

**COUNTRY STUDY**  
**FARM MANAGEMENT IN AGRICULTURAL EXTENSION**  
**VIETNAM**

**1. A Glance At The Agricultural Extension Services In Vietnam**

The Renovation Policy of the Vietnamese Government since 1986 marked an economic milestone in the present Vietnamese history. It deviates from the Soviet style in managing the country's economic activities toward a market economy form of governance. The main focus of production in the rural sector was shifted from the cooperatives and state farms to mostly individual farming households. The new policy is supposed to encourage private as well as public sectors to boost up their production by exploiting all their available resources by all means based on the comparative advantages of their region. Unfortunately, it is easier to say than to practice. In reality, at all government levels in Vietnam, targets for agricultural production are still allocated in the same top-down manner, and the lowest governmental body still urges farmers to produce commodities even if they do not want to choose. Furthermore, as every individual farmer tries to maximize his human and natural resources, he unconsciously --or even intentionally-- damages the environment and the resources around his household. This attitude had its origin from the period when government policy on securing *in situ* food self sufficiency was dominating the entire country. At that time, hundreds of thousand hectares of forest were cleared without mercy to provide more land to grow rice for the local populace. As the concern for environment management becomes more and more serious, the Government directed the science and technology sector to find sustainable solutions to improve the situation. The generated appropriate technologies from all research programs must be transferred to the farming individuals as well as to the local administrators. Under the Vietnamese socialist governmental structure, the local administrators can be strong advocator of any technology once they understand it. Their extension role cannot be denied. That is the reason why even there is no official agricultural extension system in Vietnam in the past, top-down directives could contribute a great deal to Vietnam's present increase in rice production. What appeared to be agricultural extension is a little more than simple transfer of agricultural technology to farmers at large in much a top-down manner, little is paid to the real needs of the farmers, nor the concern for ecosystem sustainability. In the past we have seen hundreds of thousand hectares of forest or acid sulphate marshes had to give way to rice fields but the end results were: the forests and marshes were gone while only a small quantity of rice was harvested.

Since then, through several workshops initiated by responsible people involved in agricultural technology transfer in various parts of the country, with support from the Farm Management Unit of FAO-RAP in Bangkok, there was a consensus that an official agricultural extension system should be established for Vietnam since in a market oriented economy the individual farm household is now the main unit of production. This system should be based on the grassroots of all provinces, not sitting in central government offices. A Prime Minister's directive in early 1993 finally gave birth to the Department of Agricultural Extension (DAE) within the Ministry of Agriculture and Rural Development (MARD). The implementation of an agricultural system in Vietnam has begun. Unfortunately, because most of the responsible officers of the DAE are not trained specifically in agricultural extension, the system is still resemble a program of top-down technology transfer as before but under a new name. While waiting for official government policy on agricultural extension, the provinces continue to carry out extension activities according to their own initiatives in meeting farmer's needs for technology. Commonly each provincial Department of Agriculture and Rural Development has a "Program" or a "Center" of Agricultural Extension, which is composed of a dozen university graduates majoring in agronomy, plant protection, animal husbandry and veterinary science, fisheries, and forestry. These officers may have attended one or more training courses on agricultural extension offered by an agricultural university or by an agricultural training center operated by MARD. They use booklets and leaflets of simple technology to supply free of charge to the farmers through their district outlets; they establish "demonstration farms" throughout the country in accordance to the various agroecosystems; they collaborate with private agrochemicals companies to finance part of the extension activities in the provinces. Over the radio, each province, following the national broadcasting system, carries out a daily 30-minute extension program.

At the village level, agricultural cadres are supposed to make daily contact with farmers, but due to their inferior technical ability, very poor salary and poor working conditions, most of them could not function effectively, letting the time goes by. Recognizing this phenomenon early in the game

through several rapid rural appraisals in the Mekong Delta, the rice bowl of the country, starting 1977 the agricultural division of the University of Cantho, with the participation of the television stations of Ho Chi Minh City and Cantho City, decided to launch a program by which as many government officials at all levels as possible could learn appropriate rice production technology, since food production was the first concern of Vietnam. A television series on 'High Yielding Rice Cultivation Technology', a step-by-step presentation of modern package of practices suitable to the Mekong Delta condition was broadcast every week to cater a large audience of government and Communist Party personnel from provincial to hamlet levels.

Simultaneously, the agricultural division of the University of Cantho introduced an integrated method of instruction, research and extension to send the students to the districts to assist provincial and district governments in executing applied research and demonstration of appropriate technology. Each of these projects was used as a partial fulfilment for the requirements for graduation of university graduates in agriculture. It was found that by this approach, several advantages were realized:

- agricultural research at farm level can be carried out at a very low cost to the central government because there was a greater share by the local government. The local government always gave strong supports to these projects because while they felt real needs for the technology they could not have their own expertise to do the job.
- technology transfer to farmers happened when the students work together with cooperating farmers under the supervision of University's professors. The applied research plots in the farmer's fields served well as demonstration plots where farmer-cooperators could by themselves explain to their neighbors of what they did to obtain those technologies.
- training of research and extension cadres --in the persons of graduating students-- can be realized at low cost to the central government. The research quality was assured because the students worked not only for the sake of the farmers but also for their own graduating reports.

Lately FAO and several donor agencies support extension programs in Vietnam. FAO for example, with its integrated pest management (IPM) program supported major provinces in carrying out programs such as farmer's field school (FFS) and farmer participatory research (FPR). This approach has proven its effectiveness in most provinces in Vietnam. In some northern provinces, the FFS approach is the basic tool for extension programs.

## **2. Identify service components where farm management concepts tools and approaches are used, how are they used.**

Under the socialist system, modern farm management techniques as published in "Farm Management for Asia: a Systems Approach<sup>1</sup>" are almost unknown to agricultural extension workers in Vietnam. In this country, when we tried to introduce agricultural extension activities, the governing officers at MARD used to brand the term "agricultural extension" (AE) a capitalist concept. It's easy to understand this because under the soviet system, farmers only took orders from cooperative managers, who in turn took orders from provincial or district officers. Bottom up consideration was not practiced at all; no farmers' voices were heard. Since the Agricultural Extension Department was established in 1993, we have to work more with MARD to accept the various AE tools. The "farm management" (FM) concept is next on the pipeline. The Faculty of Economics in several agricultural universities have been teaching "Agricultural Economics" curriculum, in which "Farm Management" is a course, but the course contents still carry the Marxist economic concept used for statefarms or cooperatives. At the University of Cantho, we only include simple partial budgeting technique and simple farm book keeping practice in our training programs for extension workers.

The extension programs in Vietnam focused mainly on food production particularly for rice and its components. Since 1996, as surpluses in rice production become big problem of stagnant farm income, agricultural diversification has taken place in farming practices. Therefore, the new responsibility of agricultural extension services is centered not only on advising crop & animal production but also on conservation and reasonable use of resources. Thus a knowledge on farm management is indispensable. But without formal training on Farm Management, the extension services for crop & animal production focus on:

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<sup>1</sup> (FAO Farm Systems Management Series, No. 13, 1997).

- increasing in the production of rice and cash crop for domestic consumption and export;
- improving quality of agricultural products (rice, fruit trees and other cash crops);
- increasing the production of animal for domestic consumption and export;
- introducing progressive technologies in processing of agricultural products; and
- introducing methods for reducing losses due to pests, diseases and natural calamity.

Extension activities on conservation and sustainable use of resources focus on:

- conserving soil and water resources;
- applying IPM in crops; and
- conserving biodiversity, especially plant genetic resources.

Extension activities related to farm management focus on:

- management of farm with a farming system approach, alternative uses of resources in an effort to maximize productivity and farm incomes; and
- introduction of household economic management into farming practices.

Typically, the agricultural extension office at the provincial level operates in such a way that district level and village level extension workers can be mobilized at any time to:

- discuss with farmers and communities for determining the target areas, identification of farmer's needs and the problems that farmers are facing;
- set up the project priorities, discuss with farmers and communities to determine the training needs and other services;
- provide training to local extension workers, farmers and communities;
- build up the pilot production plots, demonstration plots, integrated pest management (IPM) and farmer field school; farmers are free to participate in the program; and
- implement dissemination and expand the program to other farmers.

**3. Indicate training programs conducted on farm management for the agricultural extension workers, the modalities of training, subject matter content, frequency of training, who provides the financial support, training of farmers and what to extent follow-up of the training activities are done.**

Specialized training on farm management is lacking in Vietnam, as indicated above. However, in most training activities offered to agricultural cadres and farmers, as well as in demonstration plots coupled with farmer field days, or in specific commodity farmer's club (such as High Yielding Rice Farmer's Club, Horticultural Club,...) activities and informal technical discussion during village gatherings, during FFS and FPR, the content on farm management aspect is usually emphasized on the skills and knowledge for maintaining high yield rather than economic gain. Most training courses are designed to fit a short period so that most extension agents as well as farmers can afford to attend.

Throughout the country, short term training courses are conducted by agricultural, forestry, and aquacultural extension specialists and cadres. There are two categories of courses: (1) officer training courses for extension officers and cadres and (2) farmer training courses designed for farmers.

- *Officer training courses* are conducted mostly at Provincial Extension Center/Office by cadres who were trained by the universities, or by a few agricultural research and development institutions. This type of training may take place once, sometime twice, a year.
- *Farmer training courses* are most popularly designed to teach technology to manage the farm for high yielding rice cultivation and integrated pest management (IPM). Sometime specialized training courses for livestock keeping, animal disease prevention, hybrid corn production, etc. were given. Usually there are about 50 farmers attending each course. Some courses conducted by famous scientists may attract 200 trainees at a time. Attendance sometime depends on the amount of per diem paid: IPM courses sponsored

by FAO is more popular since their per diem is more generous than local training courses.

Trainers of these courses are designated extension trainers trained by extension centers or agricultural research institutions, or just agricultural officers of district or provincial agricultural departments. Many of the training courses were reported not effective<sup>2</sup> since most of the trainers did not have specialized extension training so they do not possess special skills in training methodology. Their training lessons were therefore not appropriate to the various levels of education of the trainees, the degree of retention of information by the learners was low, and even nil especially where lessons contain highly technical terms. In addition, teaching materials used in the training courses are usually boring, since the trainers did not learn appropriate techniques in teaching aid production.

Furthermore, most of the training courses are replica of a standard general course by the Department of Agricultural Extension, without consideration for the felt needs of the intended farmer-trainees. This top-down approach often discourages the learners and resulted in more negative effect than beneficial. A farmer's training course in the province is rarely designed through a farming system approach. There is no solicitation of farmer's participation, nor is any multidisciplinary team to recognize indigenous knowledge, social conditions and biophysical condition where appropriate technology will be selected, and training course could be designed. The CIDSE program in Thai nguyen province, the SIDA program in five other mountainous provinces, and several extension programs of Tra vinh and Soc trang provinces are among the first ones that employ a PRA approach in agricultural extension in Vietnam.

The biggest drawback of this state of unorganized and uncoordinated activities clearly resulted in:

- unnecessary duplication of efforts,
- wasteful expenditures on extravagant equipment,
- ineffective technology promotion because the top-down approach in technology transfer is still prevailing,
- little is left to the farming households to learn about the resource system they possess, and hence they could hardly select the farming system that is most appropriate and sustainable to them.
- little awareness to environmental conservation by both extension workers and farmers.

The overall impact of this 'free lance' extension system is that the income gap between the rich and the poor is widening. Rural poverty and seasonal hunger still persist in every corner of the country due to farming failures by poor farmers in remote areas.

In order to correct this situation, the extension training group in the Mekong Delta Farming Systems R&D Institute of the University of Cantho has designed new training courses and tried on the extension workers of Tra vinh province as a test case. We focus on two types of training programs that are central to issues conducted on farm management for the agricultural extension workers :

- i) the household economic management; and
- ii) the IPM farmer field school training (Table 1).

Table 1. The training programs.

Household economic management (HEM) training	IPM training
<ul style="list-style-type: none"> <li>• HEM training for trainers, participants are extension workers, local officials (1 week, 50% theory and 50% practical).</li> </ul>	<ul style="list-style-type: none"> <li>• Rice IPM training for extensionists (12 weeks, 50% theory and 50% practical).</li> </ul>

<sup>2</sup> Nguyen Thi Kim-Nguyet. 1996. Survey of existing agricultural extension systems in two representative provinces of the Mekong Delta. *Unpublished report.*

- HEM training for farmers (1 week), participants are project members and other farmers outside the project;
  - Each training group consists of 30 people, divided into subgroup of 6 each;
  - HEM training takes place at the project area. They have to learn various aspects such as system concepts, tools for self-evaluation of farm household resources, practicing on economic analysis;
  - The training exercises are made based on real household-situation. They have to practice to solve their own problems, preparing for a production plan;
  - Farmers are also trained with specific subjects such as crop production, animal production, fertilizer application, pesticides use, etc. They are also trained how to record of farm activities.
  - Follow –up of training: farmers are voluntary to participate in pilot production programs, demonstration plots, keeping records of farm activities.
  - Practical training in IPM farmer field school (12 weeks). Participants are project members and farmers outside the project;
  - Practical training in IPM farmer field school (12 weeks) is conducted for both the dry and wet season rice crops;
  - Each training group consists of 40-50 people, divided into subgroup of 10 each;
  - Rice IPM training takes place at the field training facilities. They have to grow pests, observe, classify, and determine the life cycle of pests in relation to crop growth stage. Field records are done by weekly;
  - The training curriculum is made based on field-situation. They have to practice to train for farmers. Field problems discovered in the practice fields become topic for discussion.
  - They also conduct experiments on insects, pests, fertilizer application, pesticides use, etc. The results of those to be introduced and discussed.
  - Follow –up of training is conducting of IPM farmer field school, implementing IPM in rice, field record-keeping of insects&pests.
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Household economic management (HEM) training has been introduced into a farming system as early as 1999, under UNDP-Vietnam project entitled VIE/96/025 “Capacity Development for Poverty Elimination in Tra Vinh ”. HEM training was considered necessary as it helps the poor farming households properly assess their own resources and make the right choice for improving farm incomes based on their available resources and conditions. The basis for training approach for HEM is farmer-based training. Participants are resource poor farmers within the project. Therefore, lessons are prepared and performed in very simple, concrete and illustrative ways. Practice and example are more preferable and encouraging. The HEM training programme emphasizes the following:

- *focus on a sustainable development*, providing a system approach concept, techniques for self-evaluation, improving of utilization and management of farm resources to achieve sustainable development;
- *provide a good knowledge* of household economic management, farmers have to practice on performing simple household economic analysis, discussing on efficient management of capital and labor, practicing of making business plans and developing a small enterprise project;
- *keep recording* of farm activities, such as expenditures and incomes of farm household.

The HEM trainings are funded by UNDP. The programme expects to increase the proportion local trainers in order to train for farmers covering the project area. With this set ups, about 500 farmers were trained in the first phase of the project.

Efforts to introduce IPM training to the rice farmers conducted widely as early as 1995, after Vietnam experienced its intensive in rice growing led to use much chemicals, increase production costs and degrade environment. The introduction of IPM in rice is to reduce chemicals used, especial insecticides and pesticides, and to reduce production costs for rice growers. The basis for training approach developed for IPM training programme in Vietnam is informal education; itself is a development learning process, dealing with “learning by doing”. The IPM training programme emphasizes the following subject matter content:

- *focus on a healthy crop*, resistant rice variety, and selection of tolerant rice varieties to local pests and diseases. Focus on health crop is given attention to crop management, technology supports;
- *provide a good knowledge* of pests and natural enemies, farmers can capture knowledge such as the life cycle of pests and natural enemies and the recognition of their different stages.
- *keeping records* and regular observation of the field, this work allows to assess the occurrence of pests and natural enemies in relation to the crop’s development stage;
- *experimentation* with varieties, fertilizer application, concentration of pesticides used, rotations and biological control.

The IPM trainings are funded by FAO as an attempt to train for trainers and extension workers. The programme expects to increase the proportion of IPM farmers that support to farmer training. After completing their training, trainers return to their regular works as keeping records of pests and having responsibility to organize IPM farmer field school. With this arrangement helps to scaling up the success of the adoption of IPM in rice. Beside of using trainers, spontaneous enthusiasm of many farmer field school participants to carry out “informal training” for other farmers in their group and community, farmer-to-farmer training seems to be the most promising multiplier of success of the programme. Given that, the adoption of IPM in rice, chemicals application in the rice field and production costs has been reduced.

#### **4. Identify to what extent farm record-keeping has been applied, who implement the farm record-keeping activities**

Many farmers have experienced the change to a transformation in farming practices, making farming more sustainable and profitable as a series of changing in farm management approaches. In this respect, the farm record-keeping has been applied in various projects by different institutions. In particularly, farm recording has adopted in rice IPM farmer field school. The principles developed for rice IPM farmer field school in the Mekong Delta of Vietnam are:

- To grow a healthy crop, observe and make records the field weekly;
- To conserve natural enemies, raise pests for testing;
- To provide an informal learning situation, farmer field is the classroom; and
- To turn farmers to IPM experts.

As a result of this strategy, most of participants of the IPM farmer field school training have learned to manage their farm in an optimum condition when they made regular observing and recording of pests in the field. This work allows farmers to assess the occurrence of pests and natural enemies in relation to the crop’s development stage. This also raises an important issue regarding IPM training as simply a way to reduce pesticide use and production costs in rice.

In a case study of Tra Vinh province, of the 500 participants, who participated in the training on “Household Economic Management”, about 150 participants have adopted recording of their farming activities. The core of this recording is including:

- daily expenditures of household activities;
- production costs of farming activities; and
- incomes of household.

The adoption of farm record-keeping among participants of "Household Economic Management" training can be considered as an alternative way of farm management which allows farmers to solve living problems by themselves. By this, farmers can improve household resources management in order to achieve a better livelihood condition.

In general, at the project level, researchers or extension workers are trying to scale up the implementation of farm record-keeping activities. In addition, many progressive farmers themselves have adopted farm recording.

##### **5. Discuss their sustainability, strategy, constraints and potentials for keeping records.**

When discussing on keeping records of farm management, experts agree that further progress should be employed by this strategy, the farm management to be considered as an important component in household farming practices. Given here are the two examples related to that issue.

The first example is a story which taken place in the Capacity Development for Poverty Elimination Project of Tra Vinh province. In order to attract poor farmers to participate in pilot production program, the Department of Agricultural and Rural Development has mobilized several organizations such as research institutions, private fertilizer companies, the pesticide producers and feedstuff producers around the project. These organizations provide the products and services that allow farmers to adhere to the norms of the project through adopting technologies, receiving inputs investments while making changes in farming practices and management. Farmers have perceived that they keep recording farm activities as a way to make a better management in farming practices.

The second example is the case of the rice-shrimp farming system project in Bac Lieu province. All the 55 rice-shrimp farmers participating in the project were trained in HEM as part of the whole package of practices for this type farming system. Only 8 participants have adopted the kind of intensive guidance of farm management (keeping records). We monitored the adopters, and found that these skills were essential for them, based on the records they adjust their farm management accordingly and were able to improve their farming operation and gained more profits. On the contrary, other participants who paid less attention in their farm management resulted in minimal changes in their farming practices and less profitable.

One of the most difficult aspects in keeping records is that farmers –having low level of education (generally of grades 3 to 5 equivalent)- are not always accustomed to write down the records as they spend all their time in field works. Some of the farmers could not easily interpret and use the recorded data. So they could easily lose interest in keeping records. Therefore, we suggested that at the beginning stage, the project should provide additional training specifically designed to help farmers learning the methods of simple book keeping before introducing farm management topics in agricultural extension training.

It is clear that with such farm keeping-records activities, the farmers have a better strategy in farm management activities. In this respect, when asked about advantages of keeping records, farmers tend to mention their mastery in farm management, confidence in decision making and solving farm problems, and they can make the balance in farm expenditure and production activities by themselves.

##### **6. Recommend possible entry points where farm management can be introduced and/or further employed to make farming more sustainable and profitable.**

Based on the experiences of the Capacity Development for Poverty Elimination Project in Tra Vinh province, reviewing the results of IPM Program in Vietnam, and listening to the experiences of 55 rice-shrimp farmers in Bac Lieu where farm management have introduced, we would suggest some

possible points for further research to make farming more sustainable and profitable. We have distinguished between two components of farm record-keeping activities:

1. farm record-keeping activities under the project, participants within the project follow the guidance and keeping records as project required, and
2. the adoption of keeping records by progressive farmers outside the project, experienced farmers practiced recording of farming activities: observation, interpretation and anticipation.

Experiences showed that progress towards farm management with farming system approach among rice-shrimp farmers, rice growers has made farming more sustainable and profitable as a result of the first component. Researchers or extension workers help farmers to implement keeping records, provide services in order to maintain farm management.

Unlike participants within the projects, the progressive farmers are very active to the adoption of technologies such as new cultivars or the purchase of services from specialized agencies. Farmers are familiar in implementing of farm record-keeping activities. A simple format of book-records is preferred because it is easy for farmers to fill out. As a whole, farmers manage the farm as an eco-system based on observation, keeping records, interpretation and anticipation that helps farmers to achieve a sustainable development, better utilization and management of farm household resources.

## **7. Gaps And Needs**

It is quite clear now that in order for Vietnamese farmers to move faster to catch up their "dragon" neighbours in the wake of globalization, they should be given better opportunities to learn modern farming technologies, among which the skills in farm management and agri-business management. Parallel to preparing farmers' capability, a renewed policy in sustainable agricultural rural development (SARD) must receive high priority in the government agenda. This approach requires a truly integration of multidisciplinary solutions to farming situations to help farmers manage their enterprises effectively. The urgent need for implementing this strategy is *an appropriate human resource development program* in agricultural extension. All extension agents must possess skills and knowledge including farm management and farm business in order to guide farmers in their daily operations. Only then, farmers can face fierce competition during the free trade era.

We hope that the MARD will invest enough infrastructures and trained manpower to upgrade the agricultural extension system in which the farm management advisory services will be included in the overall program.

## **8. Structure of a research-cum-extension system with farm management.**

While waiting for a restructure of the national agricultural extension system as suggested above, the existing structure of a *research-cum-extension system* in some provinces could be further enhanced with the farm management content and should be institutionalized to other provinces. This setup is found very appropriate and useful to both the farmers and the research-extension workers. In the end this continuous delivery-feedback system minimizes the cost of the entire operation. The structure is designed as follows: the researchers-specialists at the provincial Agriculture-Forestry Adaptive Research Center (AFARC) would form a Provincial Resource Management Guidelines (RMG) Team who would carry out adaptive research at their experimentation station by themselves and at the communes by two (or more) advanced farmers with the direct guidance of commune extension agents (CEAs). The CEAs --the most important workers in the extension system-- will be backed up regularly by the District Resource Management Guidelines Team who are staff of the District Agriculture-Forestry Office (AFO). They will be constantly in access to improved research facilities and an upgraded experimentation station. This Research-cum-Extension system thus has a pyramid shape with a broad base to meet all farmer's needs and a sharp cone to streamline the best expertise group in the province to stay in the forefront of appropriate technologies.

The Provincial RMG Team and all District RMG Teams will first be trained together in PRA technique, farming systems component technologies, and farm management tools before they carry out PRA in their respective districts. The Provincial RMG Team becomes trainers, who in turn will conduct annual refresher courses to CEAs. Appropriate scientific institutes and universities will

be commissioned to organize the first training at the province. All course contents should be tailored to the sustainable agro-ecosystems development of Tuyen quang. Complete training aids should be prepared and hand over to all trainees down the line to CEAs, so that they can use them in their training. The CEAs after the training, will use the training materials during their visitations with farmer's households. It should be noted, as indicated above, as the system operates, staff of agro-chemical supply companies also work parallel while promoting their commercial products.

## 9. Conclusion

As the force of economic globalization is approaching the Vietnamese farm gate, we strongly recommended that government's sustainable path toward sustainable development of the agricultural sector, for food security and poverty alleviation, will soon adopt an integrated strategy which should include at least the following objectives:

- (a) to mobilize needed internal and external capabilities to explore agricultural systems management for various agroecosystems to assure maximum food production, especially rice, while supplying more plant, animal, aquaculture products and at the same time maintaining sustainability of the systems;
- (b) to improve production efficiency for all major agricultural, forestry and aquacultural products;
- (c) to increase the value of all above products by appropriate processing techniques;
- (d) to increase farm income by appropriate agricultural extension system coupled with credit facilities and creation of internal and export markets for projected farm products.

To meet the above objectives, *a strong program of agricultural extension based on farming system approach* should be institutionalized and implemented as soon as possible. This program requires a strong and well coordinated extension system throughout the country to include:

- 1) the establishment of provincial research-cum-extension structure with a strong farm management base. This will create a full range of extension personnel from provincial to community levels;
- 2) participation of grassroots organizations such as women's union, youth's league, farmer's association or cooperative in the extension programs;
- 3) training on: (1) PRA; (2) extension methodology to research staff, and community extension cadres. For the latter, appropriate technology as required by defined resource management guidelines will be taught to prepare them well fit to guide or to train the farmers in their respective areas; (3) farm management tools and farm business development tools.
- 4) integrating other support services, such as rural credits, input-output marketing, post harvest processing, into extension program.

## 10. Suggestions and recommendations

**GENERAL RECOMMENDATIONS:** In order to improve and strengthen the existing agricultural extension system in Vietnam today, we suggest that the Government should take bold steps to realize as soon as possible:

- Institutionalization of farming system approach to agricultural extension system.
- Integration of applied research, extension, and farm management.
- Integration of support services accompanying agricultural extension activities.

### **SPECIFIC RECOMMENDATIONS:**

#### *a- Institutions and personnel:*

- Establishing or upgrading an agricultural applied research center and an expert team at provincial level
- Establishing or upgrading an expert team at district level and a number of applied research sites on farmer's fields.

- Posting specifically trained commune extension agents in every village, or creating that position in cooperatives

- Establishing credit and saving facilities as close to poor farmers as possible.

b- *Operation and Management:*

- For every community or every ecoregion, accurate benchmark survey using PRA method by the district expert team together with commune extension agents (CEA) and farmers to define most appropriate *market-linked* resource management guidelines (RMG)

- Defining/applied researching appropriate technological and socio-economic measure(s) to implement the above RMG;

- Designing training course for CEAs to:

- (i) learn the needed technology required by RMG;

- (ii) familiarize with credit loan procedures to get ready to help farmers applying loans.

- (iii) learn farm management tools and concept of farm business management;

- (iv) prepare appropriate lesson plans and training materials ready for farmer training or visitation.

- Organizing credit loan to targeted communities.

- Monitoring and continuing guidance to farmers by CEAs.

### **Indicative plan of action**

The following sequence of an indicative plan of action is designed to implement the above suggestions:

STEP 1- National planning at the Dept of Ag Extension to redesign the structure of AE system for the whole country. *Output:* A proposal for **Strengthening of AE system in Vietnam (with farm management concept)**.

STEP 2- Staffing all required posts prescribed in the proposal by redistribution of current staff at the ministries who belong to the excess force.

STEP 3- Infrastructures to be established:

- . National/regional Agricultural Extension training centers

- . Provincial Agricultural Applied Research and Training (AART) Centers.

- . District AART Offices.

STEP 4- Defining specific training objectives: for each staff level, the training objectives of their respective training courses are defined to meet the expected outputs.

STEP 5- Organizing training activities:

- . Courses for staff at all levels by respective training facilities;

- . Courses for farmers, by CEAs, after RMG will have been defined.

STEP 6- Monitoring and evaluation: this is a routine operation of every extension program, particularly when PRA is used as a basic tool.

It has been proven that in sustainable agricultural development in poor rural regions, agricultural extension system should be improved by organizing along a farming system approach to address the felt need of the poor farming communities. The farming system approach could very well enable the members of the agricultural extension system to determine appropriate technologies that

are: a) easy to apply by farmers, particularly the poor farmers; b) utilizing as much as possible local sources of inputs that could preferably be generated by the farmers themselves; c) environmentally least harmful; d) least costly to farmer's income; and f) yielding optimum products whose by-products can be integrated into the production system.

To the developing countries in Asia, the issue of environment and sustainable development is still taken for granted since they present an eternal conflict at the grassroots level. As the poor farmers continue to rely on natural resources for their survival without consciousness of the degradation of these same resources due to their destructive exploitation, the poor will become even poorer. It is high time now to reverse this trend, first by restructuring our agricultural extension approach. The recommendation proposed above will eventually provide a powerful tool for hunger eradication and poverty alleviation.