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## Technological and Institutional Innovations for Sustainable Rural Development

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### Challenges and Policy Options for Sustainable Rural Development – Future Development of a Participatory Extension Approach in Myanmar

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#### Abstract

*The participatory extension approach in Myanmar is in the very preliminary stages of the development by international NGOs and United Nations organizations. Although its present status in Myanmar is very small, a growing interest has been noticed among farmers, extension agents, NGOs and some quarters of the government. NGOs are putting efforts into the development of participatory extension approaches in many developing countries. The main objectives of this paper are 1) exploring the organization of current agricultural extension agents and 2) suggesting a suitable network among governmental and non-governmental organizations for the future development of a participatory extension approach in the Myanmar Agriculture Service. This paper comes from one part of the Authors' PhD research that was conducted from January to April 2001 in Myanmar. The perceptions of agents regarding the practising extension approaches, extension methods and awareness and attitudes of agents towards the participatory extension approach were identified through personal interviews with 60 extension agents. The research findings indicated that the current extension approaches practised in Myanmar are the selective concentrative strategy approach and the training and visit approach. Both of these are top-down approaches and the major aim is to transfer the technology. The organizational framework did not provide for decision-making from below and consequently, left little or no room for participation of all members of the extension system. Approximately 83 percent of the respondents have an awareness of the new participatory extension approach and they have acquired this knowledge mainly from UNDP and NGOs projects in Myanmar. Some respondents have been involved in participatory workshops provided by the UNDP and NGOs. Responses of extension agents showed that they are very interested to implement the participatory approach in agricultural extension services. For the sustainable agriculture and rural development in Myanmar, agricultural extension services will play in the most important role. In order to promote the development of agricultural extension services in Myanmar, the effective institutional linkages between the governmental and non-governmental organizations will be required. With this in mind a new forum for participatory extension movement in Myanmar is proposed in this paper.*

#### Introduction and Theoretical Framework

The agricultural extension service in Myanmar was started in 1927 by the Department of Agriculture. The traditional extension approach has been practiced since 1927, the training and visit approach since 1976 and the selective concentrative strategy approach since 1978. The participatory extension approach in Myanmar is in the very preliminary stages of the development by international NGOs and United Nations organizations. Although its present status in Myanmar is very small, a growing interest has been noticed among farmers, extension agents, NGOs and some quarters of the government.

UNDP have implemented a number of human development initiative and extension projects for the environmentally sustainable food security and micro-income opportunities in the Dry zone, Shan state and Ayeyarwady Delta in Myanmar. These projects emphasized beneficiary participation and empowerment; decentralization and deregulation of decision making to the target group; capacity building of community based organizations; a needs oriented delivery system and creation of an enabling environment (UNDP 1998). The following human development initiative projects are being implemented by United Nations organizations in cooperation with Myanmar agriculture service, Forest department and Fisheries department. These are: primary health care; community water supply and sanitation; HIV/AIDS prevention and care; primary education; micro finance; human development initiative support projects; food security in Dry zone, Delta and southern Shan state; community development in remote townships and preparatory assistance for integrated program for northern Rakhine state (UNDP 2000b).

During the year 2000-2001, the FAO/UNDP implemented a number of projects in Myanmar by cooperation of Myanmar agriculture service. These are: human development initiative and extension phase III in Dry zone, Ayeyarwady Delta and Shan state; rapid propagation of improved root crop planting materials; fruits and vegetables gardening and agriculture and natural resources development program in northern Rakhine state. One of international NGO, Group of research and technological exchange implemented the following projects, such as farming system research and extension in the Chin state and rural credit scheme in the Chin and Shan states. The Japanese government funded the pilot project on capacity building and empowerment of women self-help groups through micro-credit and social mobilization. This is being implemented by the collaboration of Ministry of Agriculture and Irrigation (MOAI) and the international development organization, the Centre on Integrated Rural Development for Asia and the Pacific. In addition, the Japanese government funded and implemented the technical cooperation program of Seed Bank.

UNDP implemented all these projects with a bottom up approach and focused on the sustainable agriculture and rural development in Myanmar. In addition, the UNDP provided training in people-oriented extension, needs assessment, data collection, training in planning, implementing, monitoring and evaluation of the projects activities in a participatory manner for their own staff, government extension staff and technical officers working in the project areas. The sharing of experiences among these projects has been extremely valuable. The informal networking and joint lobbying resulted in learning from each other's experiences, joint papers and workshops.

### **Purpose and Objectives of the Paper**

The paper formed part of a wider research project "Guidelines for implementation of participatory extension approach in Myanmar based on an empirical study on training needs of extension agents". The purpose of this paper was to explore how the agricultural extension service in Myanmar could be improved by developing a participatory extension approach in the Myanmar Agriculture Service. The specific objectives of this paper were: 1) exploring the organization of current agricultural extension agents and 2) suggesting a suitable network among governmental and non-governmental organizations for the future development of a participatory extension approach in the Myanmar Agriculture Service.

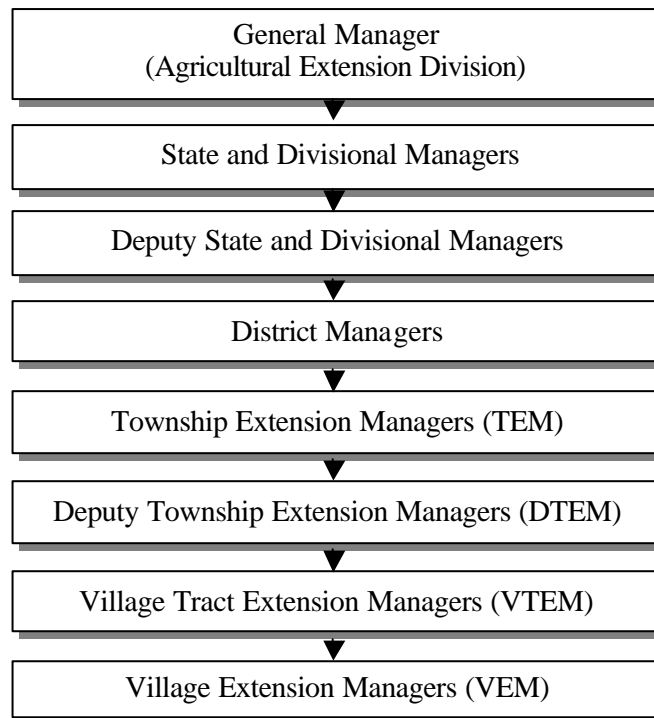
### **Methods and Data Sources**

This paper is based on field research conducted from January to April 2001 in Myanmar. The field survey was done in seven regions: Ayeyarwady, Yangon, Bago, Magway, Mandalay, Sagaing Divisions and southern Shan State of Myanmar. These regions are agro-ecologically different. The perceptions of agents regarding the practising extension approaches and extension methods and their awareness and attitudes towards the participatory extension approach were identified through personal interviews with 60 extension agents from the selected seven regions.

### **The Organization of Agricultural Extension Agents in Myanmar**

Among the nine divisions of the Myanmar Agriculture Service (MAS), the Agricultural extension division absorbs the largest portion of the total staff of the MAS, having 11081 staff members. Under the control of the General Manager, the agricultural extension division (AED) is organized on a state/divisional basis,

with offices at the district and township levels. To fulfil the main functions of the AED throughout the country, extension agents have been organized as shown in the Figure 1.



**Figure 1: Organizational Structure of the Agricultural Extension Division**

A village extension manager is in charge of a few village tracts or villages with 1200-2400 hectares of crop cultivated land depending upon the locality and state of communication. A village tract extension manager supervises the work of about 10 village extension managers, each of whom work directly with about 1000 farmers. The role of VTEM and VEM is the most pivotal in transferring the new technologies, as they are in direct contact with farmers (MOAI 1999).

The TEM, DTEM, VTEM and VEM have to meet each other every 15 days at the township agricultural education camps where they discuss their performance of extension activities, collected farmers’ agricultural problems and recommended solutions to these problems. The township extension managers have to report monthly all agricultural information collected from their townships to the respective district managers. Once, the district managers have to report the information to the respective state and divisional managers who are assisted by the deputy state and divisional managers. The state and divisional managers, deputy state and divisional managers and district managers have to attend the monthly meeting at headquarter of AED and report the respective state and divisional information to the General Manager of the AED. This meeting evaluate the implemented agricultural extension programs and make the planning and decision for the new extension programs (MOAI 1999; MAS 2001).

**Key Findings and Discussion**

Opinions of the respondents indicated the practices of different extension approaches in Myanmar were about 17% by the traditional approach, 42% by the selective concentrative strategy (SCS) and 41% by the training and visit (T&V) approach in past 10 years (1990-2000). At the present time, however, there is no more practice of the traditional approach. There is more practice of selective concentrative strategy approach (70%) than the practice of the training and visit approach (30%). This indicated that SCS approach has been practised widely throughout the country. Both of the SCS and T&V approaches are top-down approaches and the major aim is to transfer the technology.

Extension methods are tools of the extension agents. All the possible individual and group extension methods were used in Myanmar. However, many extension methods were not successful as there were many constraints and limitations in the agricultural extension service. After discussing with experts and

extension personnel, eight extension methods were selected to identify in this study. The respondents were asked to express their practice of the different extension methods by describing the frequency per month. The results from analysis are presented in Table 1.

**Table 1: Opinions of respondents on their practising extension methods**

Methods	Number of respondents (N=60)			Mean
	Frequency per month			
	1	2	3	
1. Farm and home visits	5	42	13	2.13
2. Group meeting	30	28	2	1.53
3. Field demonstrations	45	15	0	1.25
4. Methods/results demonstrations	48	12	0	1.20
5. Conducting training for farmers	54	6	0	1.10
6. Farmers' visits to office	0	0	0	0.00
7. Mass Education	0	0	0	0.00
8. Agricultural shows	0	0	0	0.00

**Farm and home visits:** This is an individual extension method, which the agent discusses with an individual farmer on the farm or at their home. Seventy percent of the respondents indicated that they did farm and home visits twice per month, 22% of the respondents said three times per month and the remaining 8% responded only once per month.

**Group meeting:** This is one of the group extension methods like discussion or teaching sessions. This method is used once per month by 50% of the respondents, twice per month by 47% of the respondents and three times per month by the remaining 3% of the respondents.

**Field demonstrations:** This is also called “Field days”, or “Village days” when there are visits to a group of farmers on outlying farms, to a research or demonstration field. This method is applied only once per month by 75% of the respondents and twice per month by 25% of the respondents.

**Methods/results demonstrations:** Extension agents provided field demonstrations about the production techniques, new varieties, new implements and the results demonstrations of the successful production of the improved new rice varieties. Eighty percent of the respondents indicated that they did methods and results demonstrations once per month and the remaining 20% said that twice per month.

**Conducting training:** Extension agents have conducted one day or two days training with farmers about the seasonal crop production, insect and disease protection, systematic fertilizer utilization, weed control and management and cultivating practices. Ninety percent of the respondents indicated that they conducted training for farmers once per month and 10% said twice per month.

**Farmers' visits to office:** Normally there is no farmers' visit to the extension education office. Most of the farmers live too far from the township extension education office. Farmers come to the office only to purchase fertilizer, improved seeds, pesticides and insecticides. At the same time, farmers discuss their field problems with extension managers as well as farmers receive new agricultural information from the township managers.

**Mass education:** The AED has organized to putting up posters (high yielding crop production) along the main roads where farmers can easily see them, and broadcasting the information (weather, pest control) via the television and radio in the agricultural section every evening. Respondents indicated that they distribute the agricultural newsletters and pamphlets to farmers during the seasonal crop production periods. These include improved crop varieties, crop production technologies, effective microbe utilization, etc.

**Agricultural shows:** There is only one agricultural show per year organized by the Ministry of Agriculture and Irrigation at the FAO Day (16<sup>th</sup> October). The rural population is invited to a show where farmers' quality products are shown, farming implements are demonstrated, the competition of the best quality farm products and the winning farmers are awarded prizes.

It is obvious that an individual extension method, farm and home visits, was the most popular in Myanmar and extension agents used this method average two times per month. However, the use of group extension methods, such as group meetings, field demonstrations, methods/results demonstrations and farmers' training were very poor because there was a lack of suitable supports and facilities for agents to use group extension methods. As the extension methods are tools of extension agents, the AED should provide the required supports for agents to practice more individual extension methods as well as group extension methods.

Awareness and Attitudes of Extension Agents towards PEA

In order to examine the awareness of extension agents concerning the participatory extension approach, each agent was asked the following questions: Do you have some knowledge concerning the participatory extension approach? If yes, where did you acquire this knowledge? Out of a total 60 interviewed extension agents, 50 respondents answered “Yes” to the first question and the other 10 respondents answered “No”. The following table 2 shows the answers of 50 respondents about the different source of the PEA knowledge.

**Table 2: Source of PEA knowledge for extension agents**

Sources	Number of Responses in Percent
1. Central Agricultural Research and Training Centre	10%
2. Yezin Agricultural University	6%
3. UNDP projects in Myanmar	40%
4. NGOs projects in Myanmar	30%
5. Literature Review	14%

Only 10% of the respondents replied that they heard something about the participatory extension approach from CARTC. Although CARTC provides a number of in-service training for extension agents, there is still no course about participatory extension in its training program. Six percent of the respondents commented that they heard something about the PEA from their colleagues from the Yezin Agricultural University who had attended PEA training course abroad. Although there was no relationship between the agricultural extension service and the Agricultural University through training or research, some agents have personal contact with lecturers and professors from the University. However, there is still no course about the PEA in the curriculum of the Agricultural University.

Responses from 40% of the respondents indicated that they acquired information about participatory extension from UNDP projects in Myanmar. Agents especially from the central dry zone areas, the Ayeyarwady delta and the southern Shan state answered that they have been attended some participatory training provided by UNDP in their areas. Thirty percent of the respondents replied that their awareness of the PEA came from NGOs projects in Myanmar. Most of extension agents have some knowledge concerning the PEA because there are some participatory projects and researches in their areas being implemented by international non-governmental organizations. Some agents have been attended participatory training provided by NGOs. Only 14% of the respondents answered that they acquired some PEA knowledge by reading the related literature about the experience of other developing countries.

It is perceived that UNDP and NGO projects in Myanmar are the main source of the participatory extension knowledge for the extension agents.

In order to know the attitudes of extension agents to implement the PEA in Myanmar, all the interviewed agents were asked the following questions:

1. Do you have some idea of how to implement the PEA in Myanmar?
2. If yes, what kind of idea do you have?
3. Are you afraid of implementing the PEA in Myanmar?

All respondents answered, “Yes” to the first question but they all had different ideas for the second question.

One respondent from the Yangon division said, “I attended four months training in participating of farmers for sustainable rural development provided by the Japanese government. I saw farmers who are very active to involve in the implementing of extension programs and to conduct research in their fields because they have a chance to participate in the problem identification and decision-making processes. The practising extension approach in Japan is the bottom-up system and focuses on the empowerment of local farmers. I think that it is obvious need to change our existing top-down extension approach and to find a suitable extension approach for our country situations” (Extension Agent 7).

One respondent from the Ayeyarwady delta area expressed his opinions, “I participated in some activities of UNDP and NGOs projects in our areas and I saw the advantages of local farmers participating in situation analysis and decision-making processes of their project activities. Although these are small-scale projects, the effective results, experience and knowledge on this small scale disseminate and transfer to neighbouring villages and farmers very quickly. The way of information transferring from farmer to farmer would be more effective” (Extension Agent 15).

One respondent (village tract extension manager) from Bago division commented, “I do not know exactly the participatory extension approach. I just heard about PRA and RRA from my colleagues who attended participatory training that are provided by UNDP. For implementation of a new participatory extension approach, I think that extension agents firstly require training in concepts and philosophy of participatory extension, participatory methods, etc.” ((Extension Agent 25).

One respondent from the Magway division (central dry zone area) said, “I attended a participatory training workshop provided by United Nations organizations in our areas. According to this experience, I prefer to practice the participatory tools in our current extension programs and activities” (Extension Agent 34).

Furthermore, one respondent from the Mandalay division said, “During last monsoon, we advised farmers to grow a hybrid rice variety that introduced from China as an extension activity of the Ministry of Agriculture and Irrigation. However, the rice quality became very poor and was impossible to export because this variety was not suitable with Myanmar climates. Consequently, there was very high support of rice in the country and the price was decreased. Nowadays, most of farmers in our areas do not believe our advices and they are reluctant to practice any new technology” (Extension Agent 45).

One female respondent from the Sagaing division said “I participated three times training workshops that organized by UNDP in our townships. I saw the practices of participatory extension methods from some developing countries through video. I really want to implement the new participatory approach in our practising top-down extension approaches” (Extension Agent 52).

All the respondents answered “No” to the third question “Are you afraid of implementing the PEA in Myanmar?”

It is obvious that almost all of the extension agents in Myanmar are very interested to implement the new participatory extension approach because they have faced many problems in their daily extension work under existing top-down extension approaches. Extension agents prefer to move the new paradigm for the future agricultural extension and development in Myanmar.

### **Educational Importance**

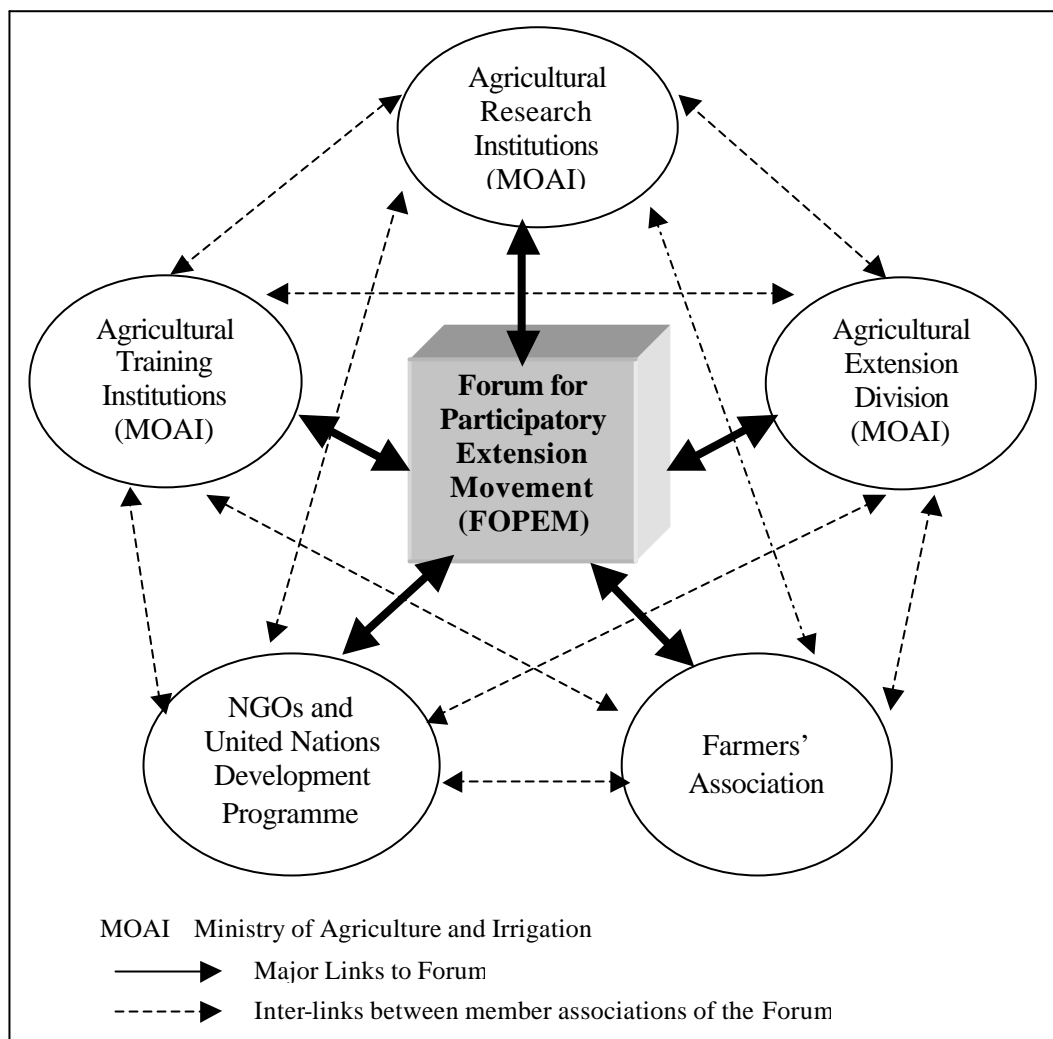
As the country has been under centralized administration for a long time, there are no community-based organizations in Myanmar. Agricultural extension services in Myanmar were centrally controlled, bureaucratically oriented, and directed by professional staff. Farmers and lower level extension staff were not perceived as responsible players in this system but rather as executors of decisions taken “at the top”. The organizational framework did not provide for decision-making from below and, consequently, left little or no room for participation of all members of the extension system.

Both of the practising extension approaches (SCS and T&V) are top-down approaches and the major aim is to transfer the technology. Farmers have been considered as the main constraint to development rather than the potential initiators of a solution. Extension agents as well as farmers have thus been passive recipients of technological recipes in a top-down flow of information. These technologies have often only addressed the symptoms of a problem rather than the cause of it. This failed to address farmers’ needs and

constraints, which are interlinked with the social set-up and its implications. These top-down approaches create a rigid hierarchy, which discourages the feedback of information.

Nowadays, a growing number of extension agents and subject matter specialists in Myanmar prefer to move the new paradigm for future agricultural extension development. The opportunity for the development of the extension network between governmental and non-governmental organizations in Myanmar would provide a useful basis for further closer contacts and joint action activities. Support for the development of an extension network like the participatory extension approach (PEA) would provide much needed contact between extension agents throughout the country and allow another revenue for the flow of information and ideas based on local experiences. By introducing a participative working style into the four areas of problem identification, decision-making, implementation, monitoring and evaluation of extension activities, extension managers would have an example of how to interact with their subordinates and farmers groups. Following this pattern more participation would be encouraged throughout all the extension activities.

In order to promote the development of agricultural extension services in Myanmar, the effective institutional linkages between the governmental and non-governmental organizations will be required. With this in mind an institutional network that can serve as a linkage system amongst the government organizations (extension, research and training institutions), international NGOs and UNDP in Myanmar and farmers' association is proposed as shown in Figure 2.



**Figure 2: The proposed institutional model for implementation of PEA in Myanmar**

The major aim of this model is to make a participatory extension movement in Myanmar Agriculture Service. However, at the initial stage, the Agricultural extension division would need a lot of support and co-operation from both the government and non-government sectors. International NGOs and UNDP in

Myanmar would help the farmers to develop their own organizations and thus the proposed model would be developed by joining and by active participation of farmers' association, NGOs and the concerned development institutions.

There are six major components in this suggested model. These are:

1. Forum for participatory extension movement (FOPEM),
2. Farmers' association,
3. NGOs and UNDP,
4. Agricultural extension division,
5. Agricultural research institutions, and
6. Agricultural training institutions.

A forum for participatory extension movement and farmers' association do not exist so far and needs to be set up. All these member associations of the proposed model should participate actively and equally in extension movement.

**Forum for participatory extension movement (FOPEM):** The forum for participatory extension movement is the central focus of the proposed model for the implementation and development of participatory extension in Myanmar, and hence would be the centre of all major development organizations and institutions. This forum would be the most important outfit of the proposed model. It would be of the utmost importance to develop a networking organization, which would co-ordinate the role of all member organizations. Furthermore, it would act as a vital force for the participatory extension movement in the country.

Some important functions of the FOPEM in proposed model would be as follows:

- To develop common strategies for implementation of PEA in Myanmar
- To set up common guidelines or regulations for implementation of a participatory extension approach
- To inspect and co-ordinate the operation of all member associations

**Farmers' association:** The most important actor for the agricultural and rural development would be organizing the farmers' association and the participation of farmers in all possible levels. Without being organized, the farmers would not be able to dominate in their problem identification, decision-making and program implementation processes. It is impossible to expect a successful introduction and implementation of a participatory extension approach without active participation of farmers. NGOs can play a vital role to develop such farmers' associations.

Functions of the farmers' association would be as follows:

- Participating in the proposed FOPEM,
- Obtaining benefits for farmers by communicating with authorities,
- Introducing locally organized farmers' groups
- Initiating and organizing farmers' experimentation
- Making regular contact with all member associations of the FOPEM

**NGOs and UNDP:** For implementation of a new participatory extension approach in Myanmar, the financial as well as the technical support from international NGOs and UNDP would play a major role. The UNDP should work on more participatory projects in collaboration with government extension agencies.

Functions of NGOs and UNDP in proposed model would be as follows:

- Selecting representatives to involve in the proposed FOPEM
- Working in collaboration with the proposed FOPEM



- Making regular contact with all member associations of the FOPEM
- Helping farmers' groups to become self-reliant and independent associations
- Providing participatory training for trainers (teachers from the agricultural University and Institutes, trainers/managers from CARTC, and subject matter specialists and researchers from CARI) as well as for extension agents and farmers

**Agricultural extension division (AED):** The Agricultural extension division is the largest public sector extension agency in Myanmar and it is responsible for all aspects of agricultural extension services. It has a nationwide network for carrying out extension activities in the grassroots level. A good number of subject matter specialists, extension managers and field level extension agents are working under the auspices of the AED.

The main functions of AED in proposed model would be as follows:

- Making regular contact with all member associations of the FOPEM
- Working in collaboration with the proposed FOPEM
- Selecting the extension personnel to involve in the proposed FOPEM
- Helping in electing of farmers for farmers' association

**Agricultural research institutions:** There are a number of agricultural research institutions and farms under the Myanma agriculture service. These are the Central Agriculture Research Institute; the Vegetables and Fruits Research and Development Centre; 19 research stations; 35 seed farms; 56 horticulture farms and 15 agricultural farms throughout the country. The CARI conducts the basic research activities concerning rice and other cereals, pulses, oilseed crops, fibre crops, sugar crops, horticulture crops, cropping systems, soil and water management, plant protection and seed technology. The new technologies and innovation developed by the CARI are transferred to the farmers via extension agents. The Agricultural extension division plans and implements these technologies and innovations as extension programs (MOAI 2000, p.10-15 and secondary data collected from MAS central office). The CARI is proposed to involve in extension movement.

Some important functions of CARI in proposed model would be as follows:

- Working in collaboration with the proposed FOPEM
- Making regular contact with all member associations of the FOPEM
- Selecting subject matter specialists and researchers to involve in the proposed FOPEM
- Initiating participatory technology and innovation development
- Undertaking research activities on various aspects of participatory approach

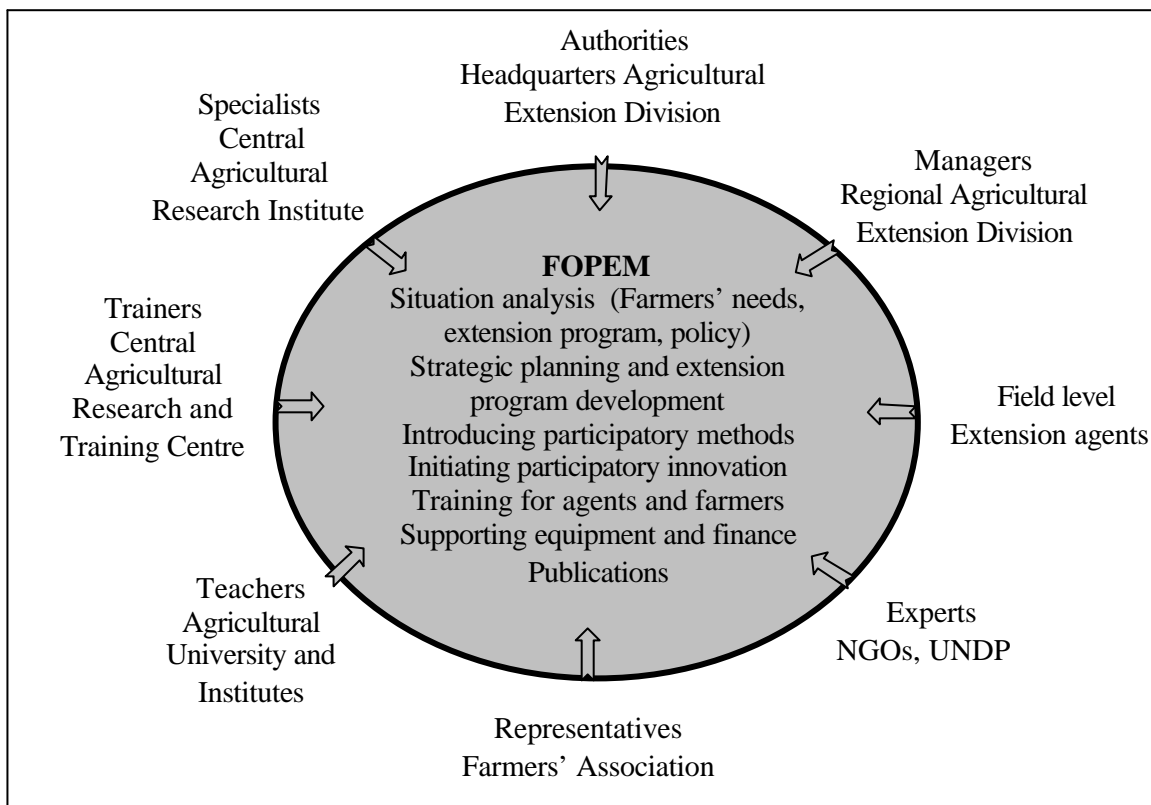
**Agricultural training institutions:** The educational training institutions, such as the Yezin Agricultural University, agricultural Institutes and in-service training institution, the Central Agricultural Research and Training Centre have potential to play a vital role in the development of knowledge concerning participatory extension approach and other issues of sustainable agriculture. Many of the students that graduate from the Agricultural University and Institutes become extension agents employed by Myanma agriculture service.

Important functions of training institutions would be as follows:

- Making regular contact with all member associations of the FOPEM
- Selecting representatives to involve in the proposed FOPEM
- Elaborating the participatory curriculum in collaboration with the proposed FOPEM
- Introducing the new courses concerning participatory extension approach to their existing training program
- Conducting research activities through participatory methods

It is also important to suggest an organizational structure covering responsibilities of the proposed Forum for the participatory extension movement in Myanmar. Financial requirements of the proposed FOPEM would be met mainly by funds contributed by member associations. It is assumed that member associations would help financially from the beginning, because financial independence is a major precondition to work as a self-reliant organization. However, it may be unrealistic to say that the organization would be self-sufficient from the beginning stage of development. Perhaps it would need financial help from outside, government organizations, NGOs and the donor agencies are assumed to be major contributors in this stage.

The proposed FOPEM would be constituted with 25-30 people from all member associations. They would be representatives from farmers' association, experts from NGOs and UNDP, trainers/managers from central agricultural research and training centre, teachers from the agricultural University and Institutes, subject matter specialists from central agricultural research Institute, authorities of AED headquarters (state and divisional managers), extension managers from regional level and field extension agents. Representatives from all member associations would be actively and equally involved in performing the functions of the proposed forum. An organizational structure of the proposed forum is suggested as shown in Figure 3.



**Figure 3: Organizational structure of the proposed FOPEM**

The proposed FOPEM would serve as a coordinating body as well as an implementing body for the participatory extension movement. The forum would hold its general meetings at certain times of the year. It would take all vital decisions for running the participatory extension movement and execute the decisions. It would carry out vital responsibilities to organize a nationwide movement for participatory extension. A number of main functions of the forum are as follows:

**Situation analysis:** A participatory extension approach for Myanmar should be based upon a situation analysis of the existing extension system. Farmers' needs, strengths, weaknesses, opportunities and threats of the current extension program and policies would be analysed.

**Strategic planning:** One of the most important functions of the FOPEM would be to plan appropriate strategies and formulate policies for the desirable propagation of the participatory extension movement in Myanmar. It would decide on all kinds of programs and plans with a view to both short and long-term

objectives. The proposed FOPEM, therefore, should test a number of participatory methods of particular relevance to the situation of Myanmar and identify the most appropriate methods for future extension development.

**Development of extension program:** The extension program would be planned and developed by equal and active participation of all member associations of the FOPEM. Knowledge generation would be farmer-oriented and these would make conventional research more meaningful and allow the use of unorthodox (“farmer first”) approaches. There would be dialogue-oriented extension work, where the extension worker acts as the facilitator rather than the teacher. Increasing emphasis should be given to the identification of farmers’ needs at the grassroots level, bottom up planning and development of the extension programs. The set of extension methods to be used would include group extension, methods demonstrations, field days, village workshops, individual field visits and farmer-to-farmer visits.

**Introducing the participatory extension methods:** As a first step to implementing the participatory extension approach, a weeklong training workshop on methods of participatory extension should be provided. The participants would be township and village levels extension agents and representatives from farmers’ association. The main objectives would be:

- To introduce some selected participatory extension methods into participants;
- To create understanding and motivation for the ideas of PEA; and
- To give examples on how to conduct training workshops in a participatory way.

**Initiating participatory innovation development:** The concept for participatory innovation development and extension is based on dialogical communication, farmer experimentation and the strengthening of self-organizational capacities of rural communities. Encouragement of active participation and dialogue as partners among all players on the local level, for example, farmers and their institutions, extension agents and researchers are the main stay (HAGMANN et al., 1996, p.16).

The main objective of the participatory extension is empowering the local people. Thus research needs to be undertaken in more participatory ways to become more effective in empowering the local people. To meet these challenges, the proposed FOPEM needs to apply a more farmers-oriented, problem-solving approach throughout the agricultural research system. This approach would not be limited to a particular kind of technology or a particular type of agricultural zone. Innovation development would be based on farmers’ experimentation. Farmers would be encouraged to become involved in identification of their problems, to increase their ability to develop solutions appropriate to their specific ecological, economical and socio-cultural conditions and circumstances and experiment with ideas and techniques emanating from their own source of knowledge.

It is assumed that strengthening of local institutions, together with an increasing confidence through experimentation, would create an atmosphere conducive to sharing of experiences, innovations and knowledge among farmers and leads also to an effective farmer-to-farmer extension.

**Providing the extension training:** At the beginning stage for implementation of a participatory extension approach in Myanmar, representatives from member associations of FOPEM will need training in principles and concepts of PEA. Experts from NGOs and UNDP in Myanmar would provide such training because they have already experience about participatory extension approaches. They would provide firstly participatory training for trainers such as teachers from YAU and SAI, trainers/managers from CARTC, and subject matter specialists from CARI. Once again, CARTC would provide participatory training for a majority of extension agents where the teachers from YAU and subject matter specialists from CARI should be invited to facilitate such training. Furthermore, NGOs and UNDP would provide participatory training directly to agents.

In addition, the agricultural University and Institutes would introduce course about the participatory extension approaches to their existing curriculum of the agricultural training program for graduates and diploma courses respectively. CARTC and CARI would also introduce PEA concepts to their in-service training program for field extension agents. The training manuals for extension agents, farmers’ association and other interested member institutions would be provided by the FOPEM.

It is assumed that training would support the introduction of a participatory approach in two ways. It is instrumental for injecting new ideas into the service. At the same time, the use of participatory training methods would enhance understanding and improve personal qualities such as creativity, independence, and self-esteem.

**Publications on participatory extension:** Literature on participatory extension is, at present, very scarce in Myanmar. The proposed FOPEM would take responsibility to initiate necessary steps to fulfil the need of publications on participatory extension. In addition, the Agricultural Information Service of MOAI would assist the FOPEM to publish and distribute the printed materials concerning participatory extension for the extension agents, farmers and other interested institutions.

**Supporting the equipment and finances:** For the area of equipment and financing, conditions necessary to introduce and consolidate the new approach should be outlined concerning materials, transport, accommodation, salaries and allowances for extension agents. Extension has an important role to play in linking the farmer with supporting services. A strong point, therefore, needs to be made for creating the proper working conditions for extension agents. They are the direct link with the majority of farmers and would put participatory extension into action.

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