Searching Institutional Linkages for Implementation of a Participatory Extension Approach in Myanmar

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Abstract

The root of the problem lies in the fact that, traditionally, 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 actors 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. Furthermore, training of extension personnel has been insufficient in the past. Concentrating on technical aspects, it has not provided extension agents with the necessary communication skills and methods that allow dialogue-oriented advisory work. In promoting development of agricultural extension services, the importance of institutional linkage between the rural community and the development agents should be considered. With this in mind, an institutional framework that can serve as linkage system between the government organizations, non-governmental organizations, and farmers’ associations is proposed. This paper comes out one part of one author’s PhD research that was conducted from January to April 2001 in Myanmar. The main purposes of this paper are 1) describing the technology/innovation development and dissemination in Myanmar, 2) identifying the problems facing by current extension service, and 3) suggesting an appropriate institutional framework for the implementation of a participatory extension approach in Myanmar. Based on research findings through personal interviews and questionnaires with 130 extension agents, there is an obvious need to rethink the extension system in Myanmar to develop more effective approaches.
Introduction

Myanmar is an agriculturally based country and the agriculture sector is the backbone of its economy. The agriculture sector contributes 34% of GDP, 23% of total export earnings, and employs 63% of the labour force. The Ministry of Agriculture and Irrigation (MOAI) is well set up with 14 departments so as to develop the sector successfully and systematically. Myanmar Agriculture Service (MAS) is one of the departments of MOAI and is composed of 9 divisions. Agricultural Extension Division (AED) is one of the divisions of MAS and absorbs a large portion of total strength of MAS, having 11,081 staff. The general manager of AED is assisted by state and divisional managers (deputy general managers). AED has two main functions of transferring the appropriate and adaptable agriculture technologies to farmers and collecting the information on field problems encountered by farmers and finding solutions for these problems.

The transmission mechanism of innovations takes place mainly through the extension division of the MAS. Under the control of the general manager, the agricultural extension division (AED) is organized on a state/divisional basis, with offices at the townships, village tracts, and village levels. To fulfil the main functions of AED throughout the country, the extension agents have been organized from state and divisional level to the township and township to the village level. Field supervising staffs are the village extension managers, who are in charge of a village with 1,200-2,400 hectares of cultivated land, depending on the locality and state of communication. A village tract extension manager supervises the work of 10 village extension managers, each of whom work directly with about 1,000 farmers. The role of village extension manager is the most pivotal in transferring the new technologies, as they are the link with the grassroots level.

The main duties and responsibilities of extension agents (from township to village extension managers) are setting up and managing demonstration plots and trials; encouraging advanced farmers to inspect such plots and trials; finding out agricultural issues and problems in the local community area; and reporting to district officer on problems, crop harvests and other required data. The village extension managers recruited annually were recent graduates from the agricultural university and some completed three-year agricultural training courses at the state agricultural institutes. The Central Agricultural Research and Training Centre (CARTC) provides in-service training for extension agents to improve their quality in knowledge and skills. These training institutions have potential to play a vital role in the development of agricultural knowledge in Myanmar.

Objective of the Paper

The overall objective of this paper is to explore how the agriculture sector could be improved in Myanmar by implementing the new Participatory Extension Approach in the agricultural extension service. The specific objectives of this paper are as follows:

1. to describe the technology/innovation development and dissemination in Myanmar
2. to identify the major problems facing by current agricultural extension service
3. to suggest the suitable institutional framework between the government organizations and non-governmental organizations for the implementation of a participatory extension approach in Myanmar.
Agricultural Knowledge and Information Systems in Myanmar

Information flow to farmers: The sources of agricultural information for farmers are daily newspaper, weekly agricultural newsletter, and mass media information. **Daily newspaper:** the weather news, cultivating methods and cropping systems for different seasonal crops were being described as one part of the daily newspaper. **Weekly agricultural newsletter:** this newsletter is started since 1993 and produced by the agricultural information service of department of agricultural planning. The letter is provided in Myanmar version and contains the information about marketing and current price for different crops in domestic market as well as in export market, different cropping systems, and the success of implementation of modern technology. Every week 6,000-7000 newsletter are being published and diffused to extension agents and farmers. Extension agents working in some remote areas need to explain this newsletter to farmers in respective ethnic language. **Mass media information:** providing special programme about agricultural information in daily television programme (about 30 minutes), radio broadcasting (information about 10 impact points for high yielding production for monsoon rice, current weather news, etc.) and distribution of pamphlets and leaflets, poster erecting along the main road are being arranged.

Technology/Innovation development and dissemination: The “transfer of technology” (TOT) approach has been the prevalent practice for developing and spreading innovations in Myanmar. It is based on the assumption that a transfer of technology and knowledge from scientists to farmers will trigger development. Applied to agriculture, this approach assumes that people and institutions who have this modern knowledge can solve farmer’s problems. Farmers have often been considered as the main constraint to development rather than the potential initiators of a solution. Through this approach it has been the researcher’s task to identify, analyse and solve farmers’ technical problems. Solutions have normally been developed at research stations. The results have been transferred as messages to farmers via the extension worker, who is the link between researchers and farmers. His or her role has been to assist farmers in putting the ready-made technology into practice (see Figure 1).

![Figure 1. Transfer of agricultural technology and innovation to farmers in Myanmar](image-url)
Farmers may have been persuaded through incentives or forced by authoritarian extension agents to adopt new practices or innovations. 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 root cause of it. They have failed to address farmers’ needs and constraints, which are interlinked with the social set-up and its implications. This top-down approach creates a rigid hierarchy, which discourages the feedback of information. Researchers work independently of farmers and extension agents, resulting in a poor understanding of farmers and opportunities and constraints of they face. The transfer approach is fragmented, both institutionally and in terms of disciplines. Research concentrates on technology and researchers and extension agents are seen as technical agents.

The role of extension agents is to teach and demonstrate to innovative farmers how to use new technologies. Once innovative farmers have adopted the new technologies, it is assumed that other laggards or follower farmers will copy them and the technology will diffuse to the majority of farmers. In practice, this assumption often proves invalid because in most cases, the laggards are jealous of the more advanced people who are then victimised, rather than copied. The main results of TOT approach to innovation development and diffusion are as follows:

1. The adoption rates of technologies remain low in most cases, except in cases where these technologies were implemented with coercion (triple rice growing throughout the year, double rice growing during monsoon season). In this case, however, the effectiveness of these technologies often remained low and the success was not sustainable.

2. Social, cultural, organizational and power issues at community level are neglected.

3. Local people’s vast knowledge is not recognized or valid. This discourages rural people and reduces the contribution to their own development, as they feel inferior.

Given its failure, there is an obvious need to re-think this system to develop more effective approaches.

The shift in emphasis in extension from a technology transfer to a more facilitative participatory approach, has, particularly where extension is focused on communities rather than on individuals, implications as far as institutional structures are concerned (DÜVEL, 1995). A move from a teaching to a learning style has profound implications for agricultural development institutions. The focus is less on what we learn, and more on how we learn and with whom. This implies new roles for development professionals, leading to a whole new professionalism with new concepts, values, methods and behaviour. The new professionals, make explicit their underlying values, select methodologies to suit needs, are more multidisciplinary and work closely with other disciplines, and are not intimated by the complexities and uncertainties of dialogue and action with a wide range of non-scientific people (PRETTY & CHAMBERS, 1993).

Participation in agricultural system is defined as “ joint decision-making and action by the clients and the agents of agricultural extension services” (SCHMIDT et al., 1998). The “joint decision-making” in agricultural extension concerns the following aspects of extension: extension system, set-up, and organisational structure; organisation and management of extension; content of extension; extension methods; and financing of extension activities. The joint action in extension can be broken down into the following phases: situation analysis; development of solution; planning of activities; transference into
Participation is a kind of “give and take.” All participants of the participatory process have to contribute according to their function and potential to the goal attainment. Extension and research are the service organizations in this system of which both female and male farmers are the prime beneficiaries. That is to say, the purpose of extension and research is not self-perpetuation but enabling farmers to overcome the constraints to further development. A basic principle of a participatory extension approach is the mutual respect of all concerned persons. Everybody should enjoy the same level of importance regardless of his or her function in the extension service. This fundamental attitude covers the areas of knowledge, expectations, responsibilities, the development of problem solving activities, and decision-making. In practice, this mutual respect is represented in form of the dialogue as the most adequate method of interaction (NAGEL et al., 1992).

Research 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 areas, namely Ayeyarwady, Yangon, Bago, Magway, Mandalay, Sagaing Divisions and southern Shan State of Myanmar. These areas are agro-ecologically different. The quantitative and qualitative research methodologies were applied. These methods included distribution of questionnaire to 70 extension agents and personal interviews with 60 extension agents. Furthermore, the author made the group discussion with subject matter specialists from different departments of MOAI (rice, maize, pulses, oilseed crops, perennial crops, industrial crops and horticultural crops), experts and project coordinators from United Nations organizations (UNOs) and NGOs in Myanmar.

The personal interview focused on knowledge of extension agents concerning existing extension approaches, their attitude towards implementing of the new participatory extension approach in Myanmar, the training experience of agents and the needs of the further training to improve their quality in knowledge and skills. The questionnaire focused on the training needs for potential extension agents. Potential extension agents here meant that students just finished from agricultural University and state agricultural Institutes who have being provided pre-service training at CARTC before they are going to work in farmers’ fields as village extension agent. In addition, both the interviews and questionnaires explored the primary duties and responsibilities of extension agents and the main factors affecting the performance of extension activities.

Research Findings and Conclusion

The main problems of current agricultural extension service were required to identify before making suggestions on further development of extension programmes and formulating an efficient extension system for Myanmar. After discussing with a number of experts, subject matter specialists and extension managers of MOAI, twelve factors were selected as main factors affecting the performance of extension activities. The respondents were asked to indicate their opinions by checking one of the four possible answers for each factor, namely “strong”, “moderate”, “less” and “no” hindering factors and scoring was done by assigning 4, 3, 2 and 1 respectively. For clear understanding, opinions of all respondents from personal interviews and questionnaires (130 extension agents) were arranged in a rank order according to the mean values, which is presented in Table 1. The higher mean values indicating relatively strong hindering of the factors.
Farmers’ inadequate technical knowledge in agriculture: The highest mean value of 3.78 indicates that farmers’ inadequate technical knowledge in agriculture was a major constraint for extension agents in performing extension activities. About 78% of the total respondents answered “strong hindering factor” and 22% of the respondents expressed “moderate hindering factor” for this item.

Lack of proper extension programs for the needs of local community: Another major constraint for extension agents is the lack of proper extension programs for the needs of local community. This item was expressed by 73% of the respondents as “strong hindering factor” and only 27% of the respondents as “moderate hindering factor” and received the second highest mean score of 3.73. Almost all of the extension education programmes implementing by government agricultural extension service are focused on rice production technologies. Although some regions of Myanmar are not suitable for growing of rice, agents are responsible to organize the farmers to grow rice according to the ministry planning. Farmers are not landowners and they have only single right to cultivate. Therefore, the lack of suitable extension programmes for the needs of local community is also one of the major hindering factors for extension agents in performing extension activities.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Mean Values</th>
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<tbody>
<tr>
<td>1. Farmers’ inadequate technical knowledge in agriculture</td>
<td>3.78</td>
</tr>
<tr>
<td>2. Lack of proper extension programs for the needs of local community</td>
<td>3.73</td>
</tr>
<tr>
<td>3. Poor transportation facilities</td>
<td>3.63</td>
</tr>
<tr>
<td>4. Lack of suitable market and price insurance for farm products</td>
<td>3.55</td>
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<tr>
<td>5. Lack of farmer’s finance</td>
<td>3.53</td>
</tr>
<tr>
<td>6. Inadequate extension agent</td>
<td>3.46</td>
</tr>
<tr>
<td>7. Too many farmers to advice</td>
<td>3.45</td>
</tr>
<tr>
<td>8. No insurance for crop damage</td>
<td>3.38</td>
</tr>
<tr>
<td>9. Responsibility for research experiments</td>
<td>3.30</td>
</tr>
<tr>
<td>10. No cooperation of local people in program implementation</td>
<td>3.22</td>
</tr>
<tr>
<td>11. Illiteracy of farmers</td>
<td>3.19</td>
</tr>
<tr>
<td>12. Reluctance of farmers to accept new technology</td>
<td>3.13</td>
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</table>

Poor transportation facilities: The factor “poor transportation facility for extension agents” possessing the third highest mean score of 3.63 is also a major constraint to perform the extension activities. About 63% of the respondents said that “strong hindering factor” and 37% of the respondents replied that “moderate hindering factor” for this item. If there were good transportation facilities for the extension agents, they could reach in time to farmers’ site and distribute and advice new and modern information, practices and technologies to farmers. Once, agents could bring farmers’ problems to the respective research centre and find the solution in time. A majority of village extension agents have been used bicycle to reach to farmers’ size. The public transport situation is very poor and private car or motorcycle is impossible for agents due to very low salary.
Lack of suitable market and price insurance for farm products: About 55% of the respondents said that “strong hindering factor” and 45% responded that “moderate hindering factor” for the item “lack of suitable market and price insurance for farm products”. According to the national planning program of higher rice production, farmers have to grow rice three times per year as soon as possible. As a consequence, the rice quality is decreased and it was impossible to export to abroad. There are very high support and no demand for rice in the country. According to the increasing exchange rate and fluctuation of national currency, the production cost is being increased. It is assumed that the suitable market and price insurance for the agricultural products are essential needs for the farmers.

Lack of farmer’s finance: This factor was indicated as “strong hindering factor” by 53% of the respondents and as “moderate hindering factor” by 47% of the respondents. It is evident that due to the successive growing of high yielding rice varieties (HYV), the soil fertility was decreased and farmers can’t support for that and subsequently the crop production were also decreased. Extension agents have no more strength to advice the farmers to grow HYV rice and farmers disappointed to practice the new technology and they don’t believe the extension agents. The farmers’ credit providing by the Myanmar Agriculture Development Bank is very small amount and this is not covered for the high production cost.

Inadequate extension agent: About 46% of the respondents replied that “strong hindering factor” and 54% said that “moderate hindering factor” for the item “inadequate extension agent”. The number of extension agents, who are working in Agricultural Extension Division (AED), is not enough compared to the large number of farmers and cultivated areas. This is because of very low salary and the lack of incentives for extension staff and then they are not interested to work under the government department and they shifted to other private department. Therefore, inadequate extension agent is also one of the major constraints for agents to perform their fieldwork effectively and efficiently.

Too many farmers to advise: Approximately 45% of the respondents indicated their opinions on the item “too many farmers to advise” as “strong hindering factor” and 55% said that “moderate hindering factor.” As a consequence of the inadequate number of extension agents under AED, a village extension manager is responsible for 100-500 farmers and 100-5,000 hectares of cultivated land area.

No insurance for crop damage: This item was indicated by 38% of the respondents as “strong hindering factor” for extension agents to perform the extension activities and as “moderate hindering factor” by 62% of the respondents. According to the national plan, farmers have to grow rice as much as possible. A majority of farmers have being faced every year more or less disasters like drought, flooding, disease infection and insect infestation, etc. during the crop cultivation and crop harvesting periods. As a consequence, crop yield were decreased and farmers lost their investment in crop production.

Responsibility for research experiments: This item received the considerable high mean score of 3.30 and was described as “strong hindering factor” by 30% of the respondents and as “moderate hindering factor” by 70% of the respondents. All the extension agents are
government employees and they are given tasks not only to implement extension activities also to supervise the research experiments in their responsible areas by an authorized officer in the agricultural organization unit. Extension agents, thus felt that responsibility for research experiments is also one of the hindering factors to perform extension activities.

**No cooperation of local people in program implementation:** This item was responded by 26% of the respondents as “strong hindering factor” and “moderate hindering factor” by 70% of the respondents. The remaining 4% of the respondents indicated as “less hindering factor.” According to the national planning program that is to export more rice, Myanmar Agriculture Service implemented the improved high yielding rice production programmes throughout the country. Unfortunately, this program was not successful and didn’t reach the expected target. Nowadays, a majority of farmers are not interested to cooperate in the implementation of any new extension programmes from MAS because there is no suitable market for farm products, no government subsidy for farmers, and the production cost is becoming very high.

**Illiteracy of farmers:** Approximately 22% of the respondents indicated that the illiteracy of farmers as “strong hindering factor,” and 75% responded that as “moderate hindering factor.” The remaining 3% of the respondents indicated this item as “less hindering factor” for agents to perform extension activities and this received the relatively high mean score of 3.19. It is clear that a majority of farmers in Myanmar are not educated, they are able to read and write and they could not understand easily the concept of new technologies and methods.

**Reluctance of farmers to accept new technology:** This item was expressed by nearly 18% of the respondents as “strong hindering”, 78% of the respondents as “moderate hindering” and the remaining 4% as “less hindering” factor for agents to perform extension activities. Although this item received the lowest mean score among the twelve items identified in this study, its mean score of 3.13 is also high. It is obvious that there is no suitable market and price insurance for agricultural products; no insurance for crop damage; and lack of farmers’ finance were favourable to the reluctance of farmers to accept new practices.

The results from the analysis indicated that all the factors listed in this study were identified as the main hindering factors for extension agents in performing their extension activities because the lowest mean score of 3.13 is also relatively high. It is evident that the most important constraints for agents in performing the extension activities were concerned with “Farmers’ inadequate technical knowledge in agriculture”, “Lack of proper extension programs for the needs of local community” and “Poor transport facilities”. These three factors were rated considerably higher than other factors.

There is no community-based organization in Myanmar and farmers have no chance to participate in problem identification and decision-making process. They have to follow and involve in the implementation of planned extension program in their field. Moreover, there is no effective linkage between the agricultural extension, research and training institutions. Extension agents from agricultural extension division have no more contact with Agricultural University and State Agricultural Institutes through training or research activities after they graduated from respective Institutions. In-service trainings for extension agents are provided at the Central Agricultural Research and Training Centre (CARTC).

In recent years, some international NGOs and UNOs have being introduced and implemented a number of projects through participatory extension methods in different regions of Myanmar. They have emphasized on sustainable agriculture and rural
development in Myanmar and have invested considerable efforts and financial resources in the system with the aim of increasing farmers’ participation. The human development initiative (HDI) projects being funded and implemented by UNOs in Central Dry zone, Ayeyarwady Delta, and Shan Hilly regions of Myanmar are presented in the following Table 2.

**Table 2: Human development initiative (HDI) projects in Myanmar**

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Implementing Organizations</th>
</tr>
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<tbody>
<tr>
<td>1. Primary health care</td>
<td>WHO, UNOPS</td>
</tr>
<tr>
<td>2. Community water supply and sanitation</td>
<td>UNCHS</td>
</tr>
<tr>
<td>3. HIV/AIDS prevention and care</td>
<td>UNOPS</td>
</tr>
<tr>
<td>4. Primary education</td>
<td>UNESCO</td>
</tr>
<tr>
<td>5. Micro finance</td>
<td>UNOPS</td>
</tr>
<tr>
<td>6. HDI support projects</td>
<td>UNOPS</td>
</tr>
<tr>
<td>7. Food security in dry zone, delta and southern Shan State</td>
<td>FAO</td>
</tr>
<tr>
<td>8. Community development in remote townships (CDRT)</td>
<td>UNOPS</td>
</tr>
<tr>
<td>9. Preparatory assistance for integrated programme for northern Rakhine state</td>
<td>UNOPS</td>
</tr>
</tbody>
</table>

These projects are being implemented by different UNOs namely, World Health Organization (WHO), United Nations Office for Project Services (UNOPS), United Nations Centre for Human Settlements (UNCHS), United Nations Educational, Scientific and Culture Organization (UNESCO), and Food and Agriculture Organization of the United Nations (FAO). The sharing of experiences among these projects has been extremely valuable. The informal networking and joint lobbying resulted in teaming from each other’s experiences, joint papers and workshops. Therefore, there is necessary to draw attention to participatory approaches and pilot activities by government extension agencies especially agricultural extension division (AED), which is the largest public extension agency in Myanmar.

**Implications for Educational Importance**

For the sustainable agriculture development in Myanmar, there is a greater need for reorientation in agricultural research and extension systems. Research needs to be undertaken in more participatory ways if it is to become more effective in empowering the local people. There is a need for a more client-oriented, problem-solving approach throughout the agricultural research system, an approach not limited to a particular kind of technology or a particular type of agriculture zone. Agricultural research and extension systems would also require the forging of new partnerships between the governmental organizations, NGOs, private sector firms, and farmers’ associations. Extension would play as an important role in linking the farmer with supporting services. A strong point should be made for creating the proper working conditions for extension agents. They are the direct link with the farmers and would enable to put participatory extension into action.

The financial as well as technical support from bi-lateral and multi-lateral donors will probably be the key to further significant development of the extension services in Myanmar.
The government should continuously seek funding sources from bi-lateral and multi-lateral donors to expand extension activities to commune and village level throughout the country. In promoting development of agricultural extension services, the importance of institutional linkage between the rural community and the development agents should be considered. With this in mind an institutional framework between the government organizations, Non-governmental organizations and farmers’ association for implementing participatory extension approach in Myanmar is proposed in Figure 2.

![Diagram](image-url)

**Figure 2. Participation of different organizations for extension movement in Myanmar**

**Farmers’ association**: Farmers’ association in proposed model does not exist so far and need to be set up in Myanmar. 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 programme implementation processes. It is also difficult to expect a successful introduction and implementation of participatory extension approach without active participation of farmers. NGOs can play a vital role to develop such farmers’ associations. Farmers’ association should have equal chance to participate in problem identification, decision making, extension programme planning, implementation, monitoring and evaluation processes like other organizations of government and non-government sectors. Main functions of the farmers’ association would be:

- To obtain benefits for farmers by communicating with authorities,
• To initiate and organize farmers’ experimentation
• To make regular contact with research and training institutions, extension division, NGOs and UNOs and to cooperate with them for participatory extension movement

Non-governmental and United Nations organizations: For the implementation of new participatory extension approach in Myanmar, the financial as well as technical support from international NGOs and UNOs would be played in major role. NGOs are putting effort in the development of participatory extension approaches in many developing countries. In recent years, some international NGOs and UNOs have being introduced participatory extension in some areas of Myanmar and targeted to the sustainable agriculture and rural development in Myanmar. They provided some participatory training for the project staff and local people within project areas. However, there are a very few number of international NGOs engaged in Myanmar when comparing with other developing countries in South-East Asia. There are very few local NGOs still now in Myanmar and it would need to be set up later. Functions of NGOs and UNOs in the proposed model would be as follows:
• To facilitate farmers’ groups to become self-reliant and independent associations
• To provide participatory training for trainers (teachers from University and SAIs, trainers/managers from CARTC, and subject matter specialists from CARI) as well as for extension agents and farmers at community level
• To make regular contact with farmers’ associations, extension division, research and training institutions and cooperate with them for participatory extension movement

Agricultural research institutions: There are a number of agricultural research institutions under Myanmar Agriculture Service (MAS). These are as follows:
• Central Agriculture Research Institute (CARI)
• Vegetable and Fruits Research and Development Centre (VFRDC)
• Seed Farms and seed divisions
• Horticulture Farms
• State and Divisional Research Stations
The CARI and VFRDC should develop new technology and innovation adapted to the different social and agro-ecological zones of Myanmar. Participating of farmers and extension agents, researcher should do the decision-making of the solutions to farmers’ agricultural problems. CARI should have regular contact with international research institutions. Seed farms, horticulture farms, state and divisional research stations should work the applied research activities proposed by CARI. They should conduct problem-oriented research and tailor the relevant findings from applied research to specific location. Technology is only one instrument for helping the poor farmers, and it is not always the most effective one. Its role must be seen within the broader context of rural development and grassroots development efforts. Some important functions of research institutions in the proposed model would be as follows:
• Initiating participatory technology and innovation development
• Undertaking research activities on various aspects of participatory approach
• Making regular contact with NGOs, UNOs, farmers’ associations, extension division, and training institutions
Agricultural training institutions: There are seven state agricultural institutes (SAI) and one agricultural University, namely Yezin Agricultural University (YAU) in Myanmar. These institutions play vital role for the agricultural knowledge distribution. In addition, many of the graduates from YAU and SAIs become extensionists at the village levels. Until recently, teachers have no direct contact with extension agents through training, extension or research. Many serving extensionists receive training to upgrade their knowledge and skills in agriculture related topics being provided by Central Agricultural Research and Training Centre (CARTC). Sometimes, further trainings for agents are conducted at Central Agricultural Research Institute (CARI).

Suggested functions of training institutions in this proposed model would be:

- Introducing course about philosophy of participatory extension to their curriculum
- Conducting research activities through participatory methods
- Making regular contact with NGOs, UNOs, research, extension and farmers’ association and working in collaboration with them for extension movement
- Providing in-service training for agents through collaboration of CARTC and YAU

Agricultural extension division: Agricultural extension division (AED) 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, trainers, extension managers and field level extension workers (extension agents) are working under AED.

At present agricultural extension agents see their role as that of a teacher. A participatory approach requires a major shift in roles from teacher to facilitator. This implies that the extension agent will be no longer the main carrier of message and knowledge, but they should coordinate and organize the knowledge acquisition from several sources. Agent as a facilitator should initiate a participatory process in communities with a major focus on local institutional strengthening, need identification and prioritisation. Agents would assist farmers in the discussion about solutions with background knowledge and options (e.g. through organizations of “look and learn” visits to innovative farmers, research stations etc.) and encourage farmers to experiment with these options and ideas as describes above.

Organizational structure of AED should include all issues relating to the zoning of working areas, the formation of specialized sections, supervision, communication-flow, decision-making, job descriptions, and extension personnel. Farmers, researchers, and extension agents should jointly generate extension contents. Knowledge generation should be farmer-oriented. There would be dialogue-oriented extension work, where the extension agent acts as the facilitator rather than the teacher. The set of extension methods to be used should include group extension, methods demonstration, field days, village workshop, individual field visits and farmer-to-farmer visits. Participatory elements could be introduced by way of transfer of responsibilities and decision-making to lower levels, through self-monitoring, and by paying special attention to marginalized groups. AED should make regular contact with farmers’ associations, research and training institutions, NGOs and UNOs and cooperate with them for participatory extension development in Myanmar.
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