



**Participatory Technology Development Working Paper 6**

**TOWARDS SUSTAINABLE DEVELOPMENT IN MAHAWELI  
SETTLEMENTS THROUGH FARMER PARTICIPATION**

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## **ABSTRACT**

In 1991, the PMHE (Promoting Multifunctional Household Environments) project started operating in Mahaweli System C, Sri Lanka, with an action-research phase to gain insight into the lives of settlers who had left their homelands to come to the new frontiers opened up by the Accelerated Mahaweli Development Programme. Contrary to government expectations, the colossal investment in the programme had not paid off in terms of socio-economic development of the settlers. PMHE's task was to identify the bottlenecks and to develop a strategy for sustainable agricultural development in the Mahaweli settlements. The implementation phase of PMHE was based on the active participation of farmers in their own development and was focused on building the farmers' capacity to manage their resources and strengthening local organisation through a process approach. The experiences made in this phase gave rise to the main elements of the PMHE strategy for sustainable development: community mobilisation, farm planning for sustainable farming, farmer experimentation and organisational development through a small-group approach.

In the next phase of PMHE, which was concentrated on scaling up, the Mahaweli Authority of Sri Lanka (MASL) featured prominently as the main agency involved in development activities. Starting with staff working at the grassroots level, PMHE's capacity-building programme covered all ranks of officers in this huge bureaucratic and hierarchical organisation. A concerted effort in training and backstopping helped in changing the attitudes and enhancing the skills of MASL field officers to work as equal partners with farmers. PMHE staff worked alongside MASL staff in integrating the main elements of the strategy into on-going Mahaweli programmes. Farm planning and farmer experimentation became part and parcel of the MASL agricultural policy. The small-group approach to community building became the foundation of the programme for strengthening farmer organisation, starting with small groups of farmers at field-canal level. PMHE then initiated training in institutional development among middle-level managers as a first step towards managing participation, coupled with specific inputs to higher-level managers in the form of seminars and workshops on farmer participation.

Having achieved its objectives, PMHE began in 2000 the process of phasing out. The fruits of its labour were visible, both in the farming community as well as in the MASL. Farmers started moving away from a position of dependency to one of self-reliance, setting their own agendas, solving their own problems and building their communities. MASL staff began to recognise farmer participation as the key to sustainable development in Mahaweli settlements, and were acting as facilitators of the process. PMHE had indeed set the stage for the players to carry on independently, but further efforts within MASL are still needed to sustain and spread this process. For example, planning in the whole organisation needs to be changed from top-down to bottom-up. The chain of planning should begin at Block level and continue to System and Head-Office Level. Participatory monitoring and evaluation, an integral part of a participatory approach, needs to be integrated into the overall MASL monitoring system. There is also a need for clear policy guidelines for the work of field staff, guidelines for strengthening farmer organisation, policy for staff training etc. Any further external support should be directed toward building up internal capacity within the MASL in these areas.

# 1 INTRODUCTION

The Mahaweli Development Programme (MDP) is the most ambitious development initiative undertaken in Sri Lanka in the recent past. Five major dams constructed on the largest river, the Mahaweli, supplied irrigation water to an area of 144,000 ha, previously deemed unproductive because of lack of water. Nearly 125,000 families were settled in the downstream areas during the early and mid 1980s – many of them poor, landless peasants who left their homelands and journeyed to the "promised land" with the dream of becoming proud owners of a plot of irrigated paddy land. Each settler family was entitled to 1 ha irrigated lowland for paddy rice cultivation and 0.2 ha rainfed highland for a homestead.

The Mahaweli Authority of Sri Lanka (MASL) was the government agency set up for the sole purpose of making this programme work. It played a central role in the construction of irrigation and other infrastructure, in human settlement and in the development (also agricultural) of these vast settlement areas under its purview. When, in the late 1980s, it became evident that the "Mahaweli dream" among settlers had begun to blur and that indebtedness and poverty were on the increase, the PMHE project was initiated to develop, promote and scale up the use of participatory approaches to sustainable agricultural development. From 1991 to 2000, it is operated as a bilateral development project of Sri Lanka and the Netherlands, with advisory services provided by ETC International.

The task entrusted to PMHE in entering Mahaweli System C was to develop a strategy for sustainable development. In the first 3–4 years, PMHE's attention was largely devoted to working intensively at grassroots level in fulfilling this task. After having developed the broad lines that form the core of the strategy based on settler participation, the focus shifted in 1995 to spreading this within the Mahaweli institutional set-up and adapting it accordingly. During the last three years, PMHE has, against many odds, pursued this goal and is confident that participatory development can be realised within a large state-sector organisation such as the MASL. The experience described in this paper should be considered in this specific context and timeframe and, as such, not as a blueprint for institutionalising PTD. However, it does suggest important points that should be taken into consideration when trying to incorporate participatory approaches into a large state-sector organisation.

## 2 THE CONTEXT

In Sri Lanka, crown land has been issued in colonisation or settlement schemes since the beginning of the 20<sup>th</sup> century. The State played a crucial role in establishing the irrigation network, in selecting settlers and in allocating and developing land. Most of these settlement schemes are located in the relatively sparsely populated dry and intermediate zones of Sri Lanka, with rainfall between 500 and 1500 mm per annum (75% expectancy value). Not only landless farmers but also others interested in farming profited from these issues of land almost for free. Ownership of a plot of irrigated land has a high cultural value.

The MDP of the Sri Lanka Government aimed at reaching several objectives:  
to generate hydropower to address the growing energy requirements;  
to increase agricultural production;  
to generate employment and livelihood opportunities for landless and impoverished farmers through new settlements in the downstream areas.

Administratively, the area under MDP is divided into (irrigation) Systems (B, C, G, H etc), Blocks and Units. A Unit is more or less comparable to a village with an average of 150 resident farm families. Several Units form a Block, and several Blocks form a System. Around 11,000 employees arranged in a strictly hierarchical order managed this vast programme until the agency underwent restructuring in the late 1990s and 60% of them were made redundant. Yet, the MASL remains one of the biggest government agencies which, as a river-basin authority, will continue to be involved in managing these areas in partnership with farmers and other stakeholders.

The total extent of land cultivated under the Mahaweli project is about 92,000 ha. Nearly 90% of the land is under paddy cultivation in the wet season (*Maha*). In the dry season (*Yala*), about 50% is paddy and the rest is grown with other field crops. The annual rice production from the Mahaweli project area is about 661,294 metric tons, which is about 25% of the national rice production.

PMHE commenced at the time when MASL was shifting from being mainly involved in establishing infrastructure for settlers, to handing over management tasks to the farming community. These were not isolated phenomena: donors were emphasising participation of beneficiaries and privatisation, i.e. handing over tasks from the State. At the same time, the enthusiasm and support for integrated pest management, i.e. deliberately involving farmers in decision-making regarding pest control and reducing external inputs, was gaining in popularity.

### **3 BOTTLENECKS TO SUSTAINABLE AGRICULTURAL DEVELOPMENT**

On arrival in the settlements, the families were assisted by the MASL in organising their farming activities – cultivation loans for buying inputs, initial supply of seed paddy, traction for the first ploughing of the land, seedlings for planting in the home garden etc. Extensionists provided advice on cultivation of rice in an irrigated regime with high inputs. A standard home garden development plan was handed out to the families. All the ingredients for settlers to become successful farmers seemed to be in place.

Yet, the situation that PMHE encountered in entering System C in 1991 was far from one of success. Farmers were dissatisfied and debt-ridden. Home gardens lay bare and unproductive. Rice yields were decreasing after the initial years of cultivation and did not respond to increased fertiliser application. With increased costs of inputs and dropping yields, rice farming was not bringing an adequate income. Lacking the skills, knowledge and motivation to overcome agriculture-related problems, the farmers had not made the anticipated progress.

PMHE's action research in its initial year shed more light on this situation by pointing to certain drawbacks of the extension approach adopted by the MASL. Because of the diversity of settler backgrounds and land characteristics, the standard recommendations offered for agricultural development were often not feasible or were unsuitable. Farmer training was confined to classroom settings and theoretical in content. Processing of farmer's problems through research stations was time-consuming; delay in transmitting the solutions meant that the usefulness and relevance were lost. The fact that farmers were considered solely as recipients of the extension system ruled out any form of farmer participation in agricultural development. Poor social cohesion and weak organisational capacities among settlers with so many different backgrounds further prevented problem solving by the farmers themselves.

It was these negative aspects – lack of farmer participation, under-utilisation of resources, lack of appropriate skills and knowledge, dependency on MASL – that PMHE addressed in developing a strategy for sustainable agricultural development. Principles of LEISA (Low-External-Input and Sustainable Agriculture) and PTD (Participatory Technology Development) were pivotal in this endeavour of stimulating farmers to be better managers of their resources.

From the beginning of the project, it was obvious that development efforts could not be sustained without the participation of the farmers. This change could be brought about only if the main actors involved – in this case, the farmers and the MASL staff – were willing and able to participate. Farmers had to regain self-reliance, take over responsibilities and manage their own affairs, while the MASL staff had to become facilitators in this process – recognising and respecting the knowledge of farmers and supporting them to become self-reliant.

## 4 KEY ELEMENTS OF THE APPROACH AND METHODOLOGY

Farm planning, farmer experimentation and farmer-to-farmer extension were regarded by PMHE as the key elements of the PTD approach in the reality of the Mahaweli settlement areas. These worked hand-in-hand with Community Mobilisation (COMMOB) and Organisational Development (OD) to form the five main components of PMHE's approach to sustainable agricultural development.

### 4.1 Farm planning

Farm planning is a tool for farm families to develop their farms while managing their resources in a sustainable manner. It gives farm families the reins in developing their own farms, and became an integral part of the PMHE approach towards sustainable agricultural development.

**The fundamentals of farm planning.** Efficient resource use is the cornerstone of farm planning, which is based on ecological processes, LEISA principles and active participation of farm families. Recycling, biomass production, diversity, living soil, internal collaboration and efficient use of all resources are aspects of the natural environment that are imitated in farm planning. As such, external inputs are considered only when all options within the farm have been fully utilised.

Farm planning is a tool to achieve systematic development of the whole farm – the irrigated plot and the home garden – over several years, and provides a framework into which all activities are fitted in. This plan, however, is a flexible overview of how the farm family would like to develop the farm, and can be changed as and when required. In putting the plan down on paper, the family makes a commitment to farm development and also gains confidence in saying: “This we can reach on our farm with our own resources.”

Farm planning is also a participatory process in which the farm family takes the central decision-making role, guided by extensionists as facilitators.

**Application of farm planning.** A farm-planning exercise begins with a situation analysis of the farm, taking into consideration both the irrigated plot and the home garden. All resources and opportunities are noted. These findings are then depicted visually in the form of a map. Looking at its resources and opportunities, and bringing in some of its own vision, the farm family draws a map of the desired situation. A long-term plan of action is then developed, and consists of activities to be undertaken in order to reach this desired situation on the farm. Short-term or seasonal plans are extracted from this master plan as segments of development to be undertaken by the farm family in a given agricultural season. At the end of each season, the family measures the progress made, makes alterations according to its needs, brings in new ideas and experiences, and re-plans for the next season.

Over the years, the methodology was refined to one that could be adopted by the MASL staff within their regular extension activities, consisting of the steps shown in Table 1.

**Table 1: Steps in farm planning**

<b>Activity</b>	<b>Purpose</b>	<b>By whom and how</b>
Awareness session	Provide an orientation to farmer groups on farm planning and select group of farmers (35–50) interested in doing farm planning.	General meeting with all farmers by AO / FA or UM.
Session 1 (½ day)	Identification of the sustainability of soils by comparing soil samples of a virgin forest and of a cultivated plot. Observation of sustainability in a forest setting. Visit to a resource farmer's land and observation of steps taken to achieve sustainability.	FA / UM / AO conduct this session at selected venue.
Session 2 (½ day)	Analysis of present situation. Resource identification. Mapping of present situation of farm.	Block staff trained in FP. Group gathers at selected farm used as example for the exercise.
Session 3 (½ day)	Group returns to a given location with maps of present situation and inventory of resources. Problems are clarified.	AO / FA
Session 4 (½ day)	Exposure visit to farm developed through farm planning and exchange of ideas.	Visit organised by FA / UM.
Session 5 (1 day)	Mapping of future situation. Preparation of long-term plan. Preparation of short-term plan.	Block staff trained in FP guide farmers in small groups of 5 farmers each.

Acronyms: AO = Agricultural Officer; FA = Field Assistant; UM = Unit Manager; FP = farm plan

Monitoring the implementation of farm plans and end-of-season evaluations with the farmers were incorporated into the regular extension activities of the Field Assistant.

## 4.2 Farmer-led experimentation

Another key element of PMHE's strategy was farmer-led experimentation as a process of iterative learning through interaction between farmers and outside facilitators in developing sustainable farming systems. The experiments were geared not only to finding solutions to current problems, but also to conserving and enhancing natural resources so that they could still be used by future generations.

**The process.** Most experiments started from problems articulated by farmers. A good understanding of the problems was gained through in-depth analysis, taking into consideration the cause-effect relationships. An inventory of the potential resources and opportunities, including human resources and good ideas, was made thereafter. Possible options were listed; the most promising were selected for trying out. The experiments were designed accordingly, ensuring a level of complexity that could be managed by farmers. What was to be monitored, and how, was also decided in discussion with the farmers. At the end of the agricultural season, the experiments were evaluated, usually at group sessions and according to criteria set by the farmers themselves. Results were shared with other farmers. The results of one experiment often formed the basis for another, and farmers continued the process of experimentation. Farmers who went through this iterative process of action and reflection learned an approach to problem solving that could be used in any sphere of life. And with it came confidence to cope with their situations and stimulate change. Over the years, more than 2000 farmers have thus been involved in experimentation. More than 300 did their experiments in close interaction with PMHE, while the others received



support from MASL field staff or were encouraged by other farmers to experiment by themselves.

Once farmers became involved in experimentation and were enthusiastic about its possibilities, the more technical aspects were brought in. Farmers' skills were gradually built up to the point that they could undertake systematic experimentation, giving attention to the following aspects: site selection, the issue of control, replication, scale, border effects, number of variables and monitoring and evaluation.

The large number of farmers involved enabled the tackling of a wide variety of issues in rice production, other field crops and homegarden development: weed control, fertility management, soil conservation, variety selection, harvesting and processing and marketing. This diversity made the processing and systematisation of results relatively complicated. Because of the strong extension and action orientation of both PMHE and MASL and the almost non-existence of a research capacity in the region, the emphasis was on farmer-to-farmer and farmer-extensionist-farmer mechanisms to spread results.

**Impact of farmer experimentation.** The key impact of farmer experimentation was in instilling a problem-solving approach among farmers, which weaned them away from dependency and gave them confidence. Through experimentation, farmers were able to find solutions to their problems, instead of waiting for someone else to do it for them. Moreover, these solutions were well suited to the specific site conditions and therefore very appropriate. The ability to analyse problems, find suitable options, try them out and draw conclusions was a valuable capacity that was used by them not only in agriculture, but also in other spheres of life.

For example, since 30% of the total cost of rice production is on land preparation, some farmers took up experiments in zero or minimum tillage, which had never been done by farmers in the area. Experimentation also helped farmers to improve profitability in rice farming. By trying out a combination of options – straight fertiliser application, organic manure, varietal selection etc – some farmers were able to increase their rice yields from 3000 kg/ha to 6500 kg/ha.

Knowledge about the positive findings from experiments was not confined to the experimenters alone; instead, this was shared and applied by a much larger group of farmers. Initially, only a few farmers started to bring the paddy straw back into the paddy fields as a means of recycling nutrients. Within a short time, many farmers took up the practice, as they noted its benefits. Experimentation also helped farmers to take a more rational stand on common myths that prevented them from carrying out certain useful activities. For instance, in the case of straw recycling, many farmers in System C did not practise it because they believed that the straw would become entangled in implements used for ploughing. However, experiments in straw application proved this myth to be baseless. This helped many more farmers adopt the practice.

### **4.3 Farmer-to-farmer extension**

The third key element in the PMHE approach to agricultural development – farmer-to-farmer extension – was part and parcel of almost all activities undertaken with farmers. It took many forms:

- *Group discussions* for sharing what farmers know with others and for planning;
- *Inter-group events* where more than one small group of farmers came together, e.g. group anniversaries, end-of-season evaluations. People who did not belong to the groups were often invited, as well;

- *Visits to resource farmers* with a certain specialised activity or experience in order to gain first-hand knowledge;
- *Cross-visits* during which groups of farmers from one location (Unit) visited farmers in other Units to learn what they were doing, often covering the range of experiments being done at that location;
- *Farmer presentations*, often with a strong visual component in the form of photographs, diagrams, pictures etc, to convey farmer experiences to a larger audience;
- *Farmer as extensionists / facilitators*, taking several forms depending on the motivation and interests of the farmers. *Praja Sevakas* (community servers) were those men and women who had a vision and were interested in being facilitators of the community development process. *Resource farmers*, on the other hand, were those who were interested in sharing their knowledge and experiences in a particular area of activity, e.g. experimentation, livestock keeping, crop husbandry.

The farmers in System C who joined such activities mentioned among the main benefits:

- *Seeing another farmer doing is believing*, more convincing than a neat plot in a research farm cultivated under controlled conditions;
- *Relevance of experiences*: what farmers saw and learnt was relevant for them; the experiences often provided solutions to certain problems they faced or were activities that they could take up;
- *Conducive learning environment*, as a paddy field or a farm form a very non-threatening and informal atmosphere, particularly for women, which makes it easy for farmers to participate freely;
- *Building bridges*: the possibility of creating linkages with other farmers is crucial in a settlement scheme, where contacts among farmers are initially weak;
- *Confidence building*, especially for those who hosted farmer groups or presented their findings to others.

#### **4.4 Community mobilisation and organisational development**

In addition to the above three components, which are part and parcel of most PTD programmes, PMHE's approach to sustainable agricultural development included two more components. The first is called Community Mobilisation (COMMOB) and focuses on attitudes and skills to be built up in order to empower farmers. This is an approach inspired among others by Freirian thinking and has a considerable history in Sri Lanka. It encourages people to analyse their situation in the widest sense, create awareness about what can be done by joining hands and encourages action planning. Central in this approach is the formation of relatively small farmer-neighbourhood groups, which may remain rather informal or go through a process of structuring and formalisation. In the Mahaweli settlement areas with their lack of social structure and coherence, the hundreds of small groups that emerged appeared to be of crucial importance for the development and implementation of all other activities.

Closely linked to the above is a fifth component: Organisational Development (OD). With this, PMHE aims at strengthening community organisation emerging from the social mobilisation efforts. It addresses issues such as management and administration of groups, leadership and conflict resolution. In line with PMHE's overall approach, OD efforts are very much farmer-led and demand-driven. As a result, a variety of community organisations have emerged: Some small groups formalised but remained on their own; others joined together to become federations of small groups. Some maintained a single purpose (e.g. saving and credit, marketing), while others developed a much wider agenda. In the later years of the project, the COMMOB/OD approach was also used successfully to strengthen the farmer

organisations initiated by MASL for the purpose of taking responsibility for water management at the various levels.

## **5 INTEGRATING THE APPROACH INTO THE MASL**

The process of participatory development could not be sustained within the Mahaweli Systems, unless the MASL adopted it as its own. The organisation was strictly hierarchical, with a blueprint approach to development and a paternalistic attitude towards the settlers. Taking on an approach to development based on farmer participation therefore required fundamental changes. These changes had to be brought about at three levels: 1) enabling staff to take on the role of development facilitators through a process of training and backstopping; 2) assisting middle-level staff to manage participation; and 3) lobbying at the higher-level to bring about favourable conditions for participatory development.

### **5.1 Capacity building of staff**

Content. Approximately 100 training workshops in participatory approaches were conducted during the period January 1995 to June 2000. This included full-fledged training workshops as well as periodical refresher sessions. The staff categories included in the training came from all layers of the MASL structure from Unit to Head-Office level, and the subject matter varied accordingly. PMHE's contribution to these programmes was in many forms: sponsorship, logistical arrangements, collaboration with various Mahaweli agencies in selection of trainees, providing training support in the form of trainers, co-trainers and field facilitators etc. Training was conducted in the following areas:

- Participatory Rural Appraisal (PRA) – focusing on building rapport with settlers and involving them in situation/problem analysis;
- Farm planning for sustainable farm development (FP) – paying attention to optimal use of available resources in a systematic, planned way;
- Participatory Technology Development (PTD) – concentrating on recognising and harnessing farmers' knowledge in a process of joint experimentation;
- Community Mobilisation (COMMOB) – focusing on attitudes and skills to be built up in order to empower farmers;
- Organisational Development (OD) – promoting strengthening of community organisations, as a follow-up to the COMMOB training.

In most cases, these topics were treated systematically through a sequence of training events covering a period of 1–2 years, with each event linking up with and looking back at the previous one.

PRA and participatory approaches to sustainable agriculture (PTD and Farm Planning for LEISA) were the initial programmes in which training was conducted. PRA training was considered pivotal for all categories of MASL staff, as it focuses on developing the attitudes and skills required in facilitators. Continuing from PRA, PTD was important to develop the capacity of MASL field officers to interact with farmers in finding solutions to their specific problems through a process of joint experimentation. Training in FP imparted the skills and the knowledge required for an extensionist to guide farm families through a systematic process of planning their farms, using available resources optimally.

As field staff began to work in closer collaboration with farmers, the need for better facilitation and group-moderation skills for community strengthening emerged. Training workshops in Community Mobilisation (COMMOB) and Organisational Development (OD) were a response to recognition of this need and were conducted in 1998 and 1999. Participatory monitoring and evaluation was an integral part of each of the above-mentioned subjects and focused on finding simple systems of monitoring and evaluation with farmers. Gender was another aspect that encompassed all subject areas and helped officers to understand the different

roles and responsibilities of men and women in development activities and, thereby, to ensure active participation of both parties.

**Targeting training.** In a large, multi-layered, hierarchical organisation like the MASL, selection of staff categories was crucial to achieving the required impact of wide-scale application of participatory approaches. The first priority concerned people who worked directly with farmers, namely Field Assistants and Unit Managers. Application of participatory approaches by field-level officers required understanding by their immediate supervisors. Hence, the next category of staff that needed to be trained consisted of Agricultural Officers, Community Development Officers and Institutional Development Officers at Block level. Block Managers, who co-ordinated all development work, were also given orientation in participatory approaches. Human Resource Development Officers, who were attached mainly to the training centres and whose main responsibility was training, formed a major category included in all training programmes. Several programmes, some specially tailored, were targeted at the middle- and higher-level managers of the MASL.

Training content varied according to staff category. Field- and Block-level staff members were given intensive training, with a large component of fieldwork. Such workshops were of longer duration and went into greater detail. Shorter workshops or discussions, which generated awareness on participatory approaches, were used for managers. As opposed to field staff, that underwent 10-day rigorous PRA training, managers were exposed to a 5-day orientation programme. The same applied for PTD and FP.

**Training approach.** The training organised by PMHE differed significantly from what MASL staff had undergone before. Moving away from the conventional “top-down” courses focusing on transfer of information, the training in a workshop style created an atmosphere of active learning. Experiential learning was given strong emphasis, with field assignments providing opportunities for trainees to acquire skills and develop insights independently. Focused learning sessions were interspersed with fieldwork that allowed trainees to practise what they learnt and then to reflect on how they acted. Such reflection helped trainees to go deeper into the subject and to gain new insights. Each workshop, even those for higher-level staff, created situations in which trainees could interact directly with farm families. Assignments with farm families, visits to resource farmers and brainstorming sessions with farmers were all means of developing the relevant attitudes and skills, such as respecting farmers’ knowledge, dealing with gender issues, stimulating creative interactions with farmers etc.

**Training of trainers.** Conscious of the fact that training in participatory methodologies cannot always be done by external trainers, PMHE began – already in 1995 – to identify potential trainers from within MASL, who could be groomed for this task. A number of training-of-trainers workshops were organised in all the core subject areas. These workshops generally lasted for 10–14 days of highly intensive work. They combined study of the content of the relevant subject area with learning and practising the participatory training approach developed and promoted by PMHE. The project strongly believed that a PTD trainer can be effective and convincing only if she/he practises the main principles of participation during the training itself. After gaining training skills, these officers were given the opportunity to gain on-the-job experience by being co-trainers with PMHE staff in the relevant programmes.

As most of these trainers belonged to the Human Resources Development Unit of MASL, this activity was a crucial one that tied up, in a sense, all the input into capacity building of staff. It was important to provide the unit with the knowledge and skills required not only to continue training and backstopping, but also to adapt training to meet the changing requirements of the organisation and its staff.

**Development of training curricula and manuals.** All the above-mentioned training activities were documented with great care to form the basis for the preparation of systematic

training guides for use by MASL trainers in their regular training programmes. A first outline of a curriculum was made for Community Development, which was discussed and adjusted to function as an example. Curricula for the other subjects were prepared accordingly. Detailed session plans per curriculum were then worked out through a similar process. Each curriculum was tested and fine-tuned through the ongoing training programmes. While all training manuals give step-by-step directions on how to organise training on the relevant topic, they do encourage the users of the manuals, at the appropriate places, to adapt and innovate the modules in order to suit the requirements of a specific group or situation.

Having completed the English versions of these training guides,, PMHE embarked on translating them into Sinhala, an equally intensive activity. Most of the translation was done in-house by PMHE trainers, adjusted whilst conducting training, and completed. Workshops for orienting the trainers on using the training manuals were conducted before handing them over to the respective sections of the MASL.

**Backstopping of field staff.** Very early on in the process of training, PMHE noticed some reluctance on the part of trained staff to apply the newly gained knowledge and skills. Although training workshops provided some “hands-on” exposure through short field exercises, it was obviously not sufficient to build up the confidence required to embark on application in the field. Even the more adventurous among the trainees dared only to take small steps in trying out what they had learnt. Backstopping was essential to reap the full benefits of training.

Backstopping evolved over the period and depended on the availability of PMHE staff, requests from MASL, type of training etc. The backstopping activities included:

- *Sharing sessions for trained staff:* these were usually one-day sessions at which staff – trained and not yet trained – could openly exchange their experiences;
- *Post-training refresher workshops:* these were held per subject area and were more structured, dealing with problems of application faced by trainees in the field;
- *Joint monitoring of post-training assignments:* this was common in the case of FP and PTD. At given times during the agricultural seasons, visits were organised to provide follow-up to field officers implementing these assignments, together with their superiors, the Agricultural Officers;
- *On-the-job guidance to trained staff in routine MASL activities:* this was an intensive form of support given to MASL staff of System C. PMHE staff joined MASL officers in their regular field programmes, mainly in the role of observers, helping out if and when necessary. On-the-job guidance in this manner proved to be very effective in building up officers to become excellent facilitators of a participatory approach.

Another aspect of backstopping was in encouraging managers to obtain more feedback from their field officers who were applying participatory approaches as part of PMHE's second-level efforts to integrate the participatory approach within MASL.

**Training impact assessment.** An independent study carried out in the latter part of 1999 by the Department of Agricultural Extension of the University of Peradeniya, Sri Lanka, looked into how training in participatory extension methods/tools affected the working styles of Field Extension Officers (FEO) in the MASL. PMHE was one of three projects included in the study. It was found that FEOs had learned new methods/tools relevant to their day-to-day activities and were using them in extension activities with farmers. Both farmers and superior officers had experienced favourable changes in the behaviour of FEOs in interaction with their clients, i.e. the farmers, articulated as being friendlier towards them and respecting their views. More than 75% of the FEOs interviewed during the study were positive about the training received and agreed that they gained greater job satisfaction by using participatory

methods and had increased their extension coverage with farmers (Wanigasundera & Sivayoganathan 1999).

## 5.2 Support to manage participation

**Institutional Development and Organisational Strengthening.** Field officers who began to adopt a more participatory working style needed to be understood and supported by their superiors. In the MASL hierarchy, the first and most crucial level of managers that deals with field officers is that at the Block level.

While all relevant staff at the Block level was exposed to PRA, PTD and FP through the above-mentioned training programmes, PMHE found that a more focused support to Block managers was needed to motivate them towards a participatory approach and to enable them to manage effectively their Block on the basis of this approach. Support was given to Block Managers in the form of strengthening their understanding and capacities in Institutional Development and Organisational Strengthening (ID/OS). The participatory principles of ID/OS training were to stimulate the Block Managers to take a more positive look at their situation and learn to respect the knowledge of farmers and staff as a valuable contribution to arrive at effective planning. Changed thinking was to result in appropriate action that would begin the process of managing participation.

A series of one-week training workshops in ID/OS were conducted in 1998 to prepare these managers. These included the topics of networking, inventory of key institutions in the area, their role, and patterns of collaboration with the Block Office. Block staff was also challenged to do an internal SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis to identify areas for improvement. Often proposed areas for improvement related to division of responsibilities of each staff, management style and mechanisms, and stakeholder involvement.

**Backstopping middle-level managers.** Following the training, the Block Managers were supported by PMHE staff in initiating activities based on ID/OS at Block level in aspects such as:

- facilitating the use of the “institutiogram” as a tool for analysing the activities of the Block Office in relation to all actors and for finding areas for networking;
- analysing the tasks and skills of Block staff to determine a more efficient use of human resources;
- identifying the priority areas of development for re-organising the Block to function more effectively and efficiently;
- identifying the training needs of the Block in relation to the tasks to be carried out;
- incorporating participatory action planning for the preparation of annual and seasonal work plans.

These interactions began, slowly but surely, to give Block Managers confidence in applying participatory approaches to management.

**Support to on-the-job planning sessions.** Finally, Block Managers were supported with the facilitation of Block planning exercises, so as to integrate the priorities and plans of farmers. In some Blocks, a team-building session was held prior to the planning exercise. In most cases, this was the first time that all Block staff had come out of their compartments to prepare an action plan together. Genuine enthusiasm was observed as staff members set a common goal and found ways and means of achieving it through pooling of resources, irrespective of the department or sector. Regular sessions for monitoring the plans in a participatory manner were also scheduled.

### 5.3 Creating the conditions to sustain the integration

The full potential of all changes at field- and middle-level could become mainstream only if the strategy for participatory development was fully integrated within the overall MASL approach and structure. Here again, PMHE worked on many fronts and with many key persons, mainly at the higher levels of the organisation.

**Creation of awareness and acceptance at higher levels.** *Seminars and workshops* were specially prepared to provide decision-makers with a clear picture of field developments and to raise issues that needed attention. As much as possible, these were also occasions in which farmers were given an opportunity to discuss matters directly with higher officials of MASL. *Successful case studies* were included in the progress reports to the project Steering Committee, which consisted mostly of top MASL officials. *Close personal contact with sectional heads* was very important in keeping a continuous and open dialogue about the process of participatory development and its implications. Such dialogue helped to incorporate their views and led to strong support for the strategy. A few key staff members were given opportunities to *study participatory approaches* abroad. Many openings for integrating elements into regular MASL programmes were thus found. For instance, farmer-to-farmer extension as a means of sharing experiences and farm planning as a tool for sustainable resource management were integrated into many field-level agricultural programmes.

**Close collaboration with staff of the Agricultural Division.** One of the most important points to be mentioned with respect to institutionalisation of PTD is the close collaboration and rapport that PMHE built up with the staff of the Agricultural Division of the MASL. It so happened that, through all the changes that took place within the organisation, the key agriculture staff remained consistent, thus allowing for a continued dialogue and cooperation. Recognition of the approach by the Director and his colleagues at Head-Office level paved the way for smooth implementation by the System- and field-level staff. Indeed, the experiences of MASL staff were documented in a video called "A new approach for the Mahaweli fields".

**MASL formulation of extension policy.** The Agricultural Division at headquarters level was also responsible for formulating the MASL agricultural development policy. Evidence of its close interaction with PMHE was given when the new policy document included an extension component with several key elements of the participatory approach: problem analysis with farmer groups using PRA tools, participatory extension and farmer experimentation. It provided the legal framework for wider application of the strategy, also in other Systems of the MASL.

**Networking and building alliances.** These results cannot be explained by the efforts of PMHE alone. In the second half of the 1990s, most donors stressed the importance of farmer participation and other projects and NGOs gave evidence of the impact of more participatory approaches. PMHE therefore looked continuously for allies beyond MASL and was actively involved in networking within Sri Lanka on participatory development. By being in these networks, PMHE could pave the way for MASL, its counterpart, to join and gain from the rich diversity of experiences. The network with the greatest impact on the scaling up of PTD experiences is the PTD Working Group in Sri Lanka (see Box 1).

**Support to the farmer bulletin "Aswenna".** *Aswenna (Harvest)* is a monthly bulletin published by the MASL in System C. The purpose of this bulletin, published by the MASL Development Centre, is to serve as a source of information to the farmers. In July 1995, PMHE was requested to take on sponsorship of the bulletin. Before deciding on sponsorship, PMHE initiated a reader's survey to ascertain the usefulness of the bulletin to the farmers. The findings were encouraging: with very little access to resource materials, farmers actually



looked forward to the bulletin and even suggested that the bulletin be issued more often. PMHE agreed to fund the production, but also requested a stake in its contents. Being involved in promoting an approach that put farmers in the centre stage of their development, PMHE felt that the bulletin would be an ideal medium for taking this message to other farmers in System C. Apart from providing financial support, PMHE's major contribution was probably in encouraging the bulletin to mobilise relevant experiences directly from farmers and providing links to farmers who would contribute.

In 1999, funding of the bulletin was taken over by the new Mahaweli Consolidation Project (MCP). This implied that the readership of the bulletin was extended beyond System C to System B, part of MCP's operational area. If farmers in System C continue to contribute as they have done in the past, this would become an indirect way of spreading their experiences, especially those in participatory development, to fellow farmers in another System – farmer exchange of a different kind.

### ***Building alliances: the PTD Working Group in Sri Lanka***

The PTD Working Group was an initiative of three donor-funded projects – namely, the North Western Province Dry Zone Participatory Development Project (NWPDZP), the Smallholder Integrated Livestock Extension Project (SILEP) and PMHE – working in the field of sustainable agricultural development in different parts of the country. The objectives of the network were primarily: mutual learning through sharing of experiences in the application of participatory methods and tools in agricultural extension; sharing of resources and know-how (especially trainers); and conducting joint training-of-trainers programmes to improve the capacity and skills of local trainers. The network was set up in 1995 and was soon joined by two other organisations – CARE International and the Netherlands-assisted Integrated Rural Development Programme (IRDP) in Nuwara Eliya.

Despite the voluntary nature of the members' involvement, a narrow focus, concerted effort, good co-operation and a high sense of commitment helped the Working Group to meet many of its goals and positively influence the government counterparts about the merits of participatory extension methodologies. Whilst being an active member, PMHE ensured that MASL, its counterpart, was introduced and gradually became a part of the Working Group. For the MASL staff, the Working Group was a great opportunity to meet, share and learn together with colleagues of other governmental agencies and NGOs.

#### ***Mutual learning through sharing of experiences***

During the first year, the discussions were more fundamental in nature. After having experimented with PTD for 2–3 years, several topics of common interest were discussed at bi-monthly meetings. Problem identification, planning and policy on (free) input provision; approaches in group development and social mobilisation; farmer experimentation, design and monitoring; involvement of government officers in PTD and the role of transfer of technology in PTD were among them. The second year focused on more practical application of PTD and on problems faced in the field. A first round of cross-visits to each of the projects took place in this year, and proved very insightful.

#### ***Linking learning and lobbying***

By the third year, the focus of the Working Group shifted to scaling up PTD approaches. Realisation of the need to bring PTD to the attention of a wider audience led to the joint organisation of a national PTD workshop in September 1997 in Peradeniya. Each member of the Working Group presented its own experiences in using the PTD approach, and highlighted one or more aspects of it. As intended, the workshop raised awareness on PTD among government agencies involved in agricultural development, familiarised the participants on how it could be adapted in various organisational settings and highlighted the institutional and managerial implications for effective application of PTD. Subsequently, a number of regional workshops were organised in 1998, each co-ordinated by one working group member, with

the same purpose as the national one to allow greater participation of staff and government officials at that level. In 1999, PMHE itself – with moral and other support from Working Group members – organised a two-day national seminar on farmer participation in the MASL development areas.

### ***Training in PTD and training of trainers***

As an original objective of the PTD Working Group, training of trainers in PTD was taken up seriously. PMHE, through its contact with ETC, was instrumental in introducing an external trainer to the Working Group and arranging several PTD training programmes for its members. A handpicked group from the member organisations and their government partners, who had the potential of being future PTD trainers, participated at the first Training-of-Trainers Course conducted in January 1997. A second in the series was conducted a year later in May 1998, with a refresher for the first batch of trainees. The investment in these two programmes resulted in the formation of a national pool of PTD trainers, who were able to meet most of the training requirements in PTD.

### ***Pooling of resources***

The third objective set by the Working Group, when it was initiated, was to pool resources among members. All resources related to participatory extension available within the Working Group were categorised and made available to all members. Apart from books and videos, trainers were another important resource shared within the Working Group. Not only did this allow for meeting training requirements, it also opened doors for cross-fertilisation of ideas and experiences. For the trainers, it was a great opportunity to widen their horizons and to build closer links with their colleagues in the pool.

**Working through regular MASL programmes.** As a final strategy to create the overall conditions for PTD to be integrated fully into the MASL, PMHE supported the inclusion of PTD components into regular MASL-wide agricultural programmes, such as the special (model) *yaya* programme. This programme was implemented in all the Mahaweli Systems and took the farmers of a selected irrigated tract (*yaya*) as entry point for integrated agricultural development. Aspects of the participatory approach developed under PMHE that were included in this programme were:

- initiating the programme by doing a participatory situation analysis and options assessment with the farmers using PRA tools
- making a *yaya* plan together with farmers
- incorporating farmer experimentation to find solutions to location-specific problems
- bringing in farm planning to look at aspects of the farming system, especially from a viewpoint of resource management
- supporting integrated pest and weed management activities
- conducting participatory monitoring and evaluation sessions based on the *yaya* plan
- stimulating farmer-to-farmer extension as a means of sharing results.

In fact, this was one of the key points of interaction between PMHE and MASL staff after 1998, when PMHE withdrew from direct implementation. It was also well received by MASL field staff, which had to service farmers in a much larger area on account of the restructuring of the organisation and retrenchment of staff.

Evidence of the results of all these efforts to integrate the participatory approach developed with support of PMHE into MASL is given through the account in the next section on agricultural programmes undertaken by MASL after the closure of PMHE.

## **6 PTD IN MASL AFTER THE PROJECT: A CASE STUDY**

Since the closure of PMHE in 2000, PTD is part and parcel of the agricultural extension programme of the Mahaweli Agricultural Extension Service. The Farmer Field School approach and the *Adarsha yaya* (Model Track of Cultivation) approach are two examples where PTD is integrated and, as such, extensively practised in Mahaweli. Officers and farmers in the rest of the areas conduct field days to show the performance of successful experiments. Farmer seminars are conducted to present new field experiences.

### **6.1 Model Track of Cultivation**

The *Adarsha Yaya* (Model Track of Cultivation) concept was introduced into Mahaweli areas to demonstrate the possibility of increasing the present rice yields. A track of cultivation ranges between 50 and 100 ha, in which each farmer has a plot of 1 ha. The Model Track in Mutuwella, in (irrigation) System B, started in the wet season of 2000. At the very beginning, farmers gathered to discuss, under the guidance of the Field Assistant, their present situation and to identify the problems pertaining to the present yields of the rice crop. This analysis resulted in a problem tree. The roots of the problem were formulated as: lack of knowledge on the most suitable varieties for soil and climate, use of inferior quality of seed paddy, poor access to credit to purchase inputs such as fertilisers, and soil fertility depletion. The overall process of the extension intervention was as given in Table 1.

To cut down the roots of these problems, farmers decided to carry out many activities in their rice fields. Each farmer now has a well-maintained plot for seed production and a live fence around the rice field to produce green manure. They do not burn the paddy straw of the previous crop, but rather incorporate it into the soil. They obtain fertiliser through group-loan schemes. To test the most suitable varieties for their land, farmers were assisted by the Research Officers from the nearby regional research station at Aralaganwila. A Research Officer provided the experimental design and seeds of promising varieties. Cultivation was done according to the normal farmer's practice and the farmers, Field Assistant and Research Officers observed the performance of the varieties in the trial.

**Table 1: Yaya programme extension approach**

Step	Actors	How	Output
Adarsha yaya formation	Field Assistant	Meeting	Farmers interested in group activities to improve rice yields
Problem identification	Field Assistant, Block Agricultural Officer and farmers in group	Group discussion	Problem tree
Inventory of technology	Block Agricultural Officer	Visits to research institutes	Identification of need for location-specific trials
	Field Assistant and Block Agricultural Officer	Group discussion	Observations on experiences on different rice varieties
Design of experiment	Farmer group	Farmers' field experiments	Design of simple experiment
Choice and adjustment of experiment	Farmer who owns the land, Research Officer, Field Assistant and Agricultural Officer	Group discussion	Experiment agenda
Management of experiment	Farmer / farmer group	Records maintained by farmer and Field Assistant or Research Officer	Successful experiment in farmer's field
Assessment of results	Research Officer	Observation by farmer and group	Results
	Field Assistant, Block Agricultural Officer and Research Officer	Statistical analysis of data	Results
Sharing the results		Group meeting	Follow-up plans

## 6.2 The farmers' experimentation

The trials were done by the farmers using the following simple layout:

LD-355 (1)	BG352 (2)	BG358 (3)	Pokuru Samba – origin unknown <sup>1</sup> (4)
BG-358 (5)	Pokuru Samba (6)	LD-355 (7)	BG352 (8)

After the harvest, yields of all varieties were determined and discussed (see Table 2).

<sup>1</sup> Pokuru Samba was the most widely used rice variety in the Mahaweli area.

**Table 2: Yields from farmers' trials with rice varieties**

Plot	Yield (kg / 4m x 4m)	Yield (kg / ha)
LD-355 (1)	1.64	4105
LD-355 (7)	1.67	4185
BG-352 (2)	1.97	4925
BG-352 (8)	2.05	5115
BG-358 ( 3)	2.10	5240
BG-358 (5)	2.05	5125
Pokuru Samba (4)	1.70	4255
Pokuru Samba (6)	1.70	4260

### **6.3 Platform for mutual learning**

The Mahaweli-wide Technical Working Group Meeting now provides a platform to discuss farmers' problems. Research officers of all regional research stations in the Mahaweli areas, representatives of The Seed and Planting Material Division of the Department of Agriculture and Mahaweli Agricultural Officers together with their Director of Agriculture take part in such a meeting once every season. This meeting provides an opportunity to share with each other the results of the previous season.

## 7 LESSONS AND RECOMMENDATIONS

The following main lessons of PMHE regarding a “strategy” for scaling up and institutionalising PTD emerge from this experience:

- *The project as a process:* PMHE lasted for nine years, but it did not start with a clearly set nine-year plan. It actually started with fieldwork in the action-research phase for a period of only nine months. Based on the outcome of that phase, another one was granted. This flexible approach made it possible to address problems – for example, the farmers’ increasing dependency on external inputs resulting in indebtedness – and to seize opportunities, such as the rapid expansion of the training programme beyond System C when the experiences in System C were well received. Like PTD itself, project implementation was based on experiential-learning processes with cycles of planning, action, reflection and re-planning. Participatory monitoring and evaluation and a strong emphasis on reporting helped to improve the process.
- *Use of opportunities:* The biggest impact was sometimes achieved by using an opportunity when it presented itself, even though it was not in the work plan: a certain person at a certain position, a new MASL programme that could be open for PTD. One needs to have an eye open for the right entry points / sparks for scaling up at any moment, like a surfer in the ocean waiting for the right wave to jump on. The project design should be such that it allows for using such opportunities when they arise: flexible planning and possibilities to allocate resources relatively easily.
- *Success stories:* Documentation of successful initiatives (in the form of videos, case studies in progress reports, supporting a farmer magazine, compiling detailed training guides) and systematic dissemination of the documentation were useful in spreading the approach both within MASL and beyond.
- *Extensive, systematic capacity building:* Systematic training, backstopping and refresher training for all levels of MASL staff, reinforced by working alongside the trained officers in the field, were instrumental in applying the strategy within MASL. As far as training programmes are concerned, the best sequence in training evolved as being: first PRA (focusing on attitude and skills) followed by content training (PTD, Farm Planning and Community Mobilisation) and finally Institutional Development/Organisational Strengthening focused on organisational implications of working in a participatory manner. ID/OS for middle-level managers was a first step towards managing participation and the follow-up activities in the field of organisational capacity building.
- *Ownership of the change process:* Key MASL staff members were actively involved in the scaling-up process in their own organisation. They adapted and synthesised the approach into the ongoing MASL policies of Farm Resource Management and Strengthening of Farmer Organisations, which was considered more important than “scoring points” (gaining recognition) as a discrete project at a limited scale.
- *Building alliances:* Networking was done beyond MASL in groups at national level, particularly the PTD Working Group, but always including MASL staff and resulted in spreading of the approach. Partnerships and strategic alliances were established with other projects in the country and, within MASL, with the Heads of Departments. The overall result of the efforts of all partners together was the message that good farmer participation is essential for agricultural development.

- *The messengers*: In general, local individuals were stimulated and visionaries, e.g. enthusiastic farmers, MASL staff, volunteers, were mobilised to show how PTD works and its results. The presentations by farmers and lower-level field staff to higher-level officials, for which PMHE created the opportunities wherever possible, may be the most single important factor in convincing the organisation about this approach.
- *Favourable environment*: PMHE started at the “right” time: MASL was shifting from being mainly involved in establishing infrastructure for settlers, to handing over management tasks to the farming community. All its major other donors therefore also stressed the importance of farmer participation.

## **8 REFERENCES**

1. Wanigasundera WADP & Sivayoganathan C. 1999: Study on the effectiveness of training in participatory extension methods/tools on the working styles of field extension officers. Department of Agricultural Extension, Faculty of Agriculture, University of Peradeniya.
2. PMHE Project/ETC-Lanka (Sri Lanka) and ETC International (Leusden, The Netherlands). 1999: 'Strong Together'. Video film produced by PMHE and Media House, Open University of Sri Lanka, 20 min.
3. PMHE 2000: PMHE Final Report



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