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Capacity Building of Smallholder Livestock Farmers in Western Leyte, Philippines

by

Maria Fay Rola-Rubzen¹ and Fe M. Gabunada²

Abstract

Various approaches have been used to improve smallholder farmers' livelihood systems. One approach is to build farmer capacity with a view of improving their knowledge and skills. In Western Leyte, Philippines, researchers worked with farmers in improving farmers' knowledge base in technical and economic aspects of their farming system. With a focus on improving profits, farmers were equipped with a range of tools to enable them to improve their farming system and to assess possible changes in their system.

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Abstract

Various approaches have been used to improve smallholder farmers' livelihood systems. One approach is to build farmer capacity with a view of improving their knowledge and skills. In Western Leyte, Philippines, researchers worked with farmers in improving farmers' knowledge base in technical and economic aspects of their farming system. With a focus on improving profits, farmers were equipped with a range of tools to enable them to improve their farming system and to assess possible changes in their system.

1. Introduction

In recent years, capacity building has emerged as a major focus for development institutions. It has been increasingly recognised that in addition to productivity increases, technological developments, infrastructure and good economic policies, human resource development plays an important role in poverty alleviation (ADB 1991, World Bank 2001, World Bank 2002). Human resource development entails improving the capacity of people through improved education, better health and nutrition and skills enhancement.

For developing countries, improving the capacity of people, particularly the poor, is critical. This is because in most cases, the poor own very little resources and often rely on their own labour as their main source of income. Without the necessary education and the right skills, they will be unable to partake in economic opportunities that will enable them to climb out of poverty.

There is an increasing amount of literature demonstrating the importance of human resource development. For instance, studies have shown high rates of return to investments in education (Schultz 1961; Krueger 1968; Psacharopoulos 1985; Behrman, Deolalikar and Wolfe 1990; ADB 1991). Education and training raises productivity and enhances the capacity to earn.

In the context of the agricultural sector, enhancing the capacity of farmers will have a major impact in their ability to improve their livelihoods. Due to the declining rates of growth in agricultural productivity, there is impetus not only for increased investments in infrastructure and research and development, but also on building the capacity of farmers. Improving the skills and knowledge base of farmers, even beyond schooling, will increase their productivity, raising output, enhancing household incomes and reducing poverty.

In recognition of the importance of human resource development, governments and development institutions alike are putting emphasis on human resource development and capacity building. In the Philippines, projects are increasingly making capacity building integral to the project cycle (see for example, Iglesias 2001). This paper describes a project in the Philippines that aims to build the capacity of smallholder livestock farm households to improve their income and household welfare. The focus of the project is on smallholder pig and chicken production systems.

2. The project

Livestock plays an important role in many Filipino farm households. Integrating crop and livestock production is quite common in smallholder farms (Garcia *et al.* 1990). Livestock is an important source of secondary income and a source of protein for many farm households.

Generally, however, livestock production is normally considered a secondary enterprise in smallholder farms in the Philippines.

This project seeks to enhance the contribution of livestock within smallholder households in the Philippines. The project's mission is to enhance the well-being of smallholder families in Western Leyte by increasing the capacity of farmers to continuously improve their livestock systems. Specifically, the objectives of the project are to:

- Increase the capacity of participating farmers to improve the management, profitability and long-term sustainability of their livestock systems through continuous improvement in their creativity, decisions, processes, practices and performance; and,
- Improve the contribution of livestock, in a measurable and sustainable way, to the social and economic wellbeing of smallholder families in Western Leyte.

The project is located in two municipalities - Hindang and Baybay - in Western Leyte, Philippines. Western Leyte is one of the most depressed regions in the Philippines, with about 46 per cent living in poverty. Livestock is commonly raised by smallholder farm households in this region. The project sites include three villages each in Hindang and Baybay. In Hindang, the barrios include Hisra, Tagbibi and Ma-asin; while in Baybay, the villages include Gubang, Hipusngo and Kilim. The project was given the acronym LLIP, which stands for *Leyte Livestock Improvement Project*.

3. Project approach

Integral to the project is the participatory approach to research and development. Farmer participants worked together with Leyte State University research and development staff, Department of Agriculture technicians from the municipalities of Baybay and Hindang and Australian researchers and development specialists from Queensland Department of Primary Industries, University of Queensland, Curtin University of Technology and the University of Sydney.

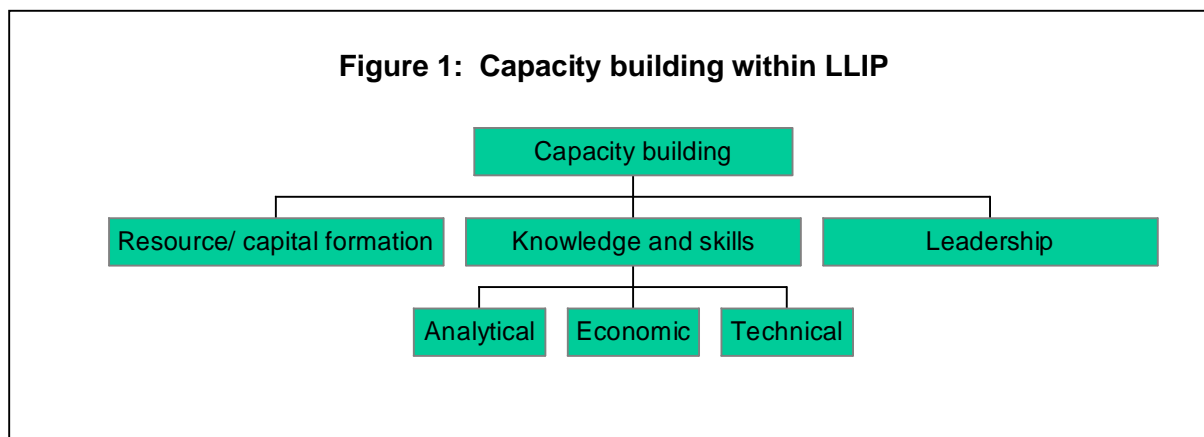
The project adopted the continuous improvement and innovation (CI&I) process (Clark and Timms 2000). The CI&I process involves a six-step cyclical process that starts with *situation analysis*. Under this step, a thorough analysis of the existing situation is conducted. The issues, problems, opportunities, constraints and needs are assessed. This is then followed by *impact analysis*. Under impact analysis, farmers consider what will make a real difference to their performance. The third step is *action-design*. Farmer participants prepare specific individual action plans, setting targets and key performance indicators. Farmers then move on to the fourth step – that of action implementation. Farmers then *assess performance* and reflect on activities conducted. They reflect on what made a difference. The final step is *creation and synthesis*, whereby new questions and ideas are generated. It is under this step that reflections on new opportunities for action and improvement are generated, leading to a new round of the CI&I cycle.

4. Building the capacities of farmers

During the needs assessment, farmers who participated in the project identified several problems and needs in their livestock production systems. Some problems/ constraints farmers identified included poor market linkages, lack of capital for livestock production and other household income-generating activities, as well as limited skills in determining the profitability, efficiency, and sustainability of alternative options or opportunities in livestock production. There were some recurrent issues that emerged among farmers in the needs

assessment and in subsequent steps. For instance, the need for capital or credit was often mentioned by farmers as a constraining factor in improving their livestock production. There was also an expressed need for skill enhancement and training on technical aspects of chicken and livestock production and marketing.

The needs assessment was quite useful in identifying areas and avenues for capacity building. The areas for capacity building identified by farmer participants can be generally classified into resource/ capital formation and knowledge and skills enhancement. In addition, it was thought that building the leadership skills of farmers would enhance the long-term sustainability of the project's impacts. Hence, capacity building within the project can be represented as follows (Figure 1):



Under knowledge and skills, there were three further areas for farmer capacity building. These included analytical skills, economic skills and technical skills enhancement. Each of these areas are discussed below:

4.1 Resource/ capital formation

Several farmers expressed lack of capital and information on alternative sources of credit as an impediment to improving their livestock production system. Raising livestock involves money to establish new infrastructures or improve existing infrastructures, purchase inputs and even market the products, if one is to bring the product to alternative markets. Farmers reasoned that without capital, they would not be able to improve their livestock production systems.

SWOT analysis was conducted to focus on the problem of lack of capital (Rola-Rubzen, Gabunada and Mesorado 2002a). Project staff facilitated the analysis by farmers of the issues on capital for pig production. Activities that required capital were identified and then ranked in terms of the amount of money required. Farmers likewise identified alternative sources of capital. The advantages and disadvantages for each option were discussed. A decision assessment framework was used in ranking opportunities that would make a difference in their current practices. Feeds and feed supplementation were identified to require the most capital (Gabunada 2002).

A number of farmers identified establishment of a cooperative as a means of dealing with their capitalisation problem. Some farmers believed that by putting up a cooperative, they

would cut costs of inputs. Likewise, they felt that by establishing a cooperative, they would be better able to control the pricing and maximise marketing.

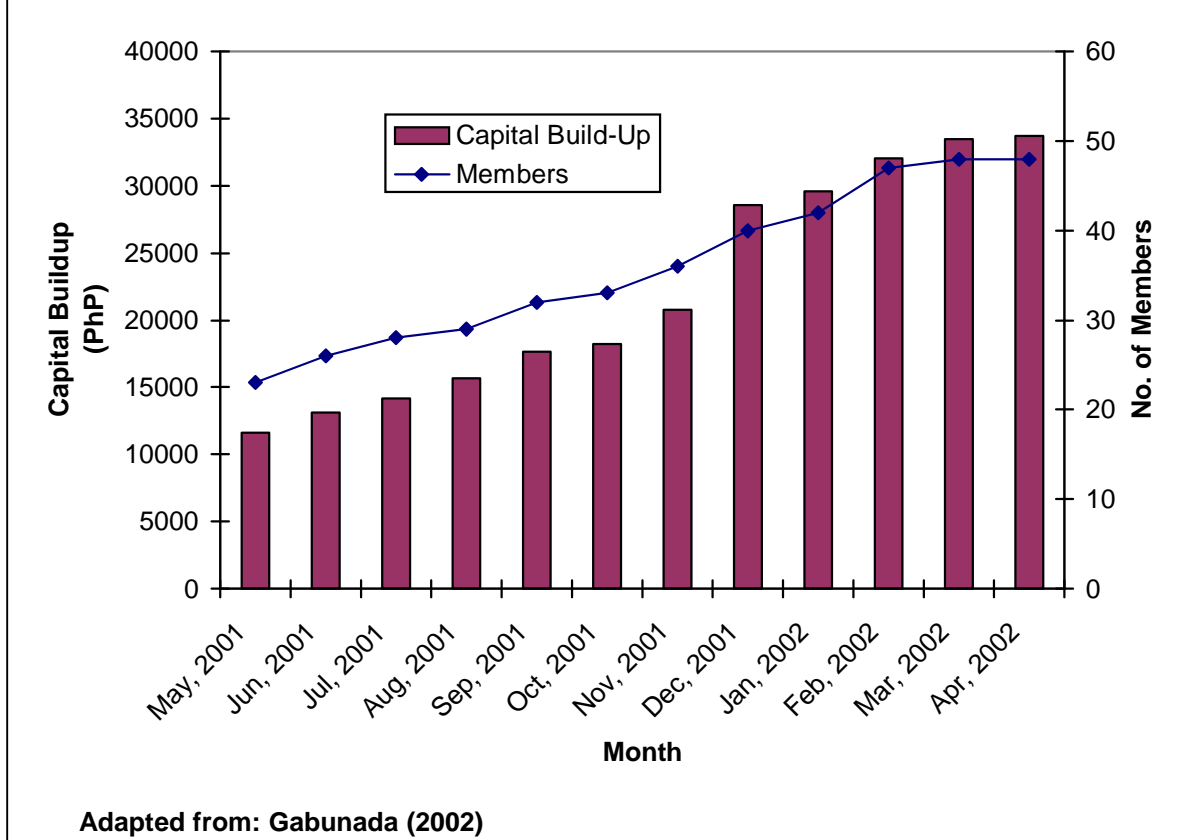
Among the six farmer teams, the HISRA team was the first to act on their prioritised opportunity in response to their need for capital for feeds and biologics. A plan was developed to put up an Agri-Vet store (intended at first to serve as an input supply store and later to progress to an output supply store). To support their venture, HISRA farmers identified some critical factors in putting up the store. This included the amount of capital, suppliers of feeds and veterinary supplies, management of the store, location/site of the store, record-keeping/bookkeeping skills, and cooperation among members. To provide capital for the input supply store, the farmers agreed to pool their savings (minimum of ₱500.00 or approximately A\$20 per member). This store will provide services that directly support the farmers' pig production activities (Gabunada 2002).

HISRA was able to negotiate a deal with a particular supplier whereby HISRA is given feeds on credit for a month and veterinary supplies on consignment basis. This arrangement allowed the Agri-Vet store to sell input supplies to members of the association on credit, provided that members pay their debts regularly. Individual credit limit was set to the amount of a member's capital shares only. This provided safeguards against bad debts. This credit arrangement helped farmers deal with their capital constraint, as feeds were the main cash expenditure of farmers.

To support farmers and build their capacity to manage the store, project staff conducted training on simple accounting for the officers of the association and the Local Government Unit (LGU) representative. This training enhanced knowledge and skills on bookkeeping, especially of the storekeeper, treasurer and LGU representative. As a result, the storekeeper became equipped with the necessary record keeping skills and had diligently recorded daily business transactions. Meanwhile, the LGU representative (who is a Soil Scientist by training) now knows about recording and posting procedures as well as preparing financial statements (income statement and balance sheet). As the LGU representative is in constant contact with the members of the association, she can easily train the farmers on these aspects in lieu of the project specialist.

The financial statements served as guides for farmers in improving the operation of their store. During meetings, financial statements were presented and discussed with the members of the association. These documents provided a basis for decision-making of farmers for the improvement of business operations. The Agri-Vet store in Hindang has supported the swine production activities especially of the members of the LLIP farmer team. This has positively addressed farmers' problems on limited capital for feeds and veterinary supplies because they can now avail of better quality feeds that in turn positively affects their production performance. Because of the success of the Agri-Vet store, capital formation has been on the rise and so has cooperative membership (Figure 2).

Figure 2 Number of members and capital build-up of the Hindang Swine Raisers Cooperative (HISRAC)



As Gabunada (2002) pointed out, the input supply store serves not only the farmer-members but also other farmers in the locality. Both the members and non-members had increased their purchases from the store. Moreover, the store is operating profitably. It has generated a total net profit amounting to ₱20 122 during its first year of operation. Hence, farmers are not only getting benefits in terms of lower costs of inputs but also additional income from the store earnings (in terms of rebates and dividends). In addition, farmers, particularly those involved with the management of the Agri-Vet store are improving their managerial capacity.

4.2 Knowledge and skills

As mentioned above, there are three areas for skills enhancement; analytical skills, economic skills and technical skills.

4.2.1 Analytical skills

As part of the CI&I process, building the capacity of farmers to critically analyse their farming systems is important. A series of analytical techniques and tools were introduced. These analytical tools were designed to encourage farmers to critically assess their current situation as well as various options for improvement in their livelihood system. The techniques/ tools included:

- Focussing questions and focussing frameworks
- *Repetitive Why* technique
- Critical success factors framework

- Use of key performance indicators
- Impact and influence framework
- Process design and management framework (to impact on profit and input/output marketing)
- Decision assessment framework
- Observations, questions, ideas and opportunities (OQIO) technique
- Structured feedback
- Performance improvement reporting framework
- Strengths, weaknesses, opportunities and threats (SWOT) framework
- Record-keeping/basic accounting
- Development of enabling questions
- Thinking tools
- Local Best Practices (LBP) approach

For instance, using reconnaissance survey techniques, the team facilitated a focus on marketing and credit and financial systems in the area (Rola-Rubzen, Gabunada and Mesorado 2002a, 2002b). Farmers identified the problems and constraints in relation to credit and financial systems. In all farmer groups in Hindang and Baybay, credit or financial constraint was identified as a major impediment in improving livestock production systems. Through the reconnaissance and SWOT techniques, farmers were then asked to identify opportunities and possible solutions to credit/ financial problem. They were also asked to identify current and potential sources of formal and informal capital.

Using another technique, farmer-respondents were given the opportunity to identify critical success factors (CSF) for improving chicken and pig production. Under this framework, farmers were asked to identify key practices (KP) that will impact on the CSFs, and key performance indicators (KPI) to measure the impacts of key practices on the critical success factors.

The project team developed several thinking tools and training modules. For instance, a marketing timeline for chicken tool was developed and tested with farmers. A simple budgeting tool was also developed. Other tools developed by the project staff included the chicken systems game, chicken activity timeline, chicken mortality boundary setting framework, goal setting and well-being and profit indicator tools (Espinosa *et al.* 2002). These thinking tools contributed to the identification and exploration of various opportunities that could make a positive impact on improving farm households' livestock production system.

As a consequence of these analytical techniques and thinking tools, farmers have generated opportunities for improving profitability of their livestock (chicken and pig) enterprise. They are now aware of what profit means and are using this knowledge in choosing options to improve their chicken production and marketing systems.

One point to note is that rather than 'teach' the techniques in lecture style, farmers learned them through application in one or more of the steps in the CI&I process to their particular situation. Hence, understanding, retention and recall of techniques learned were expected to be high.

4.2.2 Economic skills

During the course of the project, further refinements on the project focus were made. The emphasis changed towards improving the profitability of smallholder livestock production. Because of this, improving farmers' ability to assess the profitability of their enterprise became all the more important. There was a need to build the capacity of farmers in assessing various actions and opportunities in livestock production using simple economic analysis. But first, there was a need to build the capacity of the farmer support team in evaluation techniques. Hence, capacity building under this category came in two steps; first training the farmer support team, then training the farmer participants.

The project team developed a process design and tools aimed at enabling farmers to analyse profit from various opportunities, as well as assess and implement opportunities that will have real impact or improvement on profit. The process involved enhancing farmers' understanding on the principles and methods of evaluation of profit. This was achieved with the use of a focusing framework on well-being (i.e., a 'household well-being' tool) and a profit thinking tool. Farmers were able to identify indicators of well-being in relation to the need for increasing household income from several income-generating opportunities, including pig and chicken raising. They recognised that increasing profit from these production activities could increase household income that in turn would improve their well-being.

The profit thinking tool was run by project staff with the farmers. This enabled farmers to understand and explain the concept of profit. After the capacity building exercises, farmers had better appreciation of the drivers of profit. Thus, they were able to identify parameters they could change (e.g., increasing productivity, increasing output price, or decreasing input costs or combinations of the above) to increase profit. This also led to the identification of opportunities for increasing profit.

After enhancing farmers' understanding and concept of profit, farmers were then equipped with simple economic analytical tools that they could utilise to assess various investment options. Trainings were conducted on gross margin analysis (GMA) and partial budgeting (PB). Gross margin analysis allowed farmers to evaluate the performance of their livestock enterprise in a year or a season. Gross margin measures the difference between gross value of production and the variable costs of an activity. GMA is used to evaluate the current performance of a production activity, enabling farmers to determine whether the practices employed are profitable or not. With partial budgeting, farmers were able to estimate the profitability of relatively minor changes in their existing farming systems. In addition, the team also provided technical support and advice to farmers in economics, marketing and credit and related matters.

The training on GMA enhanced awareness and understanding among farmers about cash and non-cash costs and benefits involved in pig raising. Prior to the training, the farmers did not consider non-cash costs and benefits in computing profit. Moreover, the capacity of LLIP farmers to analyse the profitability of their current practices was also enhanced. They have calculated the gross margins of their production practices. This activity was facilitated with the use of record sheets that farmers individually filled up (Gabunada 2002).

Information from the individual farmer record sheets enabled the farmers to know the current performance of their production activities in terms of profit. It also enhanced generation of ideas for further improvement and innovation. From the record sheets (both for sow and fatteners), the farmers assessed the level of productivity, total input costs as well as reasons for the level of productivity (performance), hence generating new thinking, ideas and opportunities for further improvement and innovation.

The training on partial budgeting was highly participatory. Farmers who had already adopted a proposed change (as identified for the purpose of the exercise/sample calculations) and the LLIP technical staff provided information on estimated input and output coefficients needed in the analysis. Partial budgets were calculated for various identified alternative practices or options. Estimated input-output coefficients were based on farmers' experiences and results of previous scientific studies.

The impact and influence framework was employed in prioritising the opportunities that would impact on profit. This time, the partial budgets became the basis of farmers' assessment of possible impacts on profit of alternative practices.

The training resulted to better understanding of economic evaluation techniques. The farmer support team became better equipped in performing basic economic evaluations. Too, there was an improvement in farmers' ability to identify what technique they could use for various situations and then analyse the investment options or opportunities using gross margin analysis and partial budgeting. They also had better understanding of basic economic terminologies, which are often used in the market place. Because they are able to assess the potential effect of an activity or innovation, their decision-making skills have been enhanced.

4.2.3 Technical skills

There were numerous queries raised by farmers on technical aspects of production and marketing. For instance, some of the issues that were identified related to questions on housing or appropriate area of pens with respect to the number of growing pigs, deworming at the right age of growing pigs, giving vitamins, feeding (e.g., of pure commercial feeds), giving feed supplements, chicken vaccination, proper housing, construction of biogas digester and meat processing techniques.

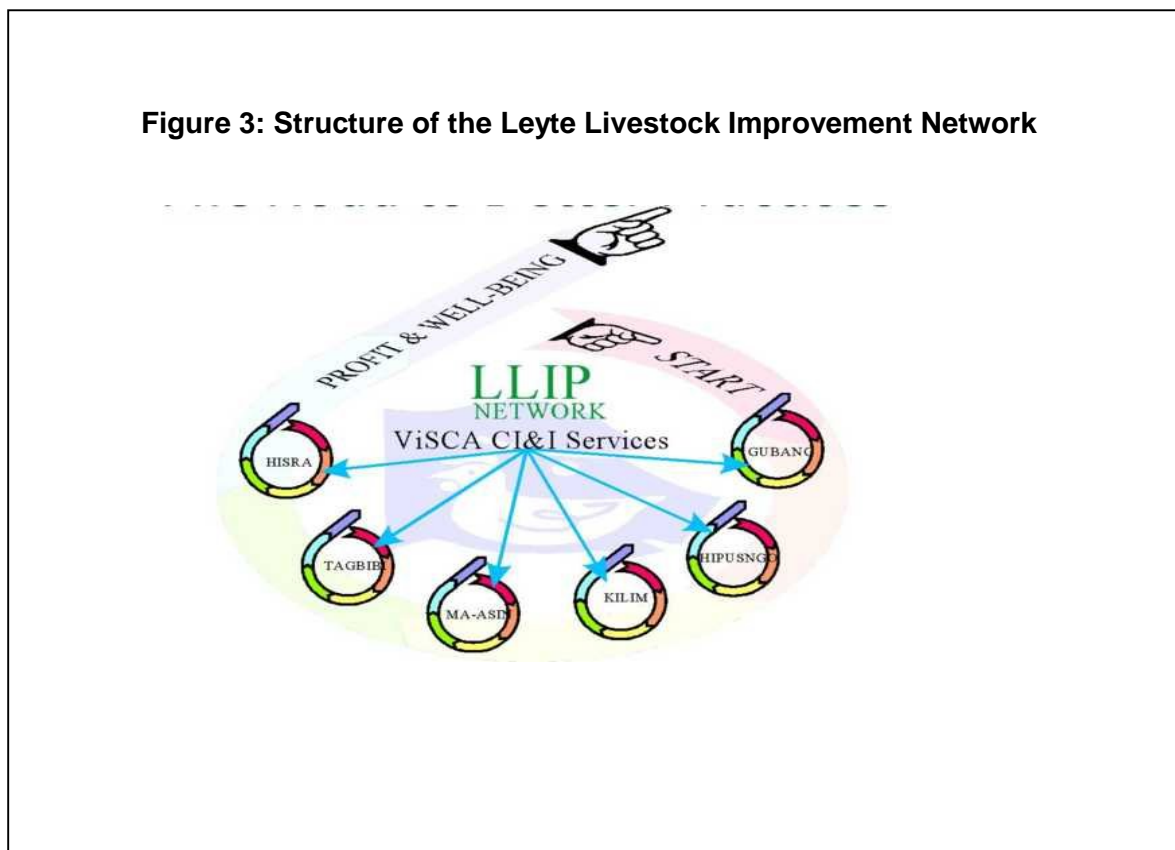
Training on biogas-digester was conducted with farmers. Likewise, as a result of an identified need, training on meat processing was conducted with farmers. The identified opportunity on meat processing was acted upon with LLIP management requesting for the services of a food technologist to provide training to farmers (involving several processed meat products). The farmers appreciated and found the training very useful. Currently, one farmer has started his business on meat processing (Gabunada 2002).

Apart from formal training, capacity building on technical skills occurred through face-to-face consultations and interactions with project team members and specialists. Often, farmers elicit advice from the various project specialists on technical aspects, such as vaccination, feeding and other management practices.

4.3 Leadership

A farmer-managed network of local farmer groups within the project was established and facilitated to enable smallholder farmer participants to develop the capacity to continuously assess and analyse their farming systems, improve their decision making skills and enhance livestock management. The network was called the Leyte Livestock Improvement Network (LLIN). The network was considered to be critical in maintaining the long-term sustainability of the project impacts. The structure of the farmer network is shown in Figure 3.

Figure 3: Structure of the Leyte Livestock Improvement Network



It was envisioned that a farmer network, run and managed by farmers would be important to the continuation of the activities introduced by the project. A critical factor in the successful operation of a farmer group or organisation is leadership. Consequently, leadership skills enhancement was a main focus in the development of the LLIN.

5. Concluding remarks

As a result of the activities since the project commenced, the following outcomes and outputs were achieved.

- Better understanding of farming systems, marketing and credit systems. There is now increased understanding and awareness of the marketing systems, as well as problems and opportunities in marketing (Rola-Rubzen, Gabunada and Mesorado 2002b). This has helped farmers in their action planning for improving their production and marketing.
- The main marketing systems, practices, and general characteristics for pig and chicken marketing have been identified (Rola-Rubzen, Gabunada and Mesorado 2002b). Farmers are now identifying ways of improving their marketing of livestock products (e.g. searching for more profitable supply chains or value-adding).
- The HISRA Agri-Vet Store is fully operational and is now registered as a cooperative. Membership is increasing due to the success of the cooperative and efforts of farmers. Instead of borrowing additional capital, farmers opted to encourage members who can afford to increase their capital shares and recruit more members to join the association.

- Farmers' capacity in simple basic record-keeping, economic analysis and analysis of profitability of various enterprises have been enhanced.
- Farmers are also cognisant of the importance of considering strengths, weaknesses, opportunities, and threats (SWOT) of various options, prior to making their investment.
- Tools have been developed to improve the capacity of farmers to identify key indicators they use to assess change.
- Farmers' capacity for analysis and assessment of their existing system was enhanced. Farmers were also empowered to try out innovations that could improve their system.
- Farmers, particularly LLIN officers, have undergone leadership-enhancing activities, which are expected to empower them and improve their leadership skills.

The interdisciplinary nature of the project requires team effort of technical specialists and socio-economists, especially in analysing and assessing profitability of various opportunities. Identification of technically feasible opportunities relating to increased productivity requires technical expertise, which the socio-economist may not be able to fully provide. Innovations on technical aspects also require the expertise of animal scientists and other technical specialists. On the other hand, socio-economists can assist in assessing the economic viability of the various options for livestock improvement. In like manner, specialists in production, nutrition, marketing and extension, can all contribute in their own areas of expertise, all towards the fulfilment of a common goal – that of improving the welfare of farm-households.

One of the challenges of the project is how to ensure the long-term sustainability of the work started by the project. As experience with past development projects have shown, the long-term sustainability of project impacts will depend to a large extent on the adoption of techniques or outcomes, which in turn will be influenced by adoption of local governments (Loevinsohn and Rola 2000). This is particularly true in the Philippines where management is devolved at the local level. This project is trying to address the issue of sustainability, both by the establishment of the LLIN discussed in section 4.3 and by expanding its activities.

Recently, trainings were extended to the technicians of the Office of the Provincial Agriculturist in relation to activities in improving profit performance from pig production. To some extent, the continuous nature of the CI&I process provides a framework to continuously identify, analyse and evaluate various changes that would improve farm-household income and welfare. This experiential and cyclical process, if imbibed and adopted by farmers, would engender critical thinking, assessment and decision-making, which would help them critically assess innovations and options for improvement, hopefully translating to better incomes and welfare of farm households.

We are now moving towards the end of the project and are in the process of reflecting on what the project has achieved. In musing on what the project has accomplished, we are reminded of the words of Mortiss and Chamala (1991):

*Telling adults provokes reaction
Showing them triggers the imagination
Involving them gives them understanding
Empowering them leads to commitment and action.*

Indeed, this is what our project envisions. We are hoping that this project will not only provoke reaction and trigger the imagination of the Filipino livestock farmers in Leyte, but also improve their understanding and, indeed, empower them to improve their and their households' welfare.

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