from the lower level, training farmers and helping them to gradually adapt the coordination and organization of collective activities.

The production protocol is the basis for the linking process, thus, it is important to recognize the factors in implementing the common protocol. It is required to distinguish between those compulsory techniques which will ensure the expected quality and which farmers must be helped to follow, and other guiding factors which are less important.

Improving farmers’ knowledge and capacity in cooperative economy and farmers’ organization is a duty and should be undertaken right from the very start. It is recommended to choose carefully the priority training topics, in order to have high efficiency and to continue with training and mentoring.

Conclusion of case study

The activities of the association has achieved initial results and contributed to improving the efficiency of rice cultivation/ha, increased the farmers’ income and allowing local agriculture to develop sustainably, efficiently and diversified at the same time. It is thus concluded that the CoDI approach of supporting underused crops can contribute to the development strategy of a region.

The association is developing its strength in supporting farmers to produce the required product based on market demand. This type of production requires the supply of input services and the establishment of new quality chains to meet the market needs. Quality Hoa vang sticky rice has now entered the city market and has triggered increased demand for this quality product.

Innovative case study 2: H’mong beef system in Cao Bang, Northern mountain in Vietnam

In Vietnam, cattle production is mainly concentrated in mountainous areas due to available favorable conditions including climate, pasture, feeding sources, indigenous races and traditional production practices by local ethnic groups. Wholesale market has been developed for a long time in those areas.

Cao Bang is one of these mountainous areas near the Vietnam-China border, being the living place of different ethnic minority groups mainly the Tay, Nung, Dao, H’Mong, Lolo, San Chi, Hoa and Kinh. Among them, the H’Mong ethnic group is known for having the best cattle breeding experience.

In Cao Bang, the two main cattle breeds are the Yellow and H’mong breeds. The total herd in Cao Bang has increased by 18 060 heads within five years reaching 129.48 in 2007. In this province; three main production systems are implemented: the multiple-purpose systems of Tay and Nung farmers in low-land areas (2 heads/household); the multiple-purpose systems of H’Mong and Dao farmers in the highlands (4-6 heads/household); and the fattening systems of H’Mong people in highland areas (around 5 heads/household/cycle of three months). Among these ethnic groups, the H’Mong is among the poorest. Most of them rely on cattle production (representing 60% of total income). Therefore, improving cattle production and marketing play an important role in ensuring livelihood (Tuan et al., 2009).

H’mong cattle are raised in a cowshed with separated wood-flooring. This is helpful to ensure proper hygiene. The main feeds provided are natural grass, elephant grass, and ground corn cooked as porridge. H’mong beef is bulky and matured cattle is expected to reach a weight of 400 kg or more, with good appearance and tender meat. Almost all H’mong people do their beef farming by keeping the cattle in the cowshed and feeding them with grass. As H’mong people usually live in mountainous areas, they generally sell their cattle locally, on live cattle markets located at an average distance of 10 km.

Most of the products are sold on farm or at the local markets, where a price fluctuation is managed by Chinese dealers8. As the cattle are valued by “eye-measurement”, much more experience belongs to the dealers/ speculators, and therefore the breeders tend to suffer disadvantages.

Some projects are implemented in this province to foster production (e.g. genetic improvement, grass cultivation) but not attention is paid to the small-scale husbandry farmers’ market access. The farmers lack information which could be shared in groups, e.g. information on pricing, sources of breeds, experience in breeding and fattening, etc., especially in the context of increasing demand of high quality beef in potential markets. The consumers of Hanoi are willing to pay a premium price of 10% if the quality is suitable (fresh, tender,
soft, red) and if the beef safety is guaranteed. More and more Vietnamese people tend to purchase beef, especially after the occurrence of bird flu and swine flu. Supermarkets like Metro, BigC and Hapromark need to be provided with 3-5 tons/month of good quality (rump steak, lean, muscle with high fat) with frequent supply by professional slaughter-houses which deliver certificates of origin and food safety control (Moustier et al., 2009).

In that context, the Superchain project (2007-2009) was implemented in Cao Bang province aiming at creating a high quality chain of Hmong beef to meet demand of potential market through institutional enhancements in which both vertical and horizontal relationships are concerned.

Characteristics of Cao Bang beef chain

Organization of beef supply chain in Cao Bang

Farmers sell their products through four different channels (see Fig. 7):

Channel 1. Cattle are sold to small local collectors\(^9\), then to big collectors and to wholesale markets. This channel accounts for 80% of beef sold from the surveyed communes.

Channel 2. Cattle are sold directly to big local collectors\(^10\) which mainly are those who stay close to big wholesale markets and those who will do the fattening. This accounts for 5%.

Channel 3. Cattle are sold directly to big collectors outside the province\(^11\) at wholesale markets. This accounts for 10%. Collectors from other provinces usually have close business relations with the local ones; most people in the area know them thanks to their long-term business.

Channel 4. Cattle are sold to local slaughter-houses and local people. This accounts for 5%. This channel is small because of low beef consumption in Cao Bang. On average, 20 cattle of all kinds are slaughtered everyday, a Hmong which, 6-10 heads/day for the market of Cao Bang township, 5-7 heads/day for Ma Phuc pass, and the rest for the markets of other towns within the province.

---

\(^9\)Small collectors are those who buy 5-10 heads/month (with the working capital of < 10 million VND)

\(^10\)Big local collectors are those who buy 50-60 heads/month (with big capital of > 50 million VND)

\(^11\)Wholesalers are those who buy over 100 heads/month (with working capital of > 200 million VND); they come from Hanoi, Thai Nguyen, etc.
Note - the figures correspond to the percentages of quantities sold to different buyers

Small collectors sell beef in three different channels:
Channel 1: Selling to the big collectors outside the province. It is the main channel accounting for 70% of total products. Small collectors and big collectors outside provinces are closely linked together.
Channel 2: Selling to the big local collectors, accounting for 20%.
Channel 3: 10% of the products being sold to slaughterhouses in the province.

The big provincial collectors sell the products to big collectors outside the province. The big collectors outside the province sell 60% of the products to slaughterhouses in Hanoi and 40% to other provinces.

From the slaughter-houses in Hanoi, beef is sold through three different channels:
Channel 1. Beef is sold to the dealers at the slaughter-houses. The big dealers then sell beef to the retailers at wholesale markets, to restaurants, hotels and supermarkets. This channel accounts for up to 80%.
Channel 2. Beef is sold under contractual agreements with supermarkets, mainly by slaughter-houses at Mai Dong (which have legal personality and eligible procedures in supplying directly to the supermarkets). This channel accounts for only 15%.
Channel 3. Beef is sold directly to restaurants and hotels accounts for 5%.

From the big dealers, 70% of the beef is sold to the retailers and vendors. These people then distribute to retail markets within Hanoi. 10% of the beef is sold to supermarkets without contracts while 20% is distributed to restaurants and hotels under orders.

According to the slaughter-houses at Mai Dong, Dong Anh - Hanoi, and to vendors of BigC and Metro, beef supply in Hanoi includes beef from both local and international suppliers. Local suppliers are from Cao Bang, Bac Kan, Ha Giang, Nghe An and Thanh Hoa provinces. Beef from Cao Bang accounts for 40% of the local supply. Half of what is declared as Cao Bang beef by slaughterhouses actually originates from China. Beef imported from Argentina, Australia, Brazil, the US, etc. accounts for about 20% of the sales in supermarkets and is mainly in the form of big blocks of 5-10 kg/block. Imported beef is 2-4 times more expensive than local beef of similar kinds (i.e. rump steak, shoulder cut, or lean meat), e.g. fresh local beef at BigC is sold at VND 89,000/kg while frozen beef imported from Australia is sold at VND 399,000/kg (according to surveys made with restaurants in February 2008).

**Beef collection system at wholesale markets in Cao Bang**

There are 7 big wholesale markets where 50-150 heads are sold every market day. In Ha Quang District in particular, there are 4 markets of both small and big sizes, i.e., Na Giang, Tong Cot, Nam Nhung and Na Ru. Cao Bang city is 50 km away from the project area with rocky mountainous path.

**Characteristics of beef quality of Cao Bang**

Currently, Cao Bang beef is categorized into two breeds, i.e. Yellow and H’mong. Yellow cattleen represent 70% of the total herds, H’mong cattle 20% and the other 10% is cross-bred. Their characteristics are presented below.

**Yellow:**
Small body (180 - 250kg/head); low percentage of lean meat < 35%, mainly raised by Tay, Dao and Nung ethnic groups.

Beef quality: tough, bright red, with a little meat loss due to too much exercise by climbing mountains. Main feed is natural hay, forest leaves, and a small amount of starch feed.

**H’mong:**
It has a big body, good appearance, heavily muscled and weighs up to 450 – 550 kg. Percent of lean meat is over 40%.

**Quality:** bright red, fragrant, tender, high rate of scattered fat, smooth meat, little water loss when cooking. It is mainly raised in custody as a long time indigenous breed. Main feed is elephant grass, natural grass, forest leaves along with ground corn, rice bran, a little salt and clean water.

H’mong beef is sold at 2.5% higher price per kilo after slaughtering, compared to yellow-cattle origin beef (1000 -2000 dong per kilo of beef after slaughtering)

Cao Bang beef and Chinese beef are different in several aspects. The biggest difference is the

---

12 This means among 100 oxen from Cao Bang to Hanoi, there is only 50 ones are raised by Cao Bang farmers, the rest is collected by small collectors from China, according to the surveys made in Aug 2007 - Malica/IFAD
ratio of lean meat, the tenderness and the color of the meat after slaughtering:

**Chinese cattle:**

Cattle from China are classified into two groups:
- The first is called “border cattle”. These are raised by Chinese ethnic groups. Their quality is quite similar to Cao Bang Yellow cattle. Chinese people at communes near the border are often of Tay and Nung ethnic groups. Buying and selling is convenient because of their same language. When selling cattle it is required to have a certificate of origin issued by the Commune People Committee. Small local collectors who buy cattle from China usually raise them for 1-2 weeks before selling them at the markets so that a certificate of origin from the commune people’s committee is granted.
- The second group is fed in large farms or by professional cattle raisers. Their appearance is good, they are chubby, with smooth fur and leather, and a weight of over 400 kg/head. Only well-experienced cattle purchasers can recognize their origin. A Cattle of this type often brings a 6.25%-12.5% lower price than an cattle of other origins.

According to the collectors and slaughter men in the Ma Phuc mountain pass area, the color of Chinese beef turns dark brown in 3-5 hours after slaughtering and looses tenderness due to water loss. Some slaughter men and collectors say that when being cooked, the smell is not as attractive as Vietnamese beef because the animals are fattened with hormones and industrial food.

At present, there has been no in-depth study about beef safety in markets, especially in terms of the hormone and anti-biotic residue in beef.

**Results from group establishment**

After nearly two years of project implementation, the research team has provided advice to establish four groups with the participation of 103 households. On average, each household comprises five to seven persons. Over 60% of the households of the groups are poor. In order to establish the groups, initially, officers who are the veterinarians of the commune were trained with group establishment techniques after which implementation was made in the field. After the development of the first group, who have experiences in organizing and consulting, the research team continued with another three groups.

The groups are provided with specific advice in respective activities for respective households. Each household developed its own production and commercial plan. Each group then made a consolidation for the group plans. The plans of respective groups revealed the timing and location of cattle selling. Based on such information, the leaders of the group (three people in the group in charge of marketing, including leader and vice leader) interacted with the collectors.

The establishment process and characteristics of the 4 groups are shown in Table 11:

Each group implemented its plans. A review for lessons learnt and further plan development was made after 6 to 12 months (see Table 12).

On average, each household sold two cattles within 12 months, which is much quicker than before.

The group farmers are able to make plans and implement them with the consultation and monitoring of the relevant experts and the local veterinarian of the commune and district. Poor households participating in grass cultivation and feed fermentation have good awareness and responsibility in experience sharing, i.e. transferring of grass seeds to other households. Besides, the group households are very active in vaccination.

**Development of production protocol for H’mong beef in Cao Bang**

**Preparation of production protocol**

The application of a common production protocol by the households helps to ensure the good quality of the products. H’mong people have a long tradition in cattle fattening. They always found the techniques suitable to local natural conditions, in line with their economic and labor capacity. In the case of cattle fattening in Cao Bang, together with the farmers of the interest groups, the research team has standardized respective steps in their cattle fattening process, making them most understandable and applicable for mountainous areas and with high economic effects. The production protocol comprises ten major items. It is brief and easy to understand. Each item is attached with specific notes and explanations according to actions conducted, including:

1. H’mong cattle
2. How to choose cattle for fattening
3. Cattle selection technique for fattening
4. Preparation before fattening
5. Fattening period
Table 11. Information on the H’mong beef farming groups

<table>
<thead>
<tr>
<th>Timing and location</th>
<th>H’mong beef farming group</th>
<th>Group characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/07 – 6/2008</td>
<td>Lung Hoai</td>
<td>25 households; size 3.2 heads/household; 80% H’mong + 20% Nung people 65% poor households</td>
</tr>
<tr>
<td>Ha Thon Commune</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rang Khoen</td>
<td>25 households, Size:3.7 heads/household; 100% H’mong 60% poor households</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lung Ran</td>
<td>26 households, 100% H’mong Size: 2.9 heads/household; 63% poor households</td>
</tr>
<tr>
<td>07 – 12/2008</td>
<td>Thin Tang</td>
<td>27 households, 100% Nung Size: 2.6 heads/household; 64% poor households</td>
</tr>
<tr>
<td>Ma Ba Commune</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Consolidation of data- Superchain (Malica/IFAD) - 12/2008

Table 12. Results of operation of a high quality beef farming group in Cao Bang Province – 2008

<table>
<thead>
<tr>
<th>No.</th>
<th>Activities</th>
<th>Households involved</th>
<th>Unit</th>
<th>Planned (quantity)</th>
<th>Actual (quantity)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vaccination</td>
<td>25</td>
<td>Head</td>
<td>80</td>
<td>80</td>
<td>Achieved 100%</td>
</tr>
<tr>
<td>2</td>
<td>Cowshed building</td>
<td>2</td>
<td>Coop</td>
<td>2</td>
<td>1</td>
<td>Achieved 50%</td>
</tr>
<tr>
<td>3</td>
<td>VA-06 grass cultivation</td>
<td>5</td>
<td>m2</td>
<td>1200</td>
<td>3000</td>
<td>Achieved 250%</td>
</tr>
<tr>
<td>4</td>
<td>Cattle buying</td>
<td>25</td>
<td>Head</td>
<td>50</td>
<td>42</td>
<td>Achieved 84%</td>
</tr>
<tr>
<td>5</td>
<td>Cattle selling</td>
<td>25</td>
<td>Head</td>
<td>50</td>
<td>52</td>
<td>Over achieved</td>
</tr>
<tr>
<td>6</td>
<td>Fund contribution</td>
<td>25</td>
<td>VND/year</td>
<td>250.000</td>
<td>250.000</td>
<td>Achieved 100%</td>
</tr>
<tr>
<td>7</td>
<td>Group meeting</td>
<td>25</td>
<td>Time/year</td>
<td>12</td>
<td>6</td>
<td>Achieved 50%</td>
</tr>
<tr>
<td>8</td>
<td>Feed fermentation</td>
<td>2</td>
<td>Trunk</td>
<td>2</td>
<td>2</td>
<td>Achieved 100%</td>
</tr>
</tbody>
</table>

Source: Consolidation of data- Superchain/Malica/IFAD - 12/2008

6. Food for fattening
7. Rearing during fattening period (including health issues)
8. Cowshed conditions
9. Quality assessment before selling
10. Estimation of economic gain from cattle fattening techniques

Training on production protocol

After 6 months of implementation, 100% of the group households were trained and practiced the introduced production protocol. The assessment of economic effects requires further monitoring but preliminary results will be given at this end of this report.

With documents developed by the research team of Malica and edited by relevant experts (of CIRAD and CASRAD), the research team has conducted several training workshops and disseminated material to over 100 households of the 4 interest groups. 10 courses were organized with different themes, i.e.:
- Training on planning methodology: 4 two-day training courses with the participation of 25-27 attendees per course at the Cultural house of the village (2 in Oct 2007, 2 in Mar 2008)
- Training on cattle cold prevention: Two one-day training courses with the participation of 25 attendees per course at the village and certain group households (Jan 2008)
- Training on VA-06 grass cultivation and sweet jumbo cultivation: 2 two-day training courses with the participation of 25 attendees per course at the village, at the field and gardens of the participating households (Apr 2008)
- Training on cattle fattening production protocol according to H’mong approach: 2 two-day training courses with the participation of 25 attendees (Nov 2008).

**Linking the interest groups with different commercial actors**

**Workshops and promotion events**

The main objective is to establish a supply chain of H’mong beef from the interest groups to the supermarkets and restaurants in Hanoi. Therefore, the activity in linking the producers to different commercial actors such as slaughterhouses, supermarkets and restaurants is very critical. For the initial relation, the research team organized four workshops with the participation of different actors in the beef value chain (Table 13). However, there was limited participation of the slaughterhouses in Hanoi and the linking with them is difficult. The main reason relates to their reluctance in getting involved in a formal supply chain which they have never experienced and where documents are required. The difficulty of linking with the slaughterhouses in Hanoi required a change of strategy in the selection of slaughterhouses as partners. In March 2009, the research team changed to work with a slaughterhouse in Cao Bang (Mr. Ngan). This contact has resulted in positive results. The slaughterhouse in Cao Bang (Mr. Ngan), together with the research team, successfully conducted the workshop for product introduction and tasting of H’mong Cao Bang beef at BigC, Hanoi on 25/04/2009. During this workshop, two cattle from the project area were slaughtered by Mr. Ngan, brought in cattle with ice by lorries to Hanoi. Big C butchers dealt with the cutting and packaging of the meat. Then the meat was cooked by staff of Big C restaurants and proposed to consumers (who could also buy it fresh, at the price of 170,000 VND/kilo of fillet, 150,000 VND/kilo of rump meat).

The tasting event has opened a new perspective for H’mong beef value chain. It was highly appreciated for its practical aspects. The key actor is the distributor (the Director of BigC) who had high appreciation on the quality of the beef and proposed that H’mong beef should be distributed during the weekend at Big C if the quantities are not sufficient for daily delivery. The company SCS is also interested in the distribution of H’mong beef. It would like to be the only distributor for H’mong beef. Cao Bang slaughterhouse is willing to cooperate with the project whilst DBRP project (loan project funded by IFAD) unanimously agreed to develop a high quality supply chain for Cao Bang H’mong beef. The consumers in Hanoi also had great appreciation on the quality of H’mong beef. Out of 120 consumers who filled out the evaluation form, 90% appraised the higher tenderness and

<table>
<thead>
<tr>
<th>Table 13. General information about the workshops</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Workshop</strong></td>
</tr>
<tr>
<td>1st time</td>
</tr>
<tr>
<td>2nd time</td>
</tr>
<tr>
<td>3rd time</td>
</tr>
<tr>
<td>4th time</td>
</tr>
</tbody>
</table>

Source: Consolidation of information from Superchain/Malica/IFAD - 05/2009
the good taste of H'mong beef in comparison with other local ones. The trial selling price of 13% higher than the price set at BigC (for local beef) was accepted by the consumers13. Currently, the four interest groups can supply 100kg/week. This volume can only meet 20% of Big C purchase of domestic beef.

**Promotion material**

A certificate of origin has been designed for tracing the place of origin of beef, it is filled by the veterinary services of the communes. Besides, a label of H’mong beef has been designed to be displayed in the final meat product. A video and a poster have been produced to explain the specific characteristics of H’mong beef.

**Actual and expected economic effect**

It is difficult to calculate the economic effects of the activities for over 100 households. A real case can be illustrated by Mr. Luong Van Sinh’s household who belongs to a beef farming group of Rang Khoen, Ha Thon commune, Ha Quang, and further information on some households which are not involved in the farming groups (outside of the high quality chain) are shown to demonstrate the effects from activities conducted (Table 14).

**Explanation of calculating income per day:**

- **Before joining the group:**
  (1) With the scale of 2-4 cattle per household, each household needs 4-6 hours per day (cutting grass, preparing porridge, cleaning); as working day is calculated as 8 hours per day, so each household spends 15-22.5 days for cattle raising per month. Before joining the group Sinh’s household raised 2 animals per year, selling and buying new cattle after every 6 months. ---> Total working days: 15 days * 6 months x 2 animals = 180 days
  (2) From table 4 we can see that the surplus profit after one year raising cattle of Sinh’s household is 0.6 mill dong per year (=600,000VND per year)
  From (1) & (2), we had the income of one day before joining in group:
  Income/working day = 600,000 dong/180 working day = 3.333 dong/working day

- **After joining the group (access to high quality chain)**
  (1) Time for cattle raising reduced to 3 months per animal – thanks to training on production protocol; ---> total working days for cattle raising per year: 15 days/month x 12 months = 180 days
  (2) During 2008-2009, Sinh’s household bought and sold 4 cattle, total quantity of beef is 400 kilos, 3 out of 4 sold at the market price of 90 dong per kilo; 1 sold at tasting event at 97,000 dong per kilo
  (3) Total income of Sinh’s household from 4/2008-4/2009 : 3 animal x 100 kg/animal x 90,000d/kg + 1 animal x 100 kg x 97,000 d/kg = 36,700,000 VND; Total costs of buying cattle for fattening: 35,500,000 VND. Additional income from 4 cattle per year: 1.9 mill
  --> From (1), (2) and (3), income per working day of Sinh’s household: 1,900,000 dong/180 working day = 10,555 dong

- **Non member: calculated as in the part 1**

The most important impact of the activities is the higher frequency of cattle sold, i.e. from 2 heads/year to 4 heads/year. This is the reason of income increase. In addition, when getting involved into the high quality chain, each kilo of beef of live weight receives a higher price, i.e. VND 7,000 (An cattle of 100 kg shall get 0.7 million VND higher price than that in a common market.)

We estimated the number of groups required to answer the demand of the potential customers identified so far (supermarkets, hotels, distribution companies), i.e., 40 groups of 25 households, that is ten times more than the present situation. It is impossible to have mass development of groups but the development should be based on the market demands and the good governance of production groups. Together with the development of distribution network in Hanoi, it is necessary to develop groups and disseminate farming production protocol plus quality control system to the households of the groups. Hygiene protocols for slaughtering and transportation of products from Cao Bang to Hanoi still need to be developed.

**Marketing activities**

Since the project Superchain ended, two companies
and a small-scale slaughterhouse have invested in the H’mong beef value chain in Cao Bang. A local construction company will invest in constructing a slaughter park to ensure standards, with a frozen storage, a waste treatment park and frozen trucks for transporting. At the moment, the company has cleared the ground and is hiring to design the slaughter. They estimate to complete the construction in December of 2010. The organic food Distribution company Ecomark is currently connecting to the small slaughterhouse in Cao Bang to distribute H’mong beef in Hanoi market, but the quantity of beef is still very limited (50 kg/time), once in two weeks. Ecomark Company has a door-to-door delivery network whereby customers can order via phone and e-mail.

**CONCLUSION**

**Production**

Two groups have been established with effective operation and another two have been recently developed (103 households). These groups are involved in joint production protocols for cattle of

Table 14. Comparing household’s economic benefits when joining the high quality chains

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutting grass in winter (working day)</td>
<td>90</td>
<td>30</td>
<td>90</td>
</tr>
<tr>
<td>Time for fattening (month/animal)</td>
<td>6</td>
<td>3</td>
<td>3-6</td>
</tr>
<tr>
<td>Number of cattle (animal/year)</td>
<td>2</td>
<td>4</td>
<td>2-4</td>
</tr>
<tr>
<td>Total quantity (visual measurement/kg)</td>
<td>200</td>
<td>400</td>
<td>200-400</td>
</tr>
<tr>
<td>Selling price (VND/1kilo - visual measurement)</td>
<td>52,000</td>
<td>03 cattle sold at 90,000 dong per kilo - 01 cattle sold at 97,000 dong per kilo</td>
<td>90,000 (-7.2%)</td>
</tr>
<tr>
<td>Total income according to beef quantity (mill)</td>
<td>10.4</td>
<td>36.7</td>
<td>18 - 36</td>
</tr>
<tr>
<td>Price of buying cattle</td>
<td>9.8</td>
<td>34.8</td>
<td>17.4 – 34.8</td>
</tr>
<tr>
<td>Surplus profit (mill/household)</td>
<td>0.6</td>
<td>1.9</td>
<td>0.6-1.2</td>
</tr>
<tr>
<td>Income from cattle fattening raising (VND/day)</td>
<td>3.333</td>
<td>10.555</td>
<td>3.333 - 6.666</td>
</tr>
</tbody>
</table>

Note: Mr. Sinh had money only enough to buy 1 cattle valuing less than 15 mill for fattening then re-selling

Table 15. H’mong beef supply capacity

<table>
<thead>
<tr>
<th>Supply capacity</th>
<th>Beef volume (ton/month)</th>
<th>Profits higher than selling to free market at the same time (mill)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nr. of households</td>
<td>Nr. of groups</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>4</td>
<td>0,4</td>
</tr>
<tr>
<td>1000</td>
<td>40</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Consolidation of results from Superchain/Malica - 4/2009
stable quality.

Success has been obtained with pilot cultivation of VA-06 grass in dry mountainous area with the possibility of multiplication to other mountainous areas in Cao Bang.

**Market linkages**
Great attention and support has been shown by BigC and SCS Food retail companies. But the linkage of remote cattle producers with slaughterhouses in Hanoi has not been successful. The cooperation with local processing infrastructure, such as the new slaughterhouse currently in construction Cao Bang, seems to be a key success factor to develop linkages with high-value markets.

**Capacity building and promotion materials**
A standardized production protocol in beef farming and fattening of the H’mong people has been produced. A label for H’mong beef has been designed, as well as a video and a poster on H’mong beef.

Yet, the development of the H’mong beef chain still faces difficulties:
No slaughterhouse with legal status (stamp, tax code), financial capacity, and clear hygiene protocol is yet found to connect with high quality chains. Therefore contracting with supermarkets and retail companies is not yet possible.

The negotiation on a quality premium is not going smoothly. The retailers -Big C and SCS Company- are not satisfied with the offered price (135,000 VND per kilo for type A beef delivered to Big C); SCS will only accept the price ranging from 125,000 – 130,000 VND per kilo for type A beef).

**A set of recommendations are listed below:**

**Production:**
- Developing the groups as the association of beef cattle raising (20 – 40 groups), for 1000 households to benefit and supply the identified outlets

**Marketing:**
- Supporting the identified slaughterhouse in Cao Bang to become the slaughtering cooperative (with legal status, equipments).
  Building “a formal collective brand” for H’mong beef based on farmers groups and ensuring a specific quality based on indigenous raising practices and a geographical identity, as partly analyzed and strengthened within the framework of Superchain project.
- Organizing transactions with contracts with customers in Hanoi
- Supporting the slaughterhouses and distribution companies of H’mong beef to research and enlarge the consumption market in big cities

**Capacity-building**
- Cooperating with Cao Bang livestock extension services to disseminate the cattle fattening protocol of H’mong people
- Training veterinary and extension staff on methods of setting up and working with groups
- Supporting slaughterhouses with standardized equipments to ensure a high quality end-product and market access, through the support of local governments to gain access to other sources of funding.

The local food system was the traditional system in Vietnam and contributes to food security at the local and household levels. The driven factor of local food system was domestic market. Facing new challenges of market integration and modernization rapid of food distribution system, the local food system in Vietnam meet some constraints of capacity of small farmer to access market with standard. There were some initiatives to develop the farmer organization and value chain of local product like Geographical indication (GI) or Collective brand. Finally, these initiatives open the way for more proactive public policy to promote the future local food systems in Vietnam:
- Organizing promotion of local products for local markets
- Opening new marketing channels for producers or producers’ organizations to be present on the urban markets, through producer shops or dedicated urban retailers
- Integrating agriculture in urban planning, during the elaboration of the mandatory Master plans to be elaborated by each Province, where not only production but local marketing and retail systems should be taken into account.
- The pluriactive mode of management of a very large number of production units in Vietnam has been effective, especially when it is combined with small areas production for the family and the markets.

**REFERENCES**
Hoang Xuan Truong, Dao The Anh, Paule Moustier, Le Viet Hung at Ha Quang District - Cao Bang Commune, Final report of Superchain project - 05/2009. Results from the pilot model of high quality beef farming group linking to high quality supply chains, supermarkets, restaurants and hotels, Hanoi, CASRAD.
Trinh Van Tuan et al., 2009, Scientific report on Diversification study of fattening cattle models in eco-regional areas and market access in Cao Bang and Ha Giang, ADB project.