Country Case Study of Vietnam

FORESTRY EXTENSION IN RELATION WITH
THE 5 MILLION HECTARE REFORESTATION PROGRAM (5MHRP)

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1. INTRODUCTION

Vietnam has a wide range of climatic and topographic conditions which accommodates a diverse forest flora and a variety of forest types including broad-leaved tropical evergreen and semi-deciduous, sub-alpine tropical, conifer, bamboo, mangrove and melaleuca. The majority of Vietnam’s forests are found within the mountainous midland and upland regions, with the central highlands containing upwards of 42% of the nation’s remaining forests. These upland regions are inhabited by a majority of Vietnam’s 50+ ethnic minority groups, representing some 13% of the nation’s population (UNDP; AFN 1998). Approximately 24 million people live in or around forests and depend on the forests for their livelihood. Official figures grossly understate the importance of forestry in the rural economy, indicating that forestry accounts for only 2% of the country’s GDP (Van San & Gilmour 1999). In fact forests provide main sources of income for the highland farmer through the harvest and sale of bamboo, firewood, medicine, fruit, fodder.

Estimates of the annual rate of deforestation range from between 200,000 ha to 400,000 ha per year (AFN 1998; Hirsch 1996a; Van San & Gilmour 1999). Rapidly expanding populations and migration into forest areas are major pressures on remaining areas of forest. However, many forest scientists have pointed out that, one underlying causes of deforestation in Vietnam are the poor management and low production of production forest. A farmer if fail in his production forest will try to enter natural forest, as an alternative, to raise his income. As our unofficially observation around the country, production forest in Vietnam, except the case of a few export companies, is far from a profitable business. We have seen many cases, where the forest yield is very low - thus make production cost of the wood plus the transportation is already higher than the market price. Today, forestry is become a complex business, forest farmers need to know about forest management, silviculture technique, market, investment. All of these require appropriate training. The extension system of the country is, however, newly developed and is a long way from being able to meet such requirements. The purpose of this paper is to provide an overview of the current extension system in Vietnam and suggest some alternative for improvement.

2. EVALUATION OF STATUS OF FORESTRY EXTENSION SYSTEM

2.1. The status of Extension system in Vietnam

By the Prime Minister's Decree No. 13/CP dated in 1993, the nation-wide unique extension system (for agriculture, forestry and fisheries) was established in Vietnam. The extension system, supervised by the Ministry of Agriculture and Rural Development (MARD, has currently developed into 4 levels.

Central level – Department and Extension
Department of Agriculture and Forestry Extension under MARD has two functions:

- State management in farming (except forest planting) and husbandry.
- Instructing Agriculture and Forestry Extension work in the whole country.

At present, there are 65 staffs in Department of Agriculture and Forestry Extension of which 60 staffs of university and post university background in farming, agriculture economy and silviculture. Organizational structure of Department consists of 9 divisions:

- Synthetic planning division.
- Personnel and Administration division.
- Training and communication division.
- Food crops division.
- Fruit trees and industrial trees division.
- Small animal division.
- Cattle division.
- Folder division.
- Forestry extension division.

In addition, there is also a representative office in the south of Vietnam.

**Provincial level – Extension center**

At present there are Agriculture/Forestry Extension Centers in 61 provinces and cities in the country. All of them work under the provision of Provincial Department of Agriculture and rural development, some time in different names. However they are all performing similar task: providing technical extension to the farmer. Total numbers of staff in these centers is about 900 peoples: each center there are about 15 to 20 staffs, 70% of staffs have university background in farming, husbandry, silviculture, aquaculture and agriculture economy.

There are 1-3 staff of forestry background (some centers have no forestry staff, the agriculture staff is entrusted with forestry extension or forestry extension is carried out by Department of Agriculture and Rural Development).

**District level – Extension Station**

Agriculture Extension stations are established in about 70% of nearly 600 districts, with total number of 2,000 Agriculture Extension staff. In each station there are 3 to 5 staff having background in farming, husbandry, and silviculture. However, in many districts, there is no extension staff who has forestry background.

At the district level there are some conflicts in term of administration management. Firstly, in some provinces, the district stations are under Provincial Extension Center, while at other provinces they are under direct management of District People Committee - but still technically supervised by District Extension Center.

Secondly, at some provinces, the Agriculture/Forestry Extension Station was not established, thus the district Agriculture section have to carry out extension activities or establish an Agriculture Extension board consists of some part time staff from other functional sections of the district. This creates confusion between State management and Agriculture Extension activity function.

**Local level – extension worker**

Following Government’s Decree No 13/CP and circular 02 /LB-TT on Agriculture Extension, the communes and inter communes will have system of contracted Agriculture Extension workers. At present there is no commune Agriculture Extension system in almost provinces. The main reason is no fund allocated from State budget to pay allowances for local extension workers.

However, at provinces which have stronger finance capability, commune extension workers have been established to work on yearly basis or by season contract.

The number of local extension workers is different from province to province. Almost every province has ability to establish group of commune extension workers or counterparts. In Tuyen Quang province, there is an extension worker for inter communes and in each commune; in addition there are also an extension worker
for each zone III village (the difficult mountainous village).

The level of local extension worker is very uneven. In the upland area it is very hard to select standard extension worker. He is often graduated from secondary school or Agriculture / Forestry secondary vocational school. Even some communes have to accept candidate who has passed grade 2 or 3, who unable to write a monthly report. But in the delta and middle land areas the commune extension worker is often at Agriculture, Forestry secondary vocational school or Agriculture, Forestry university background. The local extension workers who are not trained in Agriculture. Forestry extension or Especially those who are not to be graduated from farming training, they will be entrusted with the task of guiding rice and maize planting. Besides rice and maize, the communal extension workers usually have no Forestry knowledge or paying little attention to Forestry even in the mountainous commune.

The payment for extension worker is different from province to province. In some provinces as Lao Cai province allowance of 90 000 dong (6 USD) is paid to communal extension worker (before June 2000 payment was only 50 000 dong / month (3.3 USD). While in Tuyen quang province the payment for communal extension worker is 200 000 dong per month and in Hai Phong province the payment even is paid of 350 000 dong / month. The fact show that almost communal extension workers are not pleased with the work and not trying to improve the qualification because the payment is very uncertain, they have got no other things as health insurance, social welfare insurance...

Agriculture Extension clubs and excellent farmer clubs have been established in some places. This form is only gather rich farmers who Agriculture Extension how to produce and who are enthusiastic with Agriculture Extension.

In the areas where the extension program is operating with foreign support, the village extension organization is established. It is usually called VMG (village management group) and interest groups. supported groups.

So the State Agriculture and Forestry extension system is established even it is not completed, and at the same time the people extension organization is initially established at the local level.

Besides the State Agriculture Extension system, there are some voluntary Agriculture Extension to be established and other mass organizations as Farmer Association, Women Union, Youth Union are also carrying out Agriculture Extension activities to socialized this activities.

**2.2. Contents and activities of Agriculture and Forestry extension**

In line with Government's Decree No 13/ Government on Agriculture Extension activities. Agriculture and Forestry extension will have following contents:

- Disseminating technical advances in farming, husbandry, processing technology, storage of Agriculture. Forestry and aquaculture products and production experience from excellent producer examples.
- Training and developing skills, economic management knowledge for effective production and business.
- Cooperating with functional institutions to provide market information, Agriculture product prices to help farmers to organize production at high economic effectiveness.

Based on these regulations, the Agriculture and Forestry extension institutions in the country will focus on the following activities:

- New technology training to the farmers.
- Constructing demonstrative models.
- Organizing cross visit, on farm training for farmers to learn from excellent production models and experience sharing.
- Propagandizing, disseminating technical knowledge and production experience in mass media means.
- Publishing and distributing to the farmers the publications as booklets, posters, leaflets of Agriculture, Forestry technology.

As one can see that at present Agriculture and Forestry extension is only dealing with transfer of technology and the contents such as training of household economic management, effective use of loan, Agriculture and
Forestry product processing and storage, market information to help farmers to find out the outlet was not much done, if don’t want to say it was not done yet.

3. AGRICULTURE AND FORESTRY EXTENSION METHOD

Agriculture Extension activities in Vietnam is carried out by many organizations and each organization has its own objectives so Agriculture and Forestry extension methodologies could be classified into four categories

3.1. Program oriented method

In practice, Agriculture/Forestry extension policies are mainly implemented and imposed into several National Extension programs. In the period from 1993 to 2000, there are 22 Agriculture Extension programs and 8 Forestry extension programs such as followed:

1. Agriculture and Forestry extension program for slope land.
2. Sustainable farming on degraded and bare land program.
3. Program to apply new technique to improve quality of natural and plantation forests.
4. Development of indigenous species program.
5. Scattered plantation on delta and coastal areas program.
6. Pest monitoring and fire control Program
7. Program to improve quality of non-wood product.
8. Extension education program.

Based on the State budget, the Agriculture/Forestry extension sectors are encouraged to develop their own extension plan. However, as our observation, extension program was more suitable for low land agriculture area than for highland forestry area.

3.2. Participatory method

PRA (participatory Rural appraisal) method are often used Forestry development project. This is also mentioned as the official method to be used in National Forest protection and development program (661 program), that including.

- Carry out PRA exercise to help farmer define their current situation and find out their problem and solution.
- Develop agriculture and forestry extension plan.
- Carry out technical and management training for farmers.
- Monitoring and evaluation.

3.3. Field training methods

From 1992, Integrated Pest Management (IPM) program was introduced in Vietnam. The main solution of IPM is to organize the field training to the farmer. It will also encourage the self-distribution of knowledge among the community.

4. LEGAL FRAME AND FINANCIAL ISSUE

4.1. Administration issue

By the Prime Minister’s Decree No. 13/CP dated in 1993, the legal framework for extension system was established. It can be seen that the establishment of a national-wide extension system is quite an effort of Vietnamese government. During its long history (dated back to 50th decade), the extension system has significantly contributed to the development of the forestry sector. In highland area, extension stations are more valuable than just being a forestry technical service, it also acting as a bright point to spread out new knowledge and policy into grassroots people. At remote area, an extension worker, being higher educated than an average farmer, will not only provide them with forestry technique, but also giving advice in many other aspect of life.
However, the professional extension system, following a central planning is in fact too heavy, working slowly, and not able to deal with forestry problem which are very area specific. Decision and plan made at Central level have to go a long way through complicated administration channel, before it can get to the local level. It's even more difficult to get feedback from the local level upward.

As professional extension system is government organization, its budget is fully covered by the state, which including operation budget, salary, extension project, etc. The official number of staff working in extension service is not available. However, our estimation based on number of province, district, and commune showed that there would be at least 2000 regular staffs working for forestry extension service all over the country. It can be seen that extension system become a huge organization. In order to make it work efficiently, we need a very well management scheme and good communication system. Unfortunately, it may not be the case of Vietnam or at least not the case of remote area where the connection between local communities and provincial administration is rather loose.

An alternative to overcome this problem is to split extension system into several Regional Extension Department based on ecological region. By doing this each Regional Extension Department will have more control and resources to deal with their specific problem. For example: extension service for coastal area dominated with mangrove forest should be totally different from service for mountainous forest area. They should not follow the same blue print given by Ministry of Agriculture and Forestry.

4.3. Financial issue

Another issue of professional extension system is its financial status. As mentioned earlier, because the professional extension system is part of government administration, they receive fund from the state and do their job within this budget.

Figure 1 showed the yearly national budget for extension project (excluding operation budget). It can be seen that the proportion of forestry extension is rather small, mostly less than 10% of the total budget. And from 1993 to 2000 while budget for agriculture extension has increased from 231,000 to 2,112,000 USD, the budget for forestry extension in the year 2000 only increase to 198,000 USD. This amount of fund is obviously not enough for the whole country.

In many cases this state budget is insufficient for extension program. The result is incomplete extension projects - and we all know that many incomplete projects may not worth to a few complete one. From economic point of view, extension service like any other service should be a profitable business. If forestry sector can make money, then they should be able to pay for extension service. In the 70th and 80th decade, when extension station still carried out its public utility function, it would be reasonable to deliver free extension service to the poor farmer. However, today when forestland has been allocated to individual farmer/household and become a large business, extension system should focus its activities into providing technical assistance service.

An alternative to this problem is to change the extension system into a "charge" service. Subside from government if available should be use more intensively, and focused on only a few area rather than spread all over the country. At the beginning, farmer may no willing to pay for extension service (which they have for free before), but in the long-run they will pay for what is important to them.
5. VOLUNTARY EXTENSION SYSTEM

At national and regional levels, out of over one hundred research institutions and universities throughout the country, around some dozen with interests in forestry fields are carrying out teaching, research and extension. Extension activities of such research and education bodies are considered as ‘voluntary’.

Additionally, other organizations undertake ‘voluntary’ extension work in their own right. They include state and private enterprises, international research and development organizations and NGOs, banks, and so on. In particular, the mass organizations in Vietnam, including Farmers’ Association, Women’s Union, Youth Union, whose networks are established further down in villages, hamlets, groups, are expected to do their work effectively at the ‘grass roots’ levels.

For example, currently active farmers like member of Farm Owner Association (FOA) are highly interested in getting quality training services. They have directly contacted with research institute, university to organize workshop, training course for their members. Extension services for this group should be case specific, and very practical. A normal farmer in FOA would invest about 10,000 USD on his business – in case of Vietnam that’s really a serious investment and they do need appropriate technical and management knowledge to ensure their success. Participated in several training of this kind, we have seen how curious farmers want to improve their knowledge, to develop their production. Trainers were flooded with questions on every aspect of forest production. They even ask for necessary address for future reference, and they are willing to pay for the course. This is a good example of collaboration between academic institute and mass organization to bring the research result to the end user.

However, at national scale, example like mentioned above is not a typical one and still in limited. There are several issues need to be address for a better improvement of “voluntary system”:

i) Establishment of involvement of voluntary organization has been limited. One reason for this is the mass organizations in Vietnam are not really strong. In case of European countries, mass organizations (in forestry) are based on strong individual farmer, who get together on the same interest. While in the case of Vietnam or other developing countries, mass organizations are either established by Government which latter will focused their activities on social function rather than production development, or farmer is not strong enough to solve problem themselves – they may be grouped in the same association but a weak association can not solve problem for its member. An approach to this issue would be strengthened of mass organization (in forestry), transform it from Government supported organizations to self-motivated bodies. These changes would take time and resources, however this is critically important for “voluntary” organization to carry out its original function: communicate between farmer and other stakeholders.

ii) Collaboration between the professional extension system and ‘voluntary’ organizations is loose. Because the professional extension system

iii) There is little feedback from local people to research and extension organizations
6. SOME REMARKS

6.1 Outlines of extension activities at local level

According to regulations mentioned in the Decree No 13-CP issued by the Government, the agricultural extension network (including forestry extension) was decentralized from the national level down to grass-root level. The Agricultural Extension Department of the Ministry of Agriculture and Rural Development and Agricultural Extension Centers of the Provincial Agricultural Extension Department represents the national and provincial/city levels respectively. And Agricultural Extension Centers establish extension station per region or per commune. In some areas, the provincial level directly controlled district agricultural extension centers.

Forestry extension centers are mainly funded by the state budget. There have been some foreign sponsored projects involving forestry extension such as "PARC" operating in Ba Be national forest, Bac Kan province. The project also aims to support Ba Be district in agricultural and forestry extension services in order to facilitate a firm ground for the district center to take over the work after the project cycle.

At the moment, there are three main methods applied in the agricultural and forestry extension. The first one is organizing demonstration models, learning by doing workshops to provide visual transfers of new technologies to the farmers. The second one is providing short-term training courses for the farmers. The third one is distributing posters, leaflets... These traditional methods are popularly applied by the provincial extension centers and by grass-root level stations as well. In some foreign funded projects, forestry extension is also integrated with other components such as land planning, environmental education and knowledge improvement, development of traditional trades, income generating activities, etc.

At the grass-root level, forestry extension is mainly targeted on forestry farmers. Initially, more attention has been made to seed centers, pesticide and fertilizer retailers and trading centers for forestry products...

6.2 Achievements made by the forestry extension agencies

Achievements made by the forestry extension agencies have contributed to the transformation of the traditional forestry production into the social one. It also creates more opportunities for households to involve in forestry production, mobilizing abundant labor forces available in remote areas for forestry plantation and protection. And it will contribute to the sustainable forestry development, enhancing the role of forestry production in the overall rural development and hunger elimination and poverty reduction as well.

Along with the forestry and hilly economic development in remote areas, environmental benefits are also considered as significant results gained by the forestry extension agencies. Many bare hills and uncultivated fields were replaced by integrated agriculture and forestry models (agro-forestry models), which were seen to protect water resources, prevent land from erosion, and degradation. At the first stage, techniques of intensive cultivation were applied in Binh Thanh commune, Hoa Binh province or Vi Xuyen commune, Ha Giang province, reducing significantly uncultivated duration of the fields, helping the farmers immediate food sources and at the same time preventing land from drying.

The transfer of forestry technologies is changing attitudes of the farmers on forestry production. As previously considered, forestry was only a place to make living for short-term during the leisure time of agricultural crops or traditional trades, but now a lot of household families are enriched by the forestry production. They want to live on forestry and invest more for their land. Before the farmers always received money for attending training courses, but now they are willing to pay for technical consultants and visits to other good models. Moreover, they are always seeking capital sources, high-yielded seeds with the aim to increase productivity and incomes also. This is an important success in improving attitudes of the farmers under the main support of the appropriate policies in forestry extension.

6.3. Emerging problems in forestry extension

6.3.1. Sustainability of demonstration models
At present, the budget for forestry extension is still limited. The investment capital is normally sufficient for 1-2 years. But the models of forestry plants are long term, only showing the results after a long time. Due to the financial shortage, the reported models, after transferred to the householder, would not be adequately cared, leading to an odd growth or dwindling. Many households wanted to remove the models and replace plants from other projects instead, because they need less investment than for the forestation programs No 327 or No 661. Therefore, the models would be given up right after the forestry extension worker withdrew.

6.3.2. Efficiency of the forestry extension models

The budget for forestry extension is mainly used for breeds and technical supports in building models. Fund for training activities or learning by doing workshops is very limited, accounting for only 2-4%. As a result, it has been difficult to transfer models to the householders. On the other hand, the farmers internalize the models very slowly, they are always afraid that they could not deal with the models, therefore they normally hesitate to apply them on their land. Besides, there have been some inappropriate and unpractical models such as fertilizing intensive cultivated forest, especially for forest stands in high areas. As a result, many good models are impossible to reach the farmers.

The forestry extension models are usually set up in convenient areas. However, such areas are normally decided subjectively by the forestry extension workers. The establishment of many models was not based on the geographical, ecological characteristics (site condition and specific ecology). Therefore, they are not quite suitable to the whole area. Moreover, many householders who are planting trees in a large land area of the state owned plantations really need technical support from the forestry extension workers in order to increase the plant yield, shortening the business cycle, gaining more profits and reducing credit risks. In fact, they did not have forestry extension services due to the untied cooperation between the extension centers and the plantation authority. The extension workers even hesitate to work with the forestry workers. The reason might come from the lower investment portion for forestry extension compared with the programs No 327 or No 661. Other reason is that the forestry workers are not so creative and dynamic in planning production activities because the lands are still controlled by the forest enterprises.

A major part in forestry extension concerning information on markets, prices, consumption of products is still uncontrolled in all the areas visited. Forestry extension centers and stations are mainly focusing on establishing models of new technologies, seeds, breeds and tending techniques. There have not been any models to find markets for products if the farmers agree to apply plantation methods of the extension workers.

6.3.3. Technological transfer and public participation

At the moment, there are three main methods used in the agricultural and forestry extension. The first one is organizing demonstration models, learning by doing workshops to provide visual transfers of new technologies to the farmers. The second one is providing short-term training courses for the farmers. The third one is distributing posters, leaflets...

They would bring about positive results if these methods were implemented properly. In fact, the execution of such methods is more toward to a show. In some areas, participants attending training courses are not target groups. It should be noticed that the knowledge was always transferred after the establishment of the models. The extension workers only focused on building models and less analyze whether they would be suitable to the ecological features or local customs. It also showed a lack of technical support for the farmers in land planning as well as in making business plans, making them unable to decide whether the models would be suitable for their households. The field trip to Đài Tú district, Thái Nguyên province revealed that most of demonstration stations had the same plant structure (crop composition) and geographical characteristics (site condition). The models here were more focused on an equal distribution than a good attention on the ecological conditions and local customs.

The public participation has not been realized properly in terms of developing the public self-controlled spirit. Planning of forestry extension is normally made by the highest level downward in collaboration with heads of villages or respectful persons but still tended to the formalism. Consequently, it fails to mobilize available resources in the household families.

6.3.4. Public awareness and offering policy for forestry extension workers

Most of the families involved in forestry production are living in far and remote areas and having very limited educational level. They more rely and expect from the state subsidiaries. Therefore, they often consider financial contributions for forestry extension models as unexpected affairs. Many households put breeds at the corner and did not plant right after receiving wages and breeds. And they used money for other purposes.
The acceptance of forestry extension models was mainly based on the meaning of the models, therefore with some failed ones, there was no obligation to charge whose responsibilities. This also made the household families to be less responsible in implementing the models.

Besides, in some areas with hilly economic development, local people live and enrich their life with forestry production. They really need information on technical advances for production development but the extension workers do not fully fulfill the task as a bridge between the research institutes (Institute of Forestry Sciences, research centers at the provincial level…) and the farmers. One of the main reasons is a lack of clear policies on benefits between the extension workers and the beneficiaries.

6.3.5. Gender issues in forestry extension

Women and sub-laborers mainly comprise of labor force in forestry production in highland, remote and minority areas. But women are timid and shy by nature. Therefore, the husbands always contact with the extension workers, attending meetings, training courses in the capacity of the family holders. But after that, they do not transfer fully the knowledge or transfer it incorrectly, so the technology is not appropriately applied and problems encountered in production process are not timely reported to the extension workers.

7. RECOMMENDATION

7.1. Promising models of Agriculture and forestry extension

The renovation policy of Vietnamese Government has made great changes for society and economy in the country. In the rural area, family households become autonomous production units with long term and stable land allocation. The question is how to help them to develop sustainable economy on the base of available resources while the cooperatives are on the way of transformation and forest enterprise have been reducing technical support to the family households in the rural especially in the upland areas. Therefore it is necessary to develop a competent agriculture and forestry extension. system from the central to the communal, village levels with suitable forms to provide suitable technical support in the fields of agriculture, forestry and market linkage. On the base of consolidated experience from each community. People and with new technological techniques, scientific research products to support the family households, minority community, especial ethnic minorities living in the remote areas to develop sustainable household economy in line with commercialized production to provide goods to markets basing on sustainable resources utilization and development. The agriculture and forestry extension activities have to be implemented in the principal of starting up and using existing resources in sustainable and effective way avoiding material subsidy to make people more depending, step by step to develop production to improve living standard in a sustainable way.

7.2. Recommendation on Agriculture and forestry extension system

7.2.1. The State agriculture and forestry extension system established is an important step of agriculture and forestry extension, in the short as well as long run, this system will play a key role in agriculture and forestry extension activities in Vietnam, but the system is not completed to create a wide spreading network to meet the people demand, especially forestry extension to serve the implementation of 5 million ha of reforestation program and minority people in the forest areas.

It could be seen at once in the central level, Department of agriculture and forestry extension is not only working with agriculture and forestry extension but also carrying out the task as Forestry development Department and with attached section of forestry extension. Therefore it is proposed to select either one of two alternatives

To bring back forestry extension to Forestry development Department to be closely combined with the direction of 5 million ha of reforestation program. So in the locality the task of forestry extension will have to be put back to the provincial forest development department.

To separate the State management function of present Department of agriculture and forestry extension to another department or establish a new department. Department of agriculture and forestry extension will only work with direction of agriculture and forestry extension work and completing establishment of system from central to district level, in the localities attention will be given to strengthen the group of forestry extension
staff, especially in the mountainous provinces.

For communal level, there must be uniform instruction in the country for construction of communal extension worker groups. There must be policy and criteria for selection of these workers. At least there is one agriculture extension worker in one commune, particularly in the mountainous commune there are two extension workers of which one will be forestry extension worker.

For village level, attention will be given to development of people extension organization. Experience shows that effective extension should require a village extension organization. The reason is that district and communal extension staff an not provide with in situ and on time service for all farmers in the district and village, especially in the low populated mountainous areas. It is more important that these services have to come to the poorest people who have little chance to access with the provincial, district and communal level by many reasons (as they have no money to go far, they have no time to go to commune and district) Therefore the only way is to have farmers to farmers extension in village so it can meet the above demand. But it is impossible to have State budget to provide for village extension worker in the whole country. The extension network has to be established on voluntary basis, in every village there will be farmer who dare to take responsibility to be a group leader. This is potential for development of this network in the long run for economic incentive, it will be solved by income generated from extension service in the locality (such as good seedling production, seed and insecticide supply.) Attention must be given to joint extension with cooperative organizations as the new typed cooperatives will provide input and output services to family households. Development of self – management forms as extension club, village management group …closely linked with interest of participation of the above extension activities.

7.2.2. At present, there are many foreign supported projects and programs working with extension in Vietnam. The strong point of these projects and programs is extension approach and flexible in using financial resources for extension activities but the weak point of these projects and programs is sustainability after projects and programs phasing out as there is no organization continue to take care of extension activities. Therefore it is necessary to integrate projects and programs organizations with the State extension organization in the same locality to train a group of competent agriculture extension staff and on the other hand to develop working order even when the projects and programs phasing out. the experience of integration of extension activities carried by Mountain Rural Development project (under Vietnam – Sweden Mountain Rural Development program (MRDP) of Lao Cai, Tuyen Quang with the existing provincial extension system or extension activities of Thai Nguyen province is good example of effective and sustainable development direction.

In addition, the mass organizations 9 Youth Union, Women union, Farmer Association, Veteran…) at present are also paying attention to agriculture extension activities in order to support and encourage its members to develop production to improve living standard. So the agriculture extension organizations at all levels need to cooperate with these organizations to intensify agriculture extension activities as well as its effectiveness.

7.3. Recommendation to complete the contents of Forestry extension

- Agriculture and Forestry extension was implemented effectively in the past time, bringing many benefits to the farmers. However Agriculture and Forestry extension in the past time is mainly working with transferring of technical advance and production experience to family farmer households.
- For the time being, when Vietnam Agriculture has basically solved food shortage problem, then it is time to change from input material service extension (seed, fertilizer, technology supply..) to farmer demand driven extension, aiming at constantly increasing income, improving living standard for people. Or in other word, in the condition of developing market economy then agriculture extension (as service supplier) can not provide what is available to farmers (as customers ) but have to supply what is needed by the farmers. The farmer demand is very diversified besides seed, technology there are many other things as capital, where and how to sell products, cost and profit analysis, how to develop non farm activities to increase income…
- To satisfy the demand of new way of working, a group of competent agriculture extension staff must be trained. We propose that MARD will draft agriculture extension training strategy to be submitted to Government for approve and issue. In the strategy the two directions need to be mentioned, first one is to train existing group of agriculture extension staff by using resources including State budget for domestic and abroad long and short term training at level of agriculture extension profession, the experts of each subject will be invited such as oc Agriculture household economic management, market analysis and business development in the rural areas. Second one is forming agriculture extension major in the Agriculture. Forestry schools, in training program and objectives is not to train
expert in the field of farming, husbandry, fishery, as at present, but to widen training fields to diversified profession and knowledge and skills relating to agriculture extension methodologies, rural credit, farm and house economic management, market analysis, diversified production...Therefore it is necessary to train agriculture extension staff in the short and long run to meet requirements which are more diversified of agriculture extension work. On the other hand contents of agriculture extension activities need to be strengthened in market information, rural credit, Agriculture and Forestry product processing in household... to fill the gap of present agriculture extension.

- On the linkage of agriculture extension with rural credit, it can be done in two ways: firstly, agriculture extension will sin with the bank to help borrowing households to make profitable production, the bank will pay service fee to agriculture extension staff. Secondly, the Government will establish a agriculture extension fund managed by agriculture extension institutions to give loan to farmers in accordance with agriculture extension instruction. This fund will have impact to delayed capital granting comparing with season of Agriculture production annually. To do this work, the level of agriculture extension staff has to be upgraded.

- On the linkage of agriculture extension with research, it is proposed to study the organization of agriculture extension in South Korea. There is only one basic research institution or strategic research is belonging to Government or Ministry, the remaining applied research institutions are under agriculture extension organs at all level. So the research requests are put by agriculture extension, it is more closer to reality and quickly solved. At present some provinces as Thai Nguyen, Ho Chi Minh City, Nghe An, Quang Ngai the research centers are inside agriculture extension centers the Department of agriculture and forestry extension needs to sum up this model.

- Agriculture extension information needs to be expanded in more forms, focusing on service of farmers produce disposal (for example: to open agriculture extension advertisement in radio and television free of charge or low cost to advertise products to sell and to buy).

7.4. Recommendation on methodology

With agriculture and forestry extension oriented programs. the State agriculture extension institutions are usually limited in agriculture extension financial standard. In the agriculture extension planning, it is mainly done by top down approach and in implementation of plan the agriculture extension staff is often selecting the rich households who know how to do or at least who are eager to do to accomplish the agriculture extension programs... Therefore the State agriculture extension system needs to try and expand to other approaches in order to meet the demand of farmers on the main basis of self satisfaction.

7.5. Recommendations on agriculture extension policy

- To develop communal agriculture extension worker network by setting up a higher payment for extension worker. It's necessary to have at least one extension worker per commune and two extension workers in the mountainous commune.
- There should be regular forestry extension staff in the State agriculture extension organization from central to district level in the mountainous provinces.
- It's recommended increasing salary and allowance for staff working in remote area.
- It should have a policy to encourage women to involve in forestry extension, for example, having a higher ratio of women in extension training courses.