The "PTD+" approach of the PMHE project in Sri Lanka

Case-study report for research on DOLI

(Understanding Development Outcomes of Local Innovation)

(Photo: Ranjith Mahindapala)

Case-study team: Mallika Samaranayake, Ranjith Mahindapala, Hasara Kalubowila, C W Sirisena, D B Rambodagedera assisted by Chesha Wettasinha, Boru Douthwaite, Elizabeth Hoffecker Moreno and Ann Waters-Bayer

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Acronyms

AAS	Aquatic Agricultural Systems (CGIAR Research Program)
AMDP	Accelerated Mahaweli Development Programme
C2I	Capacity to innovate
DG	Director General (of MASL)
DOLI	Development Outcomes of Local Innovation
FGD	focus group discussion
FO	farmer organisation
IDIN	International Development Innovation Network
IPID	Institute for Participatory Interaction in Development, Sri Lanka
JICA	Japanese International Cooperation Agency
KII	key informant interview
KIT	Royal Tropical Institute, Netherlands
LEISA	low-external-input and sustainable agriculture
LKR	Sri Lanka Rupees
MASL	Mahaweli Authority of Sri Lanka
MEA	Mahaweli Economic Agency
MIT	Massachusetts Institute of Technology, USA
PMHE	Promoting Multifunctional Household Environments Project
PRA	Participatory Rural Appraisal
PROLINNOVA	Promoting Local Innovation in ecologically oriented agriculture and natural resource management
PTD	Participatory Technology Development
USAID	United States Agency for International Development
WB	World Bank

Acknowledgements

This case study would not have been possible if not for the unstinted and ready support of the numerous farmers in Mahaweli System C, who were very willing to reminisce about their time during the PMHE project and to share their experiences with us. We have known that the farmers are famous for their ingenuity and living with little, a hallmark when life is tough. It is nearly 16 years after the project; the farmers we met have done well and are happy – and we are grateful that they were able to share their stories with us. The study would be much less richer if not for their insights.

Equally, the Mahaweli Authority of Sri Lanka (MASL) has been very generous in their support; the Director General has been exceptionally enthusiastic in providing us with his thoughts and logistical support in System C to conduct our study. The Resident Project Manager of System C was equal to the task by arranging meetings, providing us with opportunities to discuss the study with his officials, and spending time with the team.

The study team was fortunate to interact with several key officials of MASL who were associated with the project. Some of the officials who supported the project but have now retired or left MASL gave their time to meet with the study team and provide their valuable insights. It was indeed a pleasure to work again with several ex-PMHE staff including *Praja Sewakas* who willingly travelled and spent time with the team in providing much-needed information and access to homesteads and farmers who had worked with PMHE.

We extend a big thank you for the untiring commitment of these and so many other people – too numerous to mention – who helped to make this case study a success!

The Sri Lanka Case-Study Team

12 September 2016

1. INTRODUCTION

1.1 Development Outcomes of Local Innovation (DOLI) Study

Understanding the Development Outcomes of Local Innovation (DOLI) is a study being carried out by the International Development Innovation Network (IDIN) of Massachusetts Institute of Technology (MIT), USA, and the PROLINNOVA (Promoting Local Innovation in ecologically oriented agriculture and natural resource management) network's International Secretariat hosted by the Royal Tropical Institute (KIT), Netherlands.

It is a field study that follows up on a desk study on the impacts of farmer-led approaches to agricultural research and development that had been carried out in 2013–14 by the PROLINNOVA International Secretariat. PROLINNOVA together with the CGIAR Research Programmes on Aquatic Agricultural Systems (AAS) and Climate Change, Agriculture and Food Security (CCAFS). A four-member team of researchers from PROLINNOVA examined over 100 cases and selected eleven for the desk study. The findings were published as a report, to be found at http://www.worldfishcenter.org/content/study-impacts-farmer-led-research-supported-civil-society-organizations. The key findings were also published as a paper in a journal[1].

The desk study recommended field studies into very promising cases of farmer-led approaches to agricultural research and development in order to gain a deeper understanding of the different approaches and how the outcomes came about.

The main research questions in the DOLI field study are:

- In specific cases where local capacity to innovate has been developed and/or strengthened, what outcomes and impacts resulted from this enhanced capacity?
- If positive outcomes and impact have been achieved, how has the enhanced capacity to innovate contributed to bringing these about?
- What role did the farmer-led approach to agricultural research and development play in strengthening the local capacity to innovate?

An international Study Group designed the study, developed the methodology, selected the cases, hired local research teams in each of three countries (Sri Lanka, Tanzania and Vietnam), worked together with these teams in the field and data analysis and in writing the case-study reports, and will ultimately compile the final report.

The international Study Group consists of Elizabeth Hoffecker Moreno, IDIN Research Coordinator based at MIT (USA); Chesha Wettasinha, Laurens van Veldhuizen and Ann Waters-Bayer from the PROLINNOVA International Secretariat based at the Royal Tropical Institute (KIT) in the Netherlands; Boru Douthwaite, formerly with the AAS Research Programme, now independent and based in Ireland; and Bernard Triomphe from the French Centre for International Cooperation in Agricultural Research for Development (CIRAD), based in Mexico.

[1] Ann Waters-Bayer, Patti Kristjanson, Chesha Wettasinha, Laurens van Veldhuizen, Gabriela Quiroga, Kees Swaans & Boru Douthwaite (2015) Exploring the impact of farmer-led research supported by civil society organisations. *Agriculture & Food Security* (4:4); available at <http://www.agricultureandfoodsecurity.com/content/4/1/4/#ins3>

1.2 Capacity to Innovate (C2I) framework

In a time of unprecedented change in the world that poses enormous challenges to poor and marginal communities, especially those that depend on natural resource for their livelihoods, the focus of development practitioners and programmes is on finding strategies that build local resilience to adapt to and deal with such change. For nearly three decades, a number of development practitioners from the Global South and North have partnered in initiatives that have supported local people in grassroots innovation through participatory and inclusive approaches. These efforts have led to transformative change in selected communities, whereby they have found effective strategies to adapt to externally driven change (including climate change), to ensure local food security, to increase household incomes and to improve wellbeing. Development practitioners engaged in such farmer/community-led processes of empowerment refer to an increased "capacity to innovate" or "C2I" as a key (intermediate) development outcome that leads to long-lasting impact. Although much has been learned about C2I, little has been documented in any systematic and detailed manner. This DOLI study seeks to address this gap and provide more in-depth understanding on how strengthening local capacity to innovate contributes to development outcomes within different contexts.

For the purpose of this study, the DOLI international Study Group defined C2I as the ability of individuals, groups and local systems to find new and better ways of doing things and to continue innovating. The Group saw C2I as being made up, in turn, of four key capacities:

1) Creative problem-solving and innovativeness: finding new and better ways of doing things
2) Iterative experimentation and learning: testing, monitoring and improving new ways of doing things
3) Forming and leveraging linkages: connecting to new sources of information, resources and opportunities
4) Taking joint action for change: working with others to achieve common goals.

1.3 Selection of Sri Lanka case

The Promoting Multifunctional Household Environments (PMHE) project in Sri Lanka was selected as one of the three cases[2] from those shortlisted for the DOLI study because these cases best fitted the criteria for selection of in-depth field studies, the main ones being:

- There is evidence that C2I has been strengthened through the intervention and that multiple types of innovation were taking place;
- Diverse stakeholders of agricultural research and development had been engaged in the intervention;
- Smallholder agriculture is the mainstay of the local economy;
- The project lasted 5–15 years and stopped at least 10 years ago;
- The case produced technical and institutional change;
- Activity resulting from enhanced C2I has spread beyond the original people involved;
- Good local researchers are available to do the study;

[2] The other two cases selected were Participatory Technology Development in Hoa Binh Province, Vietnam, and Creative Capacity Building in Morogoro, Tanzania.

- Researchers are able to find documents and people who were involved in the case;
- Local stakeholders show a strong interest in the results of the study;
- There are no major health or safety risks to the research team;
- At least one case-study team member is fluent in the local language.

The case in Sri Lanka would examine the "Participatory Technology Development (PTD)+" approach that had been used by the PMHE project.

1.4 The PMHE project and its context

PMHE was implemented in the period 1991 to 2000 under a bilateral development cooperation agreement between the Government of the Netherlands and the Government of Sri Lanka. Funding for the project came from the Directorate General for Development Cooperation (DGIS), while the not-for-profit development organisation ETC Foundation based in the Netherlands provided technical support. The local counterpart was the Mahaweli Authority of Sri Lanka (MASL). A timeline referring to the development of the Mahaweli areas and the PMHE project can be found in Annex 1.

The project area was Mahaweli System C, one among several irrigated settlements put on the country's map by the Sri Lankan Government through the Accelerated Mahaweli Development Programme (AMDP) (see Figure 1). Although initially planned for 30 years, the AMDP was completed within six years and included the building of five major dams and power plants and settlement of nearly 125,000 families on about 144,000 ha of land supplied with irrigation facilities for farming. The areas to receive irrigation under this huge scheme were divided administratively into so-called Systems such as B, C, G, H, L etc. Each System was further divided administratively into Blocks and Units, with the Unit being the smallest and equivalent to a "village".

Initially, this programme was under the Ministry of Lands, Irrigation and Mahaweli Development, but in 1997 a separate Ministry of Mahaweli Development was established. The MASL is the sole government agency responsible for all development activities within the Systems with two sub-agencies: Mahaweli Engineering Construction Agency (MECA) responsible for the irrigation infrastructure and Mahaweli Economic Agency (MEA) responsible for settlement of families and the agricultural, social and economic development.

Mahaweli System C, where PMHE started its interventions in 1991 working directly in the field, covered an area of about 66,000 ha and was settled with 22,000 families. Nearly all the settlers at the time were ethnic Sinhalese (the major ethnic group in Sri Lanka), who had been displaced by the reservoirs or who were landless peasants and who came from other parts of the country. Selection of settlers was made according to a system called "land *kachcheri*," which used a point system. Each family received 2.5 acres of irrigated land for rice farming and 0.5 acres as a homestead. All settlers were provided with a starter package of assistance, which included house-building materials, seeds and seedlings, food aid for 18 months etc. This assistance package was meant to start them off on a path of development based on small-scale farming, with rice as the main cash crop and with the homegarden to meet the food and nutrition needs of the household. The MASL staff at community level consisted of Field Assistants (FAs), who gave advice on agriculture, and Unit Managers, who looked after matters related to community development. Several Units formed the next administrative level called a Block. Block Managers oversaw all development activities at the Block level and were supported by a team of subject-

matter specialists consisting of Agricultural Officers (AOs), Community Development Officers (CDOs), Institutional Development Officers (IDOs), Land Officers (LOs) and engineering staff.

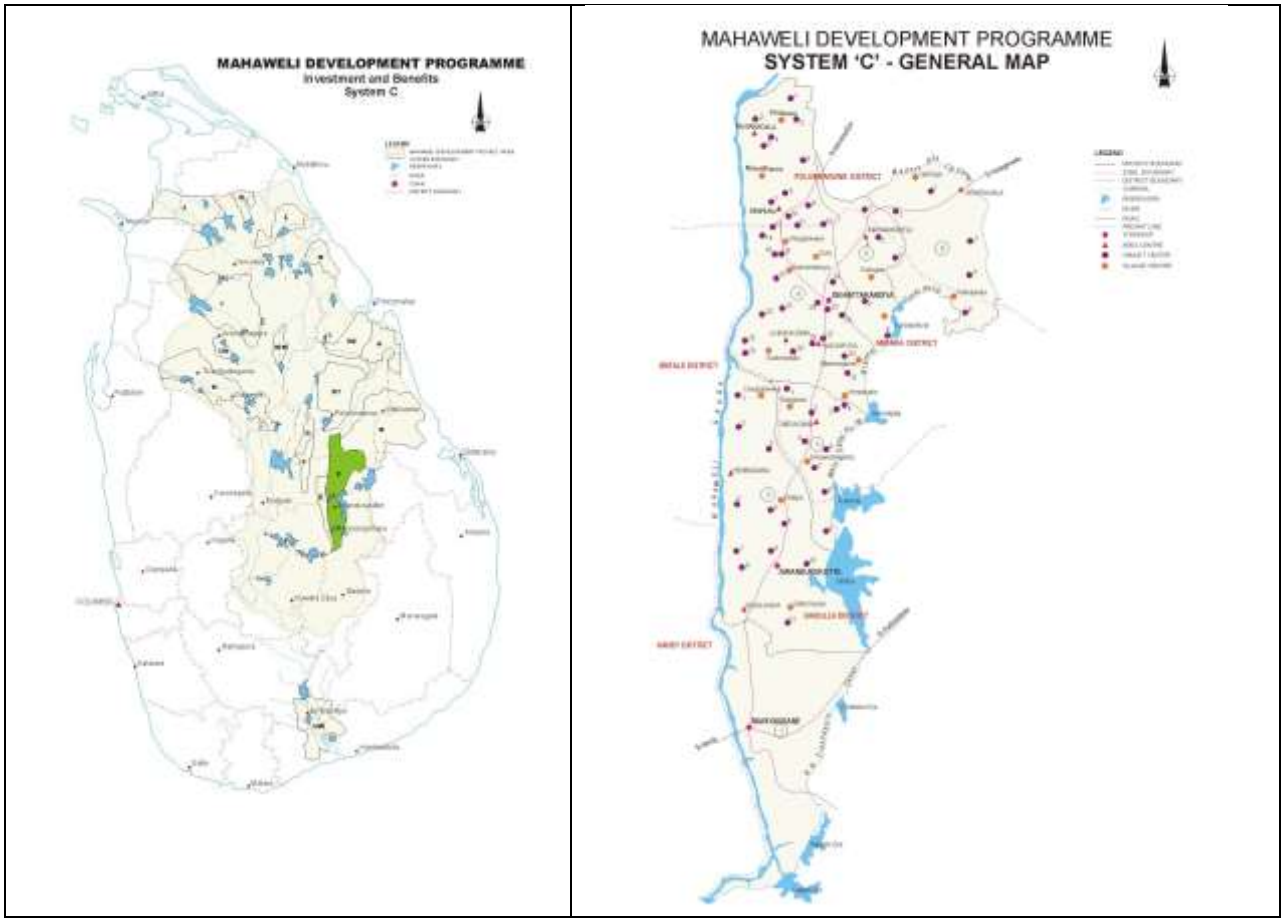


Figure 1: Map of Mahaweli System C (right) and the location of System C in Sri Lanka (left)
Source: Mahaweli Authority of Sri Lanka < mahaweli.gov.lk/en/maps.html>

1.5 The PMHE approach

The PMHE project started in 1991 with a 9-month phase of participatory action research in two Units – Dolakande and Tuwaragala – to identify the major bottlenecks to agricultural and social development faced by settler farming families. These bottlenecks included: blueprint approach to development and top-down approach to implementation of interventions; problems related to background/origin of settlers; poor social cohesion and weak organisational capacity; dependency on the MASL on account of the extensive aid package; inability to make farms productive and therefore to have sufficient income to maintain their families; and indebtedness.

Having identified these bottlenecks, the second phase of the project (1992–94) developed an approach to sustainable agricultural development together with the farming families and the development staff of MEA. This approach hinged on several key elements that were based on participatory approaches and included Participatory Rural Appraisal (PRA) as a means of engaging the communities in analysing their own problems and seeking appropriate and actionable solutions, sustainable farm planning based on LEISA (low-external-input and sustainable agriculture), Participatory Technology Development (PTD) for stimulating farmer-led experimentation and farmer-to farmer exchange, community mobilisation, and

organisational development in small groups to build cohesion, leadership and solidarity within the community, with attention to gender integration.

In its third and final phase (1994–2000), the emphasis was on institutionalisation of the approach within the MASL through capacity building and strengthening of its staff. More than 1000 MASL staff members across all levels of the organisation were trained in key aspects of the approach. Five training modules were tailored to meet the needs of the MASL staff – PRA, farm planning, PTD, community mobilisation, institutional strengthening and organisational development. PMHE staff trained, mentored and accompanied MASL staff to integrate elements of the approach into their day-to-day work within System C and beyond, in Systems B, G, H and Uda Walawe (see Figure 1).

In addition, PMHE trained a group of 20 community-based extensionists/social mobilisers (8 men and 12 women), called *Praja Sewakas*, who were active in their communities. PMHE's intention was that these *Praja Sewakas* would continue their work, in terms of these participatory approaches, even after the project wound up. This group went through a systematic capacity-building programme that consisted of two-day residential training every month with close mentoring and accompaniment by PMHE staff in between the training sessions. To start with, the *Praja Sewakas* worked alongside PMHE staff but, as they gained confidence, they worked independently in the villages as an extension of the project team.

2. METHODS AND STUDY PROCESS

2.1 Selection and composition of Sri Lanka case-study team

As mentioned in Chapter 1, the PMHE project in Sri Lanka was chosen by the DOLI Study Group as one of the cases to be studied in depth. The Study Group divided itself into smaller "country teams" to manage the research – in terms of content guidance as well as logistics and administration. One member of the country team was made responsible for coordination, which included selection and subcontracting of local researchers. In the case of Sri Lanka, the country team was composed of Chesha Wettasinha and Boru Douthwaite, with Chesha Wettasinha responsible for coordination. Ann Waters-Bayer later joined this country team.

The Study Group developed general guidelines for selection of local researchers, which were finetuned by the country teams, depending on the specific requirements of the selected case. Among the criteria included were experience in qualitative and participatory research, familiarity with the research area and its historical, political and socio-economic situation, understanding of smallholder agriculture and natural resource management in the research location, good understanding of gender and other social inclusion issues, fluency in the local language (in this case, Sinhalese) as well as English, and having the organisational capacity to undertake such field-based research on a tight budget.

The Study Group launched a call for researchers through its local networks and contacts and received applications from three potential Sri Lankan researchers. After screening the applications and scoring them on the list of 11 criteria, they selected Mallika Samaranayake from the Institute for Participatory Interaction in Development (IPID) in Sri Lanka to undertake the local study. This selection was further influenced by IPID's commitment and work over the last three decades on community development through the introduction of participatory approaches for supporting empowerment of local communities to manage resources and gain access to available services. IPID's focus has been mainly on the improvement, promotion and practice of participatory methodologies currently being adopted in Sri Lanka and in other countries. Its work in recent times included conducting evaluations using participatory methodologies, social assessments, participatory research for social and poverty assessments, and training in a number of areas related to participatory planning for improving the functioning of organisations and their institutional environment.

Moreover, IPID was the only candidate that had extensive experience in the study area, Mahaweli System C. In fact, PMHE had used IPID during the early years of the project to build capacity of its team and MASL officers in farmer-centred participatory approaches, mainly PRA. IPID continued to have contact with PMHE staff through the national PRA network that it hosted for several years. Thus, IPID had an institutional history of the progress of PMHE in System C, and was well placed to support the Sri Lanka study. Furthermore, IPID had been a consultant for MASL in introducing participatory methodologies and was familiar with the MASL resettlement programmes.

IPID fielded a strong team comprised of Mrs Mallika R Samaranayake (Chairperson, IPID, and Team Leader), Mr Ranjith Mahindapala (Research Scientist and Monitoring and Evaluation), Ms Hasara Kalubowila (Social Scientist), Mr C W Sirisena (ex-PMHE staff, Associate Consultant, ETC Lanka) and Mr D B Rambodagedera (ex-MASL and PMHE staff, now retired).

2.2 Research questions

The main research questions for the DOLI study are mentioned in Chapter 1. In the case of Sri Lanka, the research focused on the "PTD+" approach used by the PMHE project as detailed in Chapter 1. Thus, the main research questions were related to gaining deeper insights into how the PTD+ approach contributed to an increase in capacity to innovate among settler families and communities and how the MASL staff members were supported to take on elements of the approach in their daily work. The research questions included:

- What are the local capacities to innovate that have been developed and/or strengthened by the PTD+ approach of PMHE?
- What outcomes and impacts have resulted from these enhanced capacities?
- What role has the PTD+ approach played in strengthening capacities associated with C2I and in contributing to observed outcomes and impacts?

2.3 Research methods and tools

The methods and tools used in the case study are briefly outlined below.

(a) ***Desk review***

A desk review of the available literature was carried out in order to understand the context under which the project was launched, the status of settlements, and the needs of the settlers in terms of agricultural development. The expected outcomes of PMHE were assessed through the project terminal report and other documents available.

(b) ***Focus group discussions***

Focus group discussion (FGD) was the main tool used to seek qualitative information on PMHE's approach, role and outcomes. The groups included farmers, *Praja Sewakas,* ex-PMHE staff and staff of MASL. The FGDs were conducted based on a pre-determined structured format.

(c) ***Key informant interviews***

Key informant interviews (KIIs) were conducted with selected individuals. These included ex-PMHE staff, ex- and current MASL staff and selected farmers and *Praja Sewakas* who attended the preliminary FGDs. As in the case of FGDs, KIIs were conducted on the basis of a structured guideline.

(d) ***Field observations***

The case-study team visited a number of families and their land holdings to gather information on sustainable farm planning and development of the irrigated rice fields as well as the homesteads, including integration of crops, agroforestry and animal husbandry, and to seek the views of the family members on how they had developed their homesteads using the farm-planning approach introduced by the PMHE project, and the general condition of the homesteads at present. Specific questions related to the approach, viz. farm planning, farmer experimentation and farmer-to-farmer exchange, were used to probe further and gain deeper insights.

2.4 Locations and other stakeholders involved in the case study

The location of the case study was Mahaweli System C; the assessments were concentrated in three Blocks of System C, viz., Veheragala, Mahawanawela and Cadjuwatte.

The stakeholders engaged in the case study were as follows:

- Farm families who were involved in PMHE work; on occasion, the original settlers were not available but the second generation was available for discussions;
- *Praja Sewakas*, who had been trained and employed by PMHE;
- Ex-staff of PMHE and ETC, both in Colombo and System C;
- MASL staff, both at Headquarters as well as in System C;
- Former key staff of MASL who had knowledge of or were involved with PMHE during the project period.

2.5 The case-study process

The case-study process consisted of several steps, as follows:

Step # 1

As a prelude to the visit of the case-study team, IPID prepared a short paper titled "Sri Lanka Context Paper" setting out the country context, and a narrative on the history of the Mahaweli Programme together with specific achievements of System C supported by data and information sourced from literature[3].

The Sri Lankan case-study team members made a reconnaissance visit to System C on 9–10 May 2016 and met with the Resident Project Manager and the Deputy Resident Project Manager to apprise them of the PMHE project and the current study, and to seek their assistance and cooperation, supported with an introduction by the Director General to the System C staff. The officials readily agreed to the study and undertook to organize an FGD with Mahaweli officials when the larger case-study team would visit the area later in May. The Sri Lankan case-study team members also visited the Block Offices at Veheragala and Mahawanawela to seek the support of the Block Managers of MASL System C for the study, who permitted the team to hold FGDs in their offices. The team also met with a number of ex-employees of the PMHE project, *Praja Sevakas* and farmers from Cadjuwatte and Mahawanawela who were involved with the PMHE project to apprise them of the upcoming study and to seek their cooperation.

Step # 2

Three members of the international Study Group – Boru Douthwaite, Chesha Wettasinha and Elizabeth Hoffecker – arrived in Sri Lanka in late May 2016 and had initial meetings with Mallika Samaranayake, Ranjith Mahindapala and Hasara Kalubowila on 23 and 24 May at IPID's office in Colombo. The DOLI study and its objectives were discussed at length and preparations were made for the first phase of research in Mahaweli System C. During these discussions, Boru Douthwaite presented the Theory of Change that had been constructed using information from PMHE's project conclusion report.

On 24 May 2016, the case-study team interviewed two ex-PMHE staff members and had a discussion with Mr S W K J Samaranayake, former Director General of MASL.

[3] Sri Lanka Context Paper; IPID; 3 May 2016

On 25 May 2016, the case-study team made a courtesy visit to Mr Anura Dissanayake, MASL Director General, to apprise him of the PMHE project and the DOLI study. He welcomed the study and readily agreed to assist by way of arranging interviews with MASL staff and providing facilities in System C. He hoped that the study would provide lessons useful to MASL.

On the same day, the case-study team conducted interviews with several current and former MASL staff members who had been with the agency at the time when PMHE was implemented. These interviews took place at the MASL headquarters in Colombo. The names of the individuals interviewed are found in Annex 3(a).

On 26 May 2016, the case-study team travelled to Kandy, where they interviewed several ex-PMHE staff as indicated in Annex 3(a). On 27 May, the case-study team travelled on to Dehiattakandiya in Mahaweli System C.

The case-study team paid a courtesy visit to Mr K A C Wimal Kumara, Resident Project Manager, MASL System C, to brief him on the study. Mr Wimal Kumara was appreciative of the study and extended his support for all arrangements in System C.

Following these consultations, three FGDs were held in Mahaweli System C involving farmers who were closely associated with PMHE and *Praja Sewakas* of PMHE. The schedule and the participants of these FGDs are to be found in Annex 3(b).

The FGDs with farmers were structured as follows:

30 min	Introduction of participants
05 min	Introduction to the research study
45 min	Plenary brainstorming on change over time; change of situation between the beginning of PMHE and today
15 min	Brief overview of the PMHE project
20 min	Individuals identifying the most significant project interventions
45 min	Group work
30 min	Presentation of group work in the plenary

The discussions were held in Sinhalese, as all participants were comfortable in that language. Interventions made in English were simultaneously translated into Sinhalese by one of the case-study team members.

The structure adopted in the group work to elucidate information was as follows:

- Groups were selected randomly, and the following tasks were given to each group:
    - Identify a leader for the group from amongst the participants to facilitate the group discussion, and for eventual presentation of the group's findings in the plenary;
    - In respect of the PMHE project, identify the most significant events or activities that had an influence on your lives;
    - Discuss the individual responses and, as a group, identify the most important facts and experiences in order of importance;
    - Present the findings of the group in the plenary; in explaining the findings, provide reasons for your judgments.

FGD with MASL Officers [Annex 3(c)]

The FGD with MASL officers was structured differently. After an introduction of the participants, the purpose of the study was explained, followed by a brief overview of the PMHE project, as many of the participants were not aware of this project.

The participants were then categorised into three groups, depending on their work, as follows:

Group 1. MASL officers who were involved with the PMHE project and had first-hand knowledge;

Group 2. MASL officers involved in Agriculture, Livestock and Fisheries;

Group 3. MASL officers involved in institutional aspects (training, block management, overall management).

The groups were given the following three areas to deliberate and provide a synthesis of their deliberations in a plenary session.

1. How do Mahaweli farmers participate in the decision-making process at different levels?
2. How do you identify and introduce new things?
3. What are the challenges faced by various stakeholders in their skills development?

The findings of the groups were recorded for analysis.

In addition, the case-study team visited several homesteads to gain first-hand knowledge of what PMHE had done in terms of its PTD+ approach and for gathering information relevant to the study's research questions.

Step # 3

Back in Colombo, the case-study team made a preliminary analysis of the information collected from the FGDs and KIIs, and matched the information with the Theory of Change hypothesis put forward for the PMHE project. The Theory of Change was then adapted accordingly (see Annex 2). Following this analysis, it was agreed that in-depth KIIs would be carried out with at least six selected farmers who had taken part in FGDs and with three *Praja Sewakas*. These in-depth interviews were carried out on 7 and 8 August 2016 by Mallika Samaranayake, Ranjith Mahindapala and Hasara Kalubowila in Dehiattakandiya [Annex 3(d)].

Step # 4

Chesha Wettasinha and Ann Waters-Bayer of the international Study Group arrived in Sri Lanka in August 2016 and, together with Mallika Samaranayake and Ranjith Mahindapala, they further analysed the information from Steps # 2 and 3 to derive the preliminary findings of the study. In this process, they identified a few areas that needed further investigation. As such, six more field interviews with farmers were conducted by Ann Waters-Bayer and Chesha Wettasinha supported by C W Sirisena in System C in the period 23–25 August 2016. These interviews probed the linkages between farmer experimentation, farmer-to-farmer-extension, farmer groups and enhancement of capacity to innovate [Annex 3(e)].

A meeting was held on 26 August 2016 at the Nature Lanka Hotel, Dehiattakandiya, to present the preliminary findings of the study to MASL officials, selected farmers and *Praja Sewakas* [Annex 3(f)][4] and to obtain their feedback.

[4] Several farmers who were involved in previous FGDs and invited to this workshop could not attend due to them being busy in the fields for paddy harvesting.

The meeting was graced by Mr Anura Dissanayake, Director General of MASL. The Resident Project Manager, System C, welcomed the participants; Ann Waters-Bayer gave a brief introduction to the DOLI study, while Felix Wijesinghe, former PMHE staff, introduced the PMHE project. "Strong Together", a video on PMHE's approach was screened in Sinhala. After a presentation of preliminary findings by Ranjith Mahindapala, perspectives of farmers, *Praja Sewakas* and MASL staff were presented, followed by a group consultation. The agenda of the meeting is in Annex 3(g).

The Director General, responding to the preliminary findings of the study and the comments of the participants, noted that a substantial work programme had been implemented by the PMHE project to empower the farmers and to build rapport between the farmers and MASL. He also stated that H E the President, who is also the Minister in charge of MASL, is desirous of taking MASL into the next stage with the new Mahaweli areas opening up under the Moragahakanda and Weli Oya schemes. The preliminary findings from the study highlighted the tangible benefits generated by System C, but the PMHE work also generated significant intangible benefits. The lessons from PMHE, in particular introducing the participatory approaches for solving farmer problems and building peaceful and collaborative relationships among settlers, would be invaluable in the new areas of Mahaweli, which cover approximately 84,000 ha under the North Central Province canal programme, Kiwul Oya and Kalinga Oya, and involve settlers from three ethnic groups. In conclusion, the Director General expressed the hope that an avenue could be explored for continuing the good work of PMHE in the new Mahaweli areas.

The meeting endorsed the preliminary findings of the study, as presented.

Follow-up meeting with DG of MASL

The opportunity to meet the DG of MASL for a final debriefing at the MASL Head Office in Colombo one week after the above-mentioned workshop and to hand over to him a set of PMHE publications, was found to be very productive. He considered his participation in the workshop as a learning opportunity to understand the impacts of the farmer-led, participatory approach to development emerging from PMHE's experience. He expressed his intention to have younger MASL officers recently recruited to the System to be trained on such approaches with the possibility of replicating this valuable experience in the new Mahaweli areas. He also wished to revive the training capacity within the MASL by using the expertise of ex-PMHE and IPID staff as well as by using the few trained MASL staff still in the agency.

3. MAIN FINDINGS

3.1 PMHE approach as perceived by participants

It is about 16 years since the project *Promoting Multifunctional Household Environments* (PMHE) was closed. Yet, the farmers and the staff of MASL who were involved with PMHE remember the project well, as reflected during the KIIs and FGDs.

The key perceptions of the respondents could be summarised as follows:

- PMHE was seen as a project that provided "software" rather than materials and funds, which are usually provided by development projects. It applied strictly a no-handout policy. "Software" in this context means technical know-how, mentoring and providing hands-on experience.
- Of the key elements of PMHE, sustainable farm planning and farmer experimentation have influenced both farmers and MASL. Key concepts in sustainable farm planning included choosing the correct soil type for crops, understanding the lie of the land in order to adapt agronomic practices to site-specific conditions, choosing crops depending on the soil type, recycling farm resources etc. It was observed that farmers are still using key aspects of the PTD approach as and when an opportunity arises. In the homegardens and paddy fields, there is evidence of continued experimentation, such as trying out and successfully growing new tree species that others did not believe could grow in the dry zone of Sri Lanka.
- A farm-diversification approach using agroforestry is perceived by farmers as a good investment. In particular, planting of teak including establishment of teak seedling nurseries for production of teak stumps is still being continued. The teak trees are now about 20 years old and have proved to be a good investment, as timber can be readily sold at a premium price. The keen private-sector interest in generating energy from tree biomass (dendro) has created a new source of income for the farmers who developed their homegardens and fenced them with *Gliricidia*, a fast-growing woody species that regenerates after cutting.
- Introduction of animal husbandry was also perceived as an important contribution to the economy of the farmers. PMHE's facilitation of establishing a milk collection centre at Cadjuwatte has had a multiplier effect on many farmers engaging in raising dairy cows; the results are evident today in terms of the volume of milk produced in System C and the increased incomes of the Cadjuwatte farmers.
- Non-farm income-generating activities such as the selling of homemade chilli and curry powders are being continued.
- The benefits of forming small groups of farmers have had a significant impact on the way farmers act. Although most of the original small groups no longer exist, the principles have been embedded into farmer organisations (FOs), established under the Agrarian Development Act. The experience from the small groups has been invaluable in influencing how the business of the FOs is conducted. Members of small groups have become leaders in these FOs. Some of the larger commercial finance companies have taken advantage of the small-group concept to provide loans, albeit at very high interest rates, to farmers with only the guarantee of a few fellow farmers.
- The LEISA practices introduced by PMHE remain in the minds of farmers and MASL officials. Although external inputs in farming have increased, partly in an attempt to

reduce labour inputs as the farmers become older, some farmers still produce compost in their homesteads primarily to reduce external nitrogen inputs. Farmers still use LEISA practices such as mulching, cover cropping, thrash lines, hedgerows etc.

- PMHE's interventions in empowering farmers to link with external agencies have borne fruit. The farmers are now competent to negotiate with traders, banks and commercial lending companies, to seek technical assistance from MASL and other agrarian agencies for agriculture and livestock-related income-generating activities, and to manage their savings and credit activities.
- The farmers also hold in esteem their knowledge gained from PMHE on the holistic approach to small-group management (savings and credit, sharing knowledge about farming, transparent record-keeping, harmony and cooperation, public speaking and leadership learnt in group dynamics), i.e. the groups did not focus on only one thing.
- The *Praja Sewakas* introduced by PMHE have been a signal success and are fondly remembered by the farmers. It is noteworthy that some of the *Praja Sewakas* are still in contact with the farmers, the latter often seeking advice from them on many matters, not only related to agriculture. The experience gained by *Praja Sewakas* in PMHE has stood them in good stead, as some of them have found employment in MASL and other agrarian-related agencies on the strength of their PMHE training and experience, even if they did not have high levels of formal education. They are also sought after by governmental social-development programmes because the *Praja Sewakas* had a good reputation as skilled community organisers.

3.2 Development outcomes of PMHE approach (at community level)

(a) Individual and group capacities

The small-group dynamics provided much-needed confidence to the farmers in a number of ways. It is to be noted that the settlers came from all parts of the country and were unknown to each other. It is in this context that the importance of groups can be measured; they developed solidarity and social cohesion within a community to form a "village" akin to their original villages. The local social network became stronger, and the groups helped fellow farmers in their day-to-day needs such as emergencies, funerals, weddings and other social events. Formation of groups also enabled the farmers to discuss and arrive at solutions for their problems, adapt new technologies, and seek loans from financial institutions. The group dynamics also brought a sense of responsibility to the individuals; these were reflected, for example, in timely repayment of loans (to free up the guarantees provided by fellow farmers).

(b) Household livelihoods (including financial) and quality of life

Overall, there is evidence of increased household income and better quality of life. Compared to the financial condition at the time of settling, the farmers have been able to increase their household income primarily through systematic paddy cultivation, home gardening, planting timber trees and other income-generating activities, often supported with loans from banks. Many positive social and economic indicators are visible. These include savings in the banks, better educated children including a significant number of undergraduates, motor vehicles and agricultural machinery in the homesteads, better and more permanent housing including modern comforts etc. In general, there is improved financial security and access to food; many of the households

that worked with PMHE now have enough food for the family sourced only from their own paddy field and homegarden.

(c) Village/community development (including socio-cultural values)

There is evidence of improved village infrastructure and improved options for children as a result of PMHE interventions. It has been possible for the farmers to engage with authorities to seek village improvements. There is increased self-esteem and improved social standing, particularly resulting from the leadership qualities acquired by the community. Community members have been able to secure employment because their increased capacities have been recognised by potential employers. Additionally, farmwomen have been empowered, and engage in community activities, taking leadership – including, in one instance, entering into local politics.

(d) Environment

At the time settlers came into System C in the dry zone, the conditions were described as harsh; the land was overrun with shrub jungle and pernicious weeds such as *Pennisetum purpureum* and *Imperata cylindrica.* The soil was infertile, and water was not available when needed. The conditions today are much different; the microclimate of homesteads, which reflect vegetation similar to that in the intermediate zone, is quite comfortable. Crops such as pepper and cacao, which are traditionally grown in the wet zone, are often found in the homesteads, again reflecting the improved environmental conditions.

(e) Community capacity to innovate

PMHE interventions to empower communities to innovate have shown impacts. There is evidence of enhanced knowledge and skills related to integrated farming such as agroforestry, animal husbandry and growing various crops besides paddy. Farmers are able to adapt to changing conditions, for instance, they have begun growing crops that require less water such as sesame and millet as the quantity of irrigation water they receive has been reduced. Farmers are engaged in value-adding activities to increase household income (e.g. processing paddy for rice) or cultivating seed paddy instead of normal paddy. They are also able to make forecasts, plan, budget and manage new income-generating ventures such as cultivation of flowers (e.g. *Anthurium*) or pepper. A cadre of proactive farmers, who are confident to seek out new opportunities, manage risks, find solutions to local problems and adapt to change is now found in System C.

3.3 Development outcomes of PMHE approach (at MASL level)

The DOLI study in Sri Lanka deliberately restricted itself to development outcomes at community level. However, in the course of the research, some information in this regard was gleaned from the FGDs and KIIs. These findings are not conclusive and would require further research for verification.

PMHE provided considerable support to MASL in capacity development in a number of areas, including introducing participatory approaches in planning, implementation and monitoring, the farm-planning approach including PTD and introducing approaches such as farmer-to-farmer sharing. The small-group approach allowed the farmers and MASL to jointly decide on water issue and *yaya*[5] cultivation practices.

[5] *Yaya*: a tract in which the paddy fields of a group of farmers is located.

Nowadays, farmers are not able to get the quantity of water they desire. When decisions related to water were debated at the so-called "*kanna*" (seasonal) meetings, farmers were able to bring in their views and demands. Currently, farmers feel that they are no longer able to influence decisions regarding water issues as these are being made at higher levels. Farmers need to have access to influencing decision making regarding water distribution at much higher levels than before.

The study revealed that PMHE's approach in its entirety has not been institutionalised within the MASL. However, several aspects of the approach are considered very useful and continue to be applied by MASL staff in their work. In some cases, these competences have been passed on to new colleagues in an informal manner. Only a handful of the staff that were involved with PMHE or received training and education under PMHE are in the organisation now.

4. ANALYSIS OF FINDINGS

4.1. Key activities and mechanisms that led to the outcomes and longer-term impact (focusing on links between enhanced C2I and outcomes/ impacts)

This analysis is based on six elements of capacity to innovate at the local level, i.e. in the farming households and communities in System C with which the PMHE project was working. The summary findings are presented in Table 4.1. We then give a commentary on the activities and mechanisms.

(a) **Increased self-confidence and ability to envision change and assess options and trade-offs**

PMHE introduced a number of interventions to enhance the self-confidence of the farmers as well as of the MASL staff working with the farmers. Some of the key interventions included training in sustainable farm planning using participatory approaches, low-external input and sustainable agriculture (LEISA) concepts and individual visioning. Each farm family undertook a hands-on visioning and planning exercise to design their "dream" farm, with support from a multidisciplinary team made up of PMHE and MASL staff members, who brought in relevant technical expertise and facilitated the process. Exchange visits by farmers to other farmers, both in System C as well as elsewhere, were organised. Farmers were also supported in acquiring relevant knowledge through exposure visits, for example, to the Mahaberiatenna Farm to focus on livestock management, and also to other crop-research farms/ stations, to marketing organisations etc. PMHE also organised dialogues among farmers and farmer groups to share experiences widely and provided leadership training and exposure to events that required farmers to exercise their leadership roles.

<u>Outcomes</u>

Key outcomes are:

- Farm plans have been made to develop homesteads and paddy lands, resulting in optimising the use of resources and increasing the household income;
- Farmers have gained in their ability to solve problems in their homesteads/ paddy lands, and have introduced new ventures and techniques for improving income generated from the homesteads and paddy lands;
- Farmers have acquired the confidence to engage in non-farm income-generating activities;
- Farmers have acquired skills and competence in negotiating and/or putting forward their needs to authorities and external service providers.

Table 4.1 – Summary of findings

Elements of capacity to innovate	Who has this capacity?[6]	How was this capacity developed?	How has this capacity been used?	Results	Impacts/significance
1. Increased self-confidence and ability to envision change and assess options and trade-offs	• Farmers • Farmer groups	• PMHE providing training in farm planning including hands-on planning • PMHE organising exposure visits to other farmers, research farms/stations • PMHE facilitating farmer-to-farmer exchange • PMHE providing leadership training to small groups • PMHE providing training in participatory methods	• Making farm plans to develop homesteads and paddy lands (e.g. farmers confident about introducing new practices/ technologies in their homesteads) • Problem solving in their homesteads/ paddy lands • Engaging in non-farm income-generating activities (e.g. adding value: turning paddy into rice) • Negotiating and/or putting forward farmers' needs to authorities (e.g. water issues, bargaining for sale price of paddy) • Assisting other farmers in their work	• Increased household income • Reduced external debt • Recognised as a leader in society • Sustainable interdependence of farmers by helping each other	• Improved financial security • Improved quality of life (as indicated by assets, education, health, recreational activities etc.) • Increased self-esteem • Improved social standing
2. Increased capacity to engage in iterative planning and reflective learning (e.g. plan, budget, manage, implement, monitor, reflect,	• All farmers and small group members who took direct part in PMHE activities and some farmers	• PMHE staff mobilising small (mostly neighbourhood and activity-based) groups and training/ mentoring in PRA, farm planning, PTD, community mobilisation and organisational development	• Farmers drew up farm plans according to their wishes/ needs and implemented them systematically • Small groups drew up group plans and executed them systematically	• Well-developed homegardens and paddy lands that integrate (new) crops, livestock, trees and LEISA elements • Farmers and small-group members have a variety of skills	•

[6] The term 'farmers' is used to denote those farmers who were engaged with PMHE.

Elements of capacity to innovate	Who has this capacity?[6]	How was this capacity developed?	How has this capacity been used?	Results	Impacts/significance
evaluate and adjust plan)	who learnt from them and from MASL staff[7]	as interlinked components of approach • PMHE staff accompanying (regular follow-up visits, discussions, systematic record-keeping, M&E of activities) with each involved farmer and small group in their activities for at least two years	• Farmer and small groups have kept open and clear records, monitored them, evaluated activities/ progress regularly and in a transparent manner	such as planning, budgeting, record keeping, M&E • Farmers and small group members are capable of speaking in public, facilitating meetings/events, holding office, managing funds etc.	
3. Increased ability to try out and adapt new things	• Farmers (men and women), small-group members, some MASL staff as well as staff of other development projects (e.g. those with ties to PMHE) to support processes of farmer-led problem-solving and innovation	• Farmers learning how to use inputs/resources efficiently/ economically through applying and adapting LEISA practices in homesteads and on paddy land, making and implementing farm plans and trying out different forms of savings • Farmers experimenting with new things (e.g. crops, livestock, trees) and thus gaining better understanding of them • PMHE staff providing close follow-up and monitoring, mentoring and accompaniment	• Farmers diversified their homegardens, integrated crops, trees and livestock, and adapted and integrated LEISA practices for crops, trees, animals and soil and water management • Farmers then experimented with new non-paddy crops/ livestock/ tree species and farm management practices • Small groups embarked on a variety of (new) group activities and set up new enterprises	• Sufficient and safe food for the family • Enhanced knowledge and skills related to integrated farming such as agroforestry, animal husbandry and growing various crops besides paddy • Increased income from sale of agricultural produce • Increased bargaining power due to new ways of processing agricultural produce • Pleasant micro-environment • Improved financial security • Access to wood for building of own homes, furniture and sale • Proactive farmers, who are confident to seek out new	•

[7] Focus Group Discussions with farmers and MASL staff

Elements of capacity to innovate	Who has this capacity?[6]	How was this capacity developed?	How has this capacity been used?	Results	Impacts/significance
		• MASL staff taking on new elements of the PMHE approach in their own work with the communities (farm planning, experimentation)		opportunities, take and manage risks, find solutions to local problems and adapt to change	
4. Increased ability to link with external actors and to utilise linkages strategically to support own plans	• Farmers • Small groups	<u>Links to banks</u>: • PMHE facilitated rural bank to provide mobile banking system for farmers; Mahaweli Office gave office space to bank • Formation of small groups gave farmers more credi-bility to link with banks[8] • Training and mentoring by PMHE in savings & credit helped farmers gain knowledge and experience in managing money[9] • Creation of small-group funds that served as guarantee for loans (FGD2 Cadjuwatta) <u>Links to MASL staff</u>: • PMHE linked farmers and MASL staff in farm-planning activities; this "developed friendship" between them	• To gain access to formal financial services, e.g. to open accounts at commercial banks, to take out loans at lower interest rates (FGD3) and larger amounts than they could as individuals (FGD plenary) • Farmers obtained technical advice from MASL staff (e.g. growing *Anthurium*; farmers knew where to find information and support for mushroom growing, livestock, rice milling and home gardening – FGD1, 28.05.16) • Farmers accessed resources from MASL, e.g. plot of commercial land for *Ruhunu Shak*ti Group (see Box 1) • Farmers gained access to and used for own benefit new groups proposed by other	• Better financial conditions for loans (e.g. 50% capital from government; farmers need to put in only 50%, so essentially grants) • Reduced vulnerability • Increased assets (loans helped them buy farm inputs, set up livestock enterprise etc.) • Access to more information and technical support • Participation as groups in other development programmes • Gained employment with other development programmes (*Praja Sewakas*) • Established dairy system through links with Nestlé and others	• Improved financial security • Stronger social network of actors supporting processes of local innovation and locally-led problem-solving • Improved village infrastructure • Improved options for children

[8] Focus group discussions and key informant interviews with farmers and *Praja Sewakas*
[9] Focus group discussions and key informant interviews with farmers and *Praja Sewakas*

Elements of capacity to innovate	Who has this capacity?[6]	How was this capacity developed?	How has this capacity been used?	Results	Impacts/significance
		• PMHE promoted PTD as approach to agricultural extension by MASL • PMHE arranged events in which farmers could speak directly with MASL decision-makers • Strengthening farmers' self-confidence to interact with MASL staff through i) experiencing respectful interactions with PMHE staff, ii) knowledge and skills imparted by PMHE and iii) feeling of having voice gained from their work in groups + confidence to stand up and present one's case (FGD plenary) <u>Links to other programmes</u>: • PMHE staff made links to other programmes to exchange information • Mentoring of farmers in managing small groups that can interact with other programmes <u>General</u>: • PMHE helped farmers get to know many people in the	projects (e.g. *Samurdi, Gama Neguma*) • Farmers bought seedlings from demonstration farm and sold at higher prices on local market, making linkages with buyers themselves • Became successful candidate in local (*Pradeshiya Sabha*) election (Ms Somawathi); this strengthened links with MASL & government offices • Application for employment with other programmes (*Praja Sewakas*)		

Elements of capacity to innovate	Who has this capacity?[6]	How was this capacity developed?	How has this capacity been used?	Results	Impacts/significance
		area, e.g. through exposure visits • Working in groups developed public-speaking skills & networking capacity, especially among women			
		•			
5. Increased capacity to participate effectively in and manage small groups to achieve common/joint economic and social aspirations (participate in group decision-making/enhanced leadership skills)	• Farmers • Members of small groups	• Formation and strengthening of effective small groups • Setting up group funds • Learning to manage funds transparently and with accountability • Learning to manage loan system • Holistic approach to small group management (savings & credit, sharing knowledge about farming, harmony and cooperation, leadership learnt in group) • Training in five modules that covered all aspects of the PMHE approach • Social mobilisation and effective role of social mobilisers as change agents • Rotation of responsibilities within group	• In functioning as small groups committed to achieve common goals (e.g. access to credit) • Issuing loans from group funds for emergencies • Providing collateral for obtaining bank loans • Representing issues to MASL • Taking leadership positions in other community-based organisations (e.g. Death Donation Society, *Gemi Diriya)*	• Increased household income • Social cohesion/ solidarity within community (creating a 'village') • Recognition of approach by government authorities and other agencies • Being offered employment because capacity recognised	• Improved financial security • Happiness – quality of life (state of *Saubhagya*) • Willingness to share experiences and learn from each other

Elements of capacity to innovate	Who has this capacity?[6]	How was this capacity developed?	How has this capacity been used?	Results	Impacts/significance
		• PMHE facilitated development, use and modification of code of conduct for functioning of small groups • PMHE encouraged farmers to discuss issues and reach consensus • PMHE encouraged systems to seek equity in benefit sharing • Emphasis on gender sensitivity (e.g. stimulating women to take on responsibilities)			
			•		
6. Increased capacity at community level to lead/ support/ accompany group processes and processes of local development	• Farmers • *Praja Sewakas* • Small groups • Women	• Training and mentoring of community and *Praja Sewakas* facilitated by PMHE • Training and mentoring of communities in small-group dynamics, leadership and participatory approaches • PMHE staff giving good examples of respectful interaction with farmers	• Community-based decision-making on their farming • Collective bargaining for produce price • Collective influencing of authorities on the need for community facilities and infrastructure • Seeking loans using collateral of fellow farmers • Engaging in processes of local problem-solving and innovation	• Women giving leadership to income-generating activities • Water issues for irrigation based on needs of the farmers • Adopting *yaya* approaches in paddy cultivation • Access to funds for income-generating activities • Improved village infrastructure • Improved opportunities for children and youth	• Improved financial security • Improved quality of life (as indicated by assets, education, health, recreational activities etc.) • Improved standing of women in the society

(b) **Increased capacity to engage in iterative planning and reflective learning (e.g. plan, budget, manage, implement, monitor, evaluate and adjust plan)**

PMHE introduced several initiatives to improve the planning and learning skills of farmers and MASL staff.

Farm planning:

PMHE introduced farm planning as a tool for the farmers to develop their farms while managing their resources in a sustainable manner. The training focused on ecological forms of agriculture and on empowering the farmers to undertake their own research and innovation.

Upland rainfed plots

All stakeholders at the local level agreed that the farm-planning approach was very useful in optimising the use of the land, identifying site-specific land uses, choosing relevant crops, recycling farm resources and identifying opportunities for increasing the income from the farm.

Farm planning as promoted by PMHE was based on agro-ecological LEISA principles. Farmers found this to be a logical, affordable, resource-conserving and culturally appropriate way to generate sufficient and sustained income for the family.

Farm planning, through hands-on work and demonstrations by PMHE, provided farmers with basic competencies, such as to:

- Identify soil types in a broader sense;
- Identify soil depth, or more particularly where the sub-soil rock formations are;
- Identify areas prone to waterlogging;
- Identify crops that need shade versus direct light;
- Cultivate new crops such as sweet potato and peanuts in the irrigated plots, which were not known to the farmers or had not been grown by the farmers there before;
- Practise agroforestry from selecting seed and establishing nurseries to nurturing seedlings of timber, fruit and multipurpose woody species, which was new to most farmers. Even those farmers who came originally from wetter areas with multipurpose homegardens were not familiar with dry-zone tree species.

Secondly, the farmers learnt about LEISA techniques; this included ploughing straw back into the rice field (straw was burnt previously), making compost within the farm, using green manure and cover crops to improve soils, and using farmyard manure to provide key nutrients to the soil.

Irrigated plots

Farm planning in the irrigated areas was less pronounced than in the rainfed uplands because MASL's agricultural policy emphasis was on paddy cultivation for irrigated areas as a means of achieving rice self-sufficiency in the country. MASL also provided advice, and seed paddy was made available through MASL sources. However, the farmers also started to apply some of the practices introduced by PMHE, such as incorporating straw, mulching green manures (e.g. *Gliricidia*) and incorporating farmyard manure, especially cattle and poultry manure. PMHE also introduced other crops instead of paddy in the irrigated area such as banana, coconut, peanut, sweet potato and pulses, which were taken up by farmers. It is, however, to be noted that

paddy management was dependent more on water issues, determined on a group basis through consensus, and on group-based *yaya* approaches, rather than on individual needs and wishes.

Institutional aspects

In terms of institutionalisation, farm planning provided opportunities for a closer dialogue between MASL staff and farmers; MASL staff could gain better insight into farmers' problems during the farm-planning exercise. The staff also developed what the farmers called "friendship" with farmer families, which helped the MASL staff in understanding the livelihood and social aspects of the settler families.

MASL used these avenues to provide assistance to farmers, not only in agricultural activities but also in other areas, to the extent possible. MASL also used the methods developed by PMHE to introduce high-value crops to the farm holdings in other Mahaweli Systems (e.g. through a USAID project). These included baby corn, hybrid varieties of papaya, banana, asparagus and cucumbers meant for export.

Participatory Technology Development (PTD)

The PTD approach introduced by PMHE was particularly helpful to farmers in finding solutions to their site-specific problems. Moreover, farmers were often not convinced about the appropriateness of technical recommendations provided by MASL and other related agencies and found that PTD gave them a way to find new and better ways of farming that suited their special circumstances.

Farmer experimentation

PTD provided the farmers with an opportunity to try out various crop combinations/ cropping plans, soil-management practices and livestock integration with the guidance of PMHE. They learned new techniques by way of visits to other farms, visits to the demonstration farm maintained by PMHE, and in dialogue with other innovative farmers, facilitated by grouping of farmers and farmer-to-farmer cross-visits and exchanges.

Exposure visits

The farmers gained much confidence from seeing other farms in the area, and visits to specialised facilities (e.g. the cattle farm at Digana, the research farm in Girandurukotte and the MASL seed farm in System B). The case-study team found that the farmers are still using the knowledge gained during these visits in the current farming activities.

Summary

- Farm planning – primarily in the upland rainfed (homestead) areas – was most useful in optimising land use and the use of other resources in the newly created farmlands. Although farm planning is no longer needed in the form introduced initially by PMHE, as the uplands are now planted to permanent crops, the study revealed that the principles of farm planning are still being used by the farmers when they change things their homestead farms or explore new off-farm income-generating ventures.
- A very significant aspect of the farm planning was the incorporation of agroforestry, in particular, planting teak and other timber trees on the farm boundaries. This component is very much appreciated by the farmers, who see it as a major investment (with very little capital outlay) and a ready source of income to them.

- Overall, PTD and other avenues to enhancing farmer knowledge and experience that were introduced by PMHE have yielded good results. Farmers continue to be interested in attending training events (such as those conducted by MASL) and are able to collect and understand the information they need.

Outcomes

Key outcomes are:

- Farm households have greater financial security, which has led to improved quality of life (as indicated by assets, education, health, recreational activities etc.).
- There are now well-developed homegardens and paddy lands that integrate (new) crops, livestock, trees and LEISA elements.
- Farmers and small-group members have gained a variety of skills such as planning, budgeting, record keeping, monitoring and evaluation, which they still apply in some form today.

(c) **Increased ability to try out and adapt new things**

PMHE introduced several innovative ideas related to farming and empowering communities. In terms of their homesteads, the farmers were able to diversify their homesteads, experiment with and introduce crops that were new to System C, adopt agroforestry techniques – planting timber and multipurpose tree species for improving the general conditions of the homesteads and as an investment for the future – and apply LEISA principles and practices in their agricultural pursuits.

The participatory approach taken by PMHE was useful in gaining the confidence of farmers in the new technologies. Farmers also experimented with new non-paddy crops/ livestock/ tree species and farm-management practices.

The farmers also confidently undertook new income-generating activities such as bulk purchasing of agricultural inputs and collective marketing of paddy and set up new enterprises such as converting paddy to rice and processing of milk. Many of these enterprises are still functioning.

Summary

- After the training and mentoring provided by PMHE, the farmers demonstrated a positive outlook toward innovative ideas and confidence in trying them out. They became more self-assured, proactive and less fearful of venturing into new avenues, and thus became better able to adapt to changing conditions while managing risk.

Outcomes

- All farmers interviewed who had worked with PMHE are now able to produce sufficient and safe food for the family.
- The farm households have enhanced knowledge and skills related to integrated farming, agroforestry, animal husbandry, growing various crops besides paddy, value addition and enterprise development, all of which have contributed to increasing their income from agriculture.
- The farm households that worked with PMHE enjoy an improved environment because they planted multi-level homegardens with a variety of perennial crops,

including timber and multipurpose trees, thereby creating a shady and cool garden at the same time as providing ready access to timber for building, furniture and sale.

- A cadre of proactive farmers, who are confident to seek out new opportunities, take and manage risks, find solutions to local problems and adapt to change.
- The farm households enjoy improved financial security.

(d) **Increased ability to link with external actors and to utilise linkages strategically to support own plans**

PMHE facilitated the farmers and small groups in linking with external agencies and leveraging assistance from those links. Some of the key links developed are:

- *Links with banks*: During the early stages of settlement, there were no commercial banks in System C. At that time, PMHE facilitated banks to provide a mobile banking service to the farmers, and MASL provided office space to banks when they visited the area. Small groups were then able to forge links with the banks and open accounts in the banks; furthermore, small groups arranged with the banks a collateral system for loans by persuading the banks to accept fellow farmers as guarantors and group savings as guarantee for debt repayment capacity and credibility. The detailed and transparent financial management of group savings and loan funds by groups over long periods added to their credibility.
- *Links to MASL staff:* Farm planning and related activities brought PMHE staff, farmers and MASL together. PMHE was able to develop a good relationship based on mutual trust between MASL staff and farmers, and promoted PTD as an approach to agricultural extension by MASL. Additionally, PMHE arranged events in which farmers could interact directly with MASL decision-makers so that farmers' problems could be discussed and solutions sought. These approaches strengthened farmers' self-confidence to interact with MASL staff and to voice their opinions.
- *Other links:* PMHE facilitated a variety of other linkages, which helped in exchanging information and gaining opportunities for mentoring of farmers in managing small groups that can interact with other programmes. PMHE was also a vehicle for farmers to get to know other farmers in the area, through whom they were able to get first-hand knowledge on practices applied by other farmers.

<u>Summary</u>

- Linkages with external agencies were very beneficial to the farmers, who became better able to access funds, technical advice and materials needed for their day-to-day work, and developed confidence in leveraging assistance through these linkages.

<u>Outcomes</u>

- Farmers as individuals and in small groups enjoy improved financial conditions for investment loans, thereby reducing the vulnerability of farm households.
- The households managed to increase their assets.
- The households enjoyed an improved financial situation through enterprises developed as a result of the linkages with external actors (e.g. milk collection by Nestlé).
- The farmers gained increased access to service providers such as veterinary services, input suppliers and marketing organisations.

(e) **Increased capacity to participate effectively in and manage small groups to achieve common/joint economic and social aspirations**

A major contribution of PMHE was the encouragement and strengthening of farmer groups. Organising into small neighbourhood and activity-based groups enabled the farmers to have opportunities for exchanging ideas and seeking others' ideas, preparing plans collectively, building trust and collecting funds, training in home management and thrift, maintaining financial books accurately, and gaining confidence to speak in public and to "rise to the occasion".

PMHE facilitated the formation of a number of small self-help groups. These included mixed groups, women's or men's only groups and activity-based groups. It was agreed by all farmers interviewed that these groups were very useful; they were able to generate additional income for the families through group activities, provide loans for income-generating activities, support families in personal events such as weddings, funerals etc. and provide funds for urgent family needs, either as a loan with soft interest (far lower than the rate charged by moneylenders in the village) or as a grant, in the case of a sudden illness. Groups also provided opportunities to enhance leadership qualities of members, which enabled them to deal directly and confidently with the "outside" world.

The groups were also able to achieve common goals (e.g. access to credit) and provide collateral for fellow farmers to obtain bank loans.

Summary

- Small groups were very useful vehicles in enhancing the capacities of farmers. The groups functioned well during the time of the PMHE project, and benefitted the farmers very much also after the project. Group formation and management also helped to develop community-leadership qualities within men and women farmers.

Outcomes:

Several outcomes became evident during the interviews in this study:

- Social cohesion/ solidarity within the community increased: given that the settlers originated from different parts of the country, often having different societal and cultural behaviours, PMHE facilitated cohesion of the newly settled farmers to make new "villages".
- The leadership qualities acquired by the farmers enabled them to approach government authorities and other agencies effectively and discuss issues openly. Further, they took on and are still in leadership positions in local societies.
- Given the experiences gained, some farmers – particularly the *Praja Sewakas* (= community leaders) – were able to secure employment because their capacities were recognised by employers, including MASL.
- Group members have mentored others to start up small groups for various activities and continue to provide advice on group mobilisation to new government programmes that use small groups as a condition for community involvement.
- Group members infiltrated the farmer organisations locally perceived as "corrupt", were instrumental in establishing a "new" order and taking over leadership. They have created a new, progressive and ethical leadership in the communities.

(f) **Increased capacity at community level to lead/ support/ accompany group processes and local-development processes**

From the perspective of sustaining its approach, PMHE identified and groomed a cadre of *Praja Sewakas* in the project area. They were systematically trained and mentored by PMHE in a number of areas relevant to their responsibilities. They had a very responsible role in the village, and each of them looked after 150–200 farm families to support implementation of PMHE activities. Essentially, their main functions included:

- Facilitating the formation of small groups and mentoring these groups;
- Engaging in farm planning with farmers and providing relevant technical knowledge on (new) agricultural pursuits; providing agricultural information on optimising land use, managing erosion, selecting site-appropriate varieties and agroforestry, and facilitating the introduction of animal husbandry, in particular dairy cattle.
- Providing technical support by meeting and visiting the individual farmers, using visuals and demonstrations in their own homegardens and irrigated fields;
- Supporting farmer experimentation, using demonstrations to substantiate the agricultural advice given and organising farmer-to-farmer sharing events;
- Introducing value-addition possibilities for farm produce and supporting farmers in making relevant linkages.

They also provided a "one-stop-shop" for advice; the farmers sought their advice on many matters and looked up to them for mentoring.

The farmers learned from *Praja Sewakas* about how to interact with officials and also how to share experiences with others. Farmers were unequivocal in their appreciation of the services rendered by the *Praja Sewakas.* At least one of them has become an employee of MASL; another has a job with the Agrarian Services Department; yet another is the area contact for a large governmental social-development programme; others are engaged in jobs somewhat related to their original roles in PMHE. Two features are outstanding:

- After over 15 years, many of the *Praja Sewakas* are still in touch with the farmers and are held in high esteem by them;
- Some of the *Praja Sewakas* continue to provide advice on a *gratis* basis.

<u>Summary</u>

- Small groups were able to exert influence on the authorities, and helped each other.
- The concept of *Praja Sewakas* is indeed noteworthy: they have provided a very significant service to the communities. The farmers depended heavily on the *Praja Sewakas* for technical advice, as there were no other persons locally available to provide that integrated service.

<u>Outcomes</u>

The main outcomes that emerged during the case study were:

- The concept of *Praja Sewakas* has been successful and appears to be replicable as a means of empowering individuals and communities.
- Small groups have the competency and confidence to engage with authorities and other farmers, as evidenced from their interactions on water issues, adopting the

yaya approach, accessing funds for income-generating activities, obtaining the necessary infrastructure facilities for the village and gaining opportunities for youth in employment.

Additional note: Capacity development of MASL staff

Part of the PMHE mandate was to develop the capacity of MASL staff to be able to support farmer-led agricultural development. Although this was not the main focus of this study of capacity to innovate at the local level, the capacity of the MASL staff to support farmer-led agricultural development would definitely be part of the enabling (or otherwise) conditions for the local capacities to be expressed. We therefore take a brief look at what emerged from the interviews about capacity development of MASL staff, even though specific questions about this were not posed.

PMHE provided capacity development opportunities to MASL staff, including training of trainers. This was invaluable for staff not only in System C but also in other systems. Altogether, more than 1000 staff members were trained, and all trained staff in System C were closely mentored and accompanied by PMHE staff. The topics of training included PRA, sustainable farm planning, PTD, community mobilisation and organisational development.

Overall, the case-study interviews (especially those with MASL staff, present or former) revealed that PMHE strengthened the MASL cadres in the topics mentioned. MASL regards most of PMHE's capacity-development efforts to be focused on developing "soft skills" (how to work with people). PMHE provided a core group of facilitators, and not merely trainers.

MASL staff members trained in these skills received incentives in the form of two salary increments as well as further training overseas. As a result, the staff continued to contribute their new knowledge and experience to MASL while the project continued. The participatory methods became very popular amongst the staff during the project duration.

After the PMHE project closed, MASL continued to use participatory methods in its work but, in the last several years, there has been no training or follow-up related to participatory approaches and farm-planning work. According to interviewees from MASL, the new MASL staff members lack core competencies to use participatory approaches in the way this was done during the PMHE project. Many of the staff members trained at that time are no longer in the employ of MASL. However, some of those who retired and/or are working with other organisations continue to use participatory methods in their work.

The responses received from farmers interviewed in System C suggest that most of the agricultural advisory services they now receive from MASL staff consists merely of being told about new technologies at group meetings but then no follow-up by the staff to support farmer experimentation or even to find out what the farmers did with the new information.

4.2. Key aspects of context that may have affected the achievement of outcomes

With regard to context, it is necessary to consider the continuum, from 1991 when PMHE started in System C to 2000 when it was concluded and the 16 years since then. It would also be necessary to consider the changes in context at the national level as well as more local System-level changes.

The project worked in the period when Sri Lanka was embroiled in a civil war. System C was on the border of the "no-go" conflict zone, which meant that there was little transport and trade with the North. Most of the agricultural produce was sold in the local markets with only a few traders from outside the area. A small number of innovative and brave farmers took their produce into the war zone and sold at prices several times higher than in System C. Since the cessation of hostilities in 2010, Sri Lanka has opened up and infrastructure development has boomed. This has had a positive impact on farmers in System C, offering more opportunities for trade and investment, new income-generating avenues etc. But it has also meant that many younger farmers have opted out of farming, seeking more lucrative employment and giving their lands out on lease or sharecropping arrangements.

During the years when PMHE was being implemented, MASL went through its first major restructuring funded by the World Bank, during which a large contingent of staff was made redundant. At the time, MASL staff members were very open to participatory approaches that were promoted by PMHE, including farm planning, PTD and community strengthening, as they involved closer engagement and planning together with farmers and the latter taking more ownership of their development. This, according to field officers, helped them operate in more villages than before. As part of the restructuring, MASL was decentralising the maintenance of the irrigation infrastructure at the lower end, distributary canals and field canals, to the farmer organisations (FOs) and field canal groups. In this context, the small-group approach of PMHE was seen as a means to strengthen and democratise these canal groups through participatory-analysis and planning processes.

The farmers now have a much higher level of formal education than the farmers had several decades ago, and external support to farmer mobilisation may not be needed, as mobilisation appears to be internalised within the FOs. The farmers see the value of being organised for a variety of reasons (e.g. water allocation, purchase of inputs at wholesale prices, negotiating power when selling produce, accessing loans and accessing technical expertise).

At the time when the PMHE project ended, there was a substantial cadre of MASL staff trained and skilled in continuing the participatory approaches in the Systems. The Human Resource Development Unit of MASL had a strong team of trainers who could continue the capacity-building programme within MASL. However, with political changes that swept through the MASL, which included doing away with the Ministry of Mahaweli Development to reinstating it as a Ministry on its own several years later, little attention appears to have been given to sustaining the participatory approaches through continued training. Moreover, a second restructuring of the MASL and (early) retirement of staff resulted in a loss of capacity in the MASL. However, trained staff members who are still in MASL still use the approaches and pass them on to their (younger) colleagues in a more informal way. The findings of the DOLI study have

sparked renewed interest in the approaches, at the highest levels of MASL, as the management sees the relevance of such participatory approaches in the next phase of the Mahaweli Development Programme, which will take irrigation water to the North and East of the country. The Government envisages these to be multi-ethnic settlements, which would require a community-building approach as had been demonstrated by PMHE in System C.

System C is currently is a state of flux. On the one hand, MASL still maintains its presence and its staff. On the other, the line ministries under the Divisional and Provincial Administration are moving in. This seems to have caused some uncertainty as to who is in charge of what. This means that the farmers have to reorient themselves in relation to the new service-provision arrangements and adapt to a new institutional landscape.

Increase in labour costs and mechanisation are two prominent contextual changes that were mentioned frequently by interviewed farmers. In fact, mechanisation of all paddy-harvesting operations has made it possible for farming families to continue to manage their farms and to cultivate their paddy lands exclusively with family labour. LEISA techniques – mainly the use of compost and farmyard manure – are still practised but are not widespread, although their environmental and health benefits were praised by most of the farmers interviewed. The decrease in application of LEISA practices is due in part to the costs of these organic materials, which have risen substantially over the years, and the demand for these materials for vegetable cultivation elsewhere in the country. It is also due to the higher labour demands of LEISA, which cannot be handled by an ageing farmer population with limited family labour, seeing as many young people with higher formal education are now working in cities. The new national agricultural policy launched in 2015 calling for a toxin-free nation will certainly revive the use of LEISA practices and even provide farmers with assistance to convert to more organic forms of agriculture.

One positive aspect greatly emphasised by many farmers interviewed was the manner in which PMHE staff interacted with them. According to them, there was mutual respect and understanding with the PMHE team and almost familial bonds. They spoke of people who were highly committed to their work and to the communities and of close accompaniment and monitoring on a journey together. People hired to work with PMHE were not selected merely for their academic credentials, but for their willingness to think out of the box, to take risks and try out new things, to be flexible yet diligent, but mostly for their commitment to improve the lives of Mahaweli settlers. This policy seems to have paid off, considering the huge appreciation expressed by the farmers.

Over time, many farmer groups initiated in the PMHE period have been disbanded; only a few remain active (see Box 1). This is largely due to the fact that the purposes for which the groups were set up are no longer valid. In fact, some farmers felt that the increase in individual wealth of members meant that collective activities done in the groups are no longer necessary. However, group members still sometimes came together simply for socialising. According to some farmer interviewees, differences in opinion amongst the group members, selfishness and petty jealousy may also have contributed to the demise of some farmer groups. However, both the first and the second generation of System C residents have formed new groups, mainly for bank loans and community concerns rather than for farming-related matters. Former members of small groups that were formed during the PMHE project are now involved in new groups that have been set up in the area by new social-development programmes. Some farmers saw a negative trend in the commercial interests that have come into the area

with vigorous advertising campaigns and providing large loans to groups at much higher interest rates than had been charged by the earlier small groups and with very little demand for collateral.

Box 1: The Ruhunu Shakthi Group – its genesis and survival….

The Ruhunu Shakthi Group was established in 2004 as a small group under the PMHE project to help fellow farmers. The group was formed with 11 farmers; each farmer paid LKR 60 per month as their subscription. Currently, there are nine members.

The group discussed the best ways and means of helping farmers, and decided that it should open an outlet to sell what farmers need such as implements, hardware, fertiliser, agrochemicals and general store merchandise.

It realized that it was possible to buy goods wholesale from a city at a much lower price than in System C, and then sell the wares to the farmers at a lower cost than in other shops. They started the shop in a small way.

Soon they realized that they needed a substantial amount of capital to purchase enough goods to service the farmers, as the shop was becoming popular. The members discussed how to generate funds for this purpose, and decided to seek the help of MASL. Their discussion was fruitful and MASL gave them, on a short-term lease, 20 acres of upland for cultivation. This land, near Veheragala School, cost the group LKR 4,000 per annum as lease rent.

The group cultivated a variety of crops in this land from 2005 onwards. Planting materials were purchased from the group's fund; members provided the labour for free.

After a few years, they earned a substantial capital to augment the shop. They hired a member to manage the shop and, from the profits generated, pay LKR 10,000 as a monthly salary. The manager is specially trained in handling agrochemicals. The profits are calculated annually and re-invested.

Unfortunately, in 2013, the shop caught fire, apparently on account of an electrical short-circuit. The entire shop with its goods worth about LKR 250,000 was gutted. The members demonstrated their resilience by rebuilding a part of the shop to store essential and fast-moving agrochemicals. Unfortunately, due to space limitations, it could only sell agrochemicals. It is a fight for survival now, and members are regularly contributing their services to keep up the shop. The detractors spread rumours that the group had disbanded because of bankruptcy. In the last two years, the shop has been able to generate some profits, and its expansion is underway. There is much sacrifice from the members, who never wanted a dividend from their investments; rather they continue to contribute in whatever way possible, and live in the hope of restoring the shop, the *Thel Kade,* as farmers call it, to its former glory.

5. LESSONS LEARNT AND CONCLUSIONS FROM THE CASE STUDY

5.1 Lessons about the approach and its impact

The capacity building in farmer-led small-scale experimentation was closely linked with training in farm planning, small-group management and community development, which reinforced each other. Purely training in on-farm experimentation would probably not have achieved the same impact within the individuals and the community.

An important quality of the training given by PMHE was that it was concrete and practical, and done in farmers' homes and farms. The participants were actively engaged in co-learning and gained confidence in their own abilities through the fact that the training approach built on their knowledge and ideas, encouraging all participants to contribute and to play different roles. This reflected the philosophy of the PTD+ approach as well as the principles of LEISA – making the best of the resources locally available and enriching them through well-planned combinations and complementarity. Working in small groups was also central to the training.

The capacity-building process was not limited to these structured training activities; for about a year afterwards, the PMHE staff continued to accompany and mentor the farmers and small groups in their planning, experimentation and linking with sources of information or services, and also mentored the MASL staff in supporting the farmers' work. The intensity of accompaniment of the farmers and MASL staff and the time needed for this must be acknowledged if future interventions of this type aim to achieve similar long-term impacts.

The continuing work in small groups created a safe co-learning space for the settlers. This way of starting social organisation in a new setting, where settlers did not initially know each other, focusing on initially very local planning (homestead, paddy field, small group) and small-scale experiments, was a powerful combination that gradually strengthened the capacities of the farmers to plan and act jointly – in small local groups, at community level and beyond.

A particularly important aspect of increased capacity to innovate is the greater self-confidence of farmers – learned though planning and working in groups and applying their own knowledge and ideas in experimentation – which put them in a better position to seek and demand information from other sources, also from government bodies. The farmers became more open for new ideas and new challenges, such as taking a course and exam for certification, as they have consciously experienced through their group work and experimentation that they are able to learn – and to advise others – even if they did not have any formal education.

Another important capacity, which came largely from the focus on planning and LEISA, was to be able to recognise the value of local resources and to use them efficiently. This also applies to use of one's time. As one farmwoman put it: "we learned to be frugal". And as one male farmer put it: "we got to think about spending our time productively".

Added to this was the strict no-hand-out policy of PMHE. In a situation where settlers had received a lot of aid that had created a sense of dependency and indebtedness, and also a sense of apathy, PMHE's approach helped kick-start a different way of thinking and being – one in which people gained independence and freedom of choice.

What was key for integration of the approach into the MASL was the involvement of the MASL staff in supporting the farm planning and the farmers' experimentation. These activities provided opportunities for a closer dialogue between MASL staff and farmers. MASL staff could gain a deeper understanding of the farmers' situation, problems, visions and capacities, and developed what the farmers called "friendship" with farm families and groups.

The favourable conditions in the PMHE project may be difficult but not impossible to recreate. A key factor for success was the composition of the project staff: with diverse and complementary knowledge and experience and dedicated to the work to such an extent that the staff continued to work with the project for several years, despite the relative remoteness of the Mahaweli System C. In fact, there was minimal staff turnover, as many who joined the staff stayed until the end. Moreover, some of the staff continued to have contact with farm families and visited them occasionally, even after the project closed. One quality that was mentioned by several farmers interviewed during the case study is that the PMHE staff respected the farmers. This was due partly to the fact that the staff members were chosen not so much on the basis of formal academic qualifications but rather on the basis of their interest and demonstrated abilities to work with others – especially farmers – and their openness to new ideas and learning.

Another favourable condition – still more difficult to recreate – was that, during the project period, a new Director General was appointed who was very open to the PMHE approach. This gave ample space for the project to promote its participatory approach, particularly in building the capacity of MASL staff, but also left the newly trained staff vulnerable to renewed change in political leadership. The project was "lucky" but was also nimble in recognising and grasping opportunities offered by the new leadership at that time.

Although the project trained over 1000 staff members in MASL, i.e. more than one tenth of the total staff of 10,000 persons at that time, the frequent staff turnover and the lack of training for new staff in PTD and other participatory approaches has meant that these approaches are not so fully integrated into the MASL as they have been in the farming communities. For the sustainability of the approach at community level, a key factor was the training of selected farmers – especially women – as *Praja Sewakas*, who continue to be active in a formal or informal way until today.

5.2 Lessons about conducting the case study

A study like this needs to look at the dynamics not only in the context but also in the life stages of the individuals who were involved. Sixteen years after the project ended, the farming couples who were very active then are coming into a stage of life when they no longer have as much physical strength to continue farming, when they are thinking of retirement, taking care of their grandchildren, and enjoying the homegarden as a healthy and pleasant environment that has become a haven also for the visiting family members who now reside in urban areas. The couples have achieved what they wanted to achieve, they have raised and educated their children, they are reaping the benefits of their highly diverse gardens, using the timber trees as dowries or to support their children to invest in non-farming income-generating activities, building additions to their homes to make their lives more comfortable or building new houses for their children and grandchildren. Many of the people who gained capacity to innovate at that time are not giving their priority attention to (re)planning their gardens and paddy land and engaging in continued experimentation, although a few still do. Many are leaving this up to their children and grandchildren, to whom they have taught – also by showing and working together with them – the principles learned during the time of the PMHE project. They have also encouraged their children to join or form small groups to achieve their purposes, which are now concerned with many other matters in addition to or instead of farming.

In trying to do studies of this nature, it is necessary that the researchers in the team have a good understanding of the approach that was taken during the intervention and have hands-on experience with people-centred process approaches.

It is also necessary to be able to contact people who were involved in the project and who could do the groundwork and identify the interviewees and locations. Several ex-PMHE staff members were willing to give of their time to be the anchors and to map the people and locations for the field research and to support the research team with their many requests.

Involving the managers and policymakers concerned with settlement and irrigation in Sri Lanka in preparing the case study helped not only in facilitating the study process but also in stimulating their interest in the findings. In Sri Lanka, the timing of the study was serendipitous. The DG was informed in detail about the findings during the feedback workshop, which took place shortly before a meeting of the MASL to plan a major expansion of the irrigation and settlement scheme into a new area in the north of the country, that had until recently been torn by war. A development approach that centres about small-group formation, joint planning and small-scale experimentation will help to build social cohesion as a major element in development of this new multi-ethnic settlement area.

ANNEXES

Annex 1: Timeline for Mahaweli development and the PMHE project

(based mainly on the interview with Mr S W K J Samaranayake, former DG of MASL, and on other interviews and data sources of PMHE and MASL used during the study)

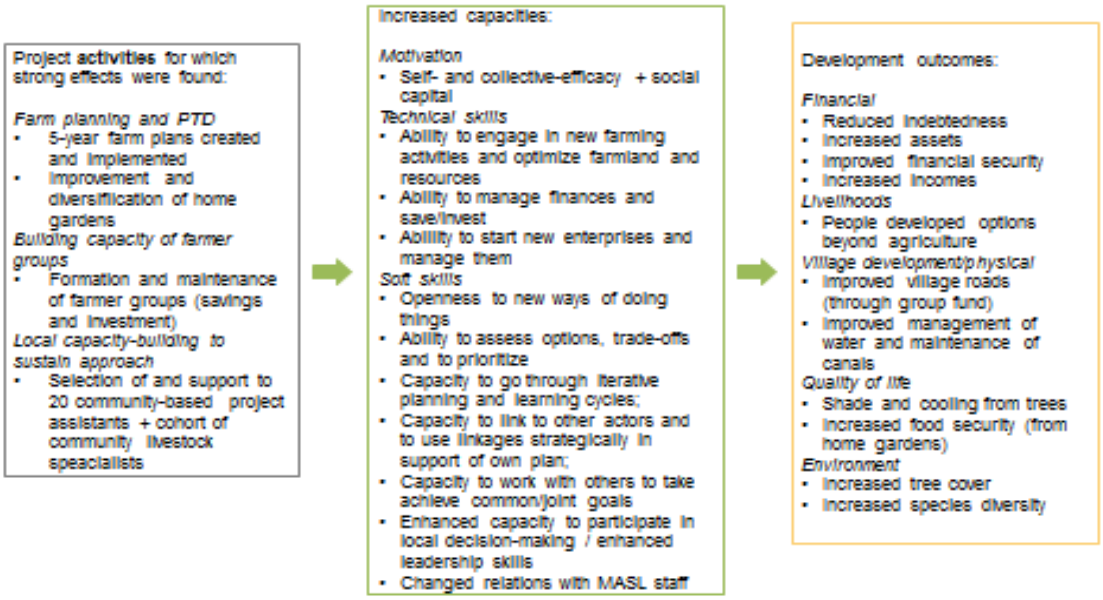
Date	Event	Notes
1815	Ceylon comes under British Rule	Democracy introduced; British established tea and rubber plantations taking 600,000 ha under "wasteland" ordinance.
1931	State Council appropriates land not used by plantation companies	State restored ancient irrigation system – approximately 20,000 small reservoirs were restored; Government policy to resettle population on newly acquired land.
1948	Sri Lanka gained independence	Government continued with push for self-sufficiency.
1968	Mahaweli Master Plan launched	Plan for diversion of the Mahaweli River over 30 years including 15 dams, 11 power plants and irrigation water to 400,000 ha.
1970-76	Ministry of Irrigation	Initial work Stage 1 of Mahaweli development executed using the River Valleys Development Board, Mahaweli Development Board and Ceylon Development Engineers and other local agencies; completion of the Polgolla dam and reforestation of Mahaweli catchment areas
1977–83	Launch and implementation by Government of Accelerated Mahaweli Development Programme (AMDP)	5 dams and 6 power plants constructed; 125,000 families resettled; 144,000 ha irrigated.
1979	Mahaweli Authority of Sri Lanka (MASL) established	Established as sole authority in Mahaweli areas – an umbrella organisation fulfilling most government roles ahead of ministries.
1980	Ministry of Mahaweli Development established	MASL formerly under Ministry of Irrigation brought under this new Ministry
1980s	Boom years for MASL	Large-scale investment sought through Sri Lankan Aid Group, sponsored by World Bank (WB) and Asian Development Bank with numerous co-financing sources; country became 90% rice self-sufficient; 100,00 jobs created in MASL; 50% of country's electricity generated.
1990s	Funding reversals	Funding reduced with evidence of negative impacts of dam construction, forest clearance and resettlement.
1991–2000	Promoting Multifunctional Household Environments (PMHE) project established and implemented	Set up in response to studies by University of Kelaniya, Sri Lanka, and University of Leiden, Netherlands, that pointed to socio-economic problems faced by settler families, environmental degradation and ill effects on women removed from their social networks; "Environmental Task Group" with researchers from both universities submitted

Date	Event	Notes
		proposal to Netherlands Directorate General for International Cooperation (DGIS); 9-month action-research phase approved for funding; ETC Foundation, with expertise in PTD and LEISA, contracted to provide technical assistance.
March 1991	PMHE begins with 9-month action-research phase	Two settlement units chosen in Section C; settlers' problems identified included poor social cohesion (because settlers brought from different places), over-dependency on MASL, blueprint approach of MASL, insufficient income earned from agriculture and indebtedness; overcoming these problems became objective of 2-year implementation phase.
1992–94	PMHE Phase 1	MASL becomes counterpart agency to project as it moved from research to development project. Because project budget small compared to large loans coming in, MASL initially ignored it (according to Edward de Mel); this freed it from political influence at beginning (had its own niche). Based on action-research findings, Phase 1 implemented in 12 settlement units in 6 blocks in System C to develop strategy for sustainable agriculture based on participatory methodologies (PRA, PTD etc.), LEISA principles and community mobilisation. Approach responded to farmer interest in sustainable resource management and community strengthening.
1994	Positive evaluation of PMHE Phase 1	Continuation of project recommended – found favour with decision-makers as being consistent with national policy of participatory management and aspiration that farmers assume more control over their development activities.
1994	Mr S W K J Samaranayake appointed Director General (DG) of MASL	DG supportive of participatory approaches (married to Mallika Samaranayake, a lead proponent of participatory approaches in Sri Lanka).
1994–2000	PMHE Phase 2 implemented	Focused on further developing and scaling out approach developed in PMHE-1 to rest of System C and other Mahaweli areas; direct implementation areas were the most recently settled parts of System C (Mahawenawella, Veheragala, Cadjuwatte) to further develop the approach. PMHE staff trained and mentored MASL staff who would apply approach in other parts of System C and beyond. Main programme areas of PMHE were: 1) Improving management of farm resources to higher levels of sustainability, particularly in homegardens 2) Strengthening organisational capacity of farming communities 3) Building capacity of MASL staff in participatory methods in extension, organisation building and sustainable agricultural development 4) Improving women's access to resources and decision-making 5) Building capacity and broader support to sustain PMHE approach.

Date	Event	Notes
1998	MASL restructured	MASL restructured with WB funding to become river-basin management authority; staff (then 11,000) downsized, with 60% taking early retirement.
1998	Resignation of Mr S W K J Samaranayake as DG	Incoming DG did not support participatory approaches in the same way; attention to participatory approaches at higher management level decreased.
1999–2007	Gemi Diriya project starts	WB-driven development programme in 4000 villages in Sri Lanka; PMHE undertook development planning exercise using PRA in Weerana Village, System B, as one of two pilots; PMHE staff concerned about maintaining process quality in scaling out; Mallika Samaranayake (Social Development Specialist in WB Colombo Office) prepared 300 village-development plans in 3 months; Gemi Diriya employed ex-PMHE staff to facilitate participatory village-planning exercise; one of PMHE social mobilisers became coordinator of social mobilisation in Gemi Diriya project.
2000	PMHE project closes	ETC Foundation requested 2-year extension to continue institutionalisation of approach, but not approved by Netherlands Embassy; proposal then made to form NGO to continue PMHE work, but PMHE staff feared repercussions from MASL; Netherlands Embassy "not supportive" (RM notes); several key staff members of PMHE absorbed into ETC-Lanka.
2000	Agrarian Development Act No. 46	Farmer Organisations established with responsibilities including irrigation management.
after 2000	Backlash against participatory approaches in MASL	Under former DG, PTD had come to be seen as a "cure all"; after he left, many MASL staff reverted to how they had worked before, finding this easier (Sumedha);
2002	MASL training unit closed down (GD Perera)	Trained trainers of MASL left or were absorbed into other sections within agency. Attention to training in participatory approaches diminished.
2000 onwards	Staff trained in participatory approaches joined other projects, e.g. those funded by JICA and World Bank, and were not replaced.	Fall in expertise in level of soft skills in MASL.
2000 to present	Increasing labour costs in Mahaweli and labour shortages due to off-farm employment of second generation; increasing mechanisation	Increased use of external inputs, especially herbicides and insecticides; increased mechanisation for labour-intensive operations in paddy cultivation such as land preparation, weeding and harvesting.

Date	Event	Notes
2000 to present	Increasing importance of remittances, together with fall in agricultural wage compared to wages in other sectors	An alternative narrative that may account for some of the livelihood improvements of mainly second generation in villages in which PMHE worked.
2009	End of nearly 30-year civil war in Sri Lanka	Peace in the country; renovation of infrastructure; free movement of people and trade within the country; development boom
2015	Launch of new " A toxin-free" nation policy of new Government	Move towards chemical-free, more organic forms of agriculture that support and promote LEISA practices/techniques. Ban of Glyphosate as weed killing agent.
2016	Areas where PHME worked are more prosperous than in 2000	Homegardens well established; rice yields averaging 6t/ha up from average of 2-3t/ha in 2000; increased social cohesion with death donation societies and various other groups lending money and engaging in Government programmes.

Annex 2: PMHE's Theory of Change constructed from existing documentation and revised after fieldwork



Annex 3: Consultations, FGDs, KIIs and other meetings [10]

(a) Consultations with ex-PMHE staff, MASL staff and ex-MASL staff involved with PMHE

Date	Individuals/Groups	Location
24 May 2016	Mr Sumedha Karunathilake (former Community Development Officer) Mr Felix Wijesinghe (Agronomist)	ETC Lanka Office, Rajagiriya
	Mr S W K J Samaranayake (former DG-Mahaweli	IPID Office, Dehiwala
25 May 2016	Focus Group Discussion Mr Edward de Mel (Director of Agriculture, MASL) Ms Wasanthi Seneviratne (Deputy Director of Agriculture, MASL) Mr Gamini Kudaliyanage (former Head of Human Resources Development Unit, MASL) Mr G W Liyanage (former Chief Agronomist, MASL) Mr G D Perera (former Agronomist attached to MASL Head Office)	MASL Headquarters, Colombo 10
26 May 2016	Mr Ranjit Mulleriyawa (former Field Coordinator, PMHE) Mr D B Rambodagedara (former Agronomist, PMHE, seconded staff MASL) Mr N P Karunadasa (former Organisational Development Specialist, PMHE)	Regent Lodge, Kandy
27 May 2016	Mr Hilary Perera (former Manager of the Demonstration Farm and field extensionist, PMHE) Ms Kumari Senanayake (former Agronomist / Community Mobiliser, PMHE) Mr C W Sirisena (former Coordinator, Community Mobilisation, PMHE)	Regent Lodge, Kandy

[10] In all meetings and FGDs except 4.1 (d), (e), (f) and (g), the case-study team members involved were Elizabeth Hoffecker, Chesha Wettasinha, Mallika Samaranayake, Ranjith Mahindapala and Hasara Kalubowila.

(b) Focus Group Discussions with farmers and *Praja Sewakas*

(I) FGD with 17 farmers from Maldeniya, Kanichigala, Veheragala, Kekuluwela, Cadjuwatte (10 males & 8 females)

Date and Venue: **28 May 2016; Block Manager's Office, Veheragala**

Participants (formed also into three Groups):

Group 1	Group 2	Group 3
V A Wimalawathie	W E M Guneratne	E K G Nandawathie
D K Mallika	G A Premaratne	S G Sumanapala
K M Karunaratne	R M Karunaratne	W K Chaminda
K G Guneratne	D P Priyantha	C P Attanayake
W D Sunil	Rupa Wanasinghe	Rupa Wanasinghe
W Padmini (partly)	R H Kanthi	E L Wijepala

(II) FGD with 3 farmers from Cadjuwatte, Kuda Sigiriya (9 males & 23 females)

Date and Venue: **28 May 2016; Cadjuwatte Temple**

Participants (formed also into three groups):

Group 1	Group 2	Group 3
A M Lalitha Kumari	M Y Niluka Dilrukshi	W M Ramya Weeratunga
A M Subadra Kumari	Karunawathie	W G Champika
H M Pathmalatha	Sunethra	M G Sriyani Mangalika
C M Dhammika Kumari	Gunawathie	R M Chandrawathie
W D Rupasinghe	Nirosha	R M Abeyrathna
B M Siriyawathie	Bandara Manike	A M Padma Kumari
G W Nandawathie	Seetha Bulanagama	R U K K Rajapakse
W M Bandara Manike	Pushpa Kumari	Indrani Damayanthi
K G Anulawathie		Chandrawathie

(III) FGD with 15 farmers from Dolakanda, Tuwaragala, Sandagalatenna, Muwapetigewala (6 males & 6 females)

Date and Venue: **29 May 2016; Block Manager's Office, Mahawanawela**

Participants (formed also into two groups):

Group 1	Group 2
M D S Gunathilaka (Lead)	P B Dias Rathnasiri (Lead)
W Somawathie	R A M Podi manike
Kusuma Samarathunga	B L Lilian
J G Ariyadasa	W Dharmasena
P H Akmon	N T Chandrawathie
R G Podi Appuhamy	
H P Wasantha Pathirana	

(c) Focus Group Discussion with MASL staff in System C

Date and Venue: **30 May 2016; Salika Hall, Dehiattakandiya**

Participants (formed also into three Groups):

Group 1	Group 2	Group 3
A L O de Silva	W A L Wanigasooriya	R M K B Randeniya
R A Ajith Nishantha	S A Gamini Chandrasena	U G L Melani
W Seneviratne	K M P K Wijesundera	K W N Sanjeewani
A K Jayawardene	W A K K Chinthaka	R M Thilakaratne
H M S Herath	V L A S Kularatne	A D Wijeratne
T P M S Piyarathna	P K Madushanka	D G S Pathmini
C P Attanayake	W M P M Wickramasinghe	G N W Gunawardene
H M Rasika Sampath	A H Dharmasena	H M Wijeratne
	A K Muthubanda	
	Y M R Wickramasinghe	
	N A P R Napagoda	
	K D R Kumara	

(d) Key informant interviews with selected farmers and *Praja Sewakas*[11]

Dates and Venue: **7 & 8 August 2016; Nature Lanka Hotel, Dehiattakandiya**

Participants:

Date	Interviewee
7 August 2016	• Ms Chandra Nugahatenna (ex-*Praja Sewaka*) • Ms C P Attanayake (ex-*Praja Sewaka*)
8 August 2016	• Mr W D Sunil Weerasighe (Farmer, Veheragala) • Mr Tissa Liyanarachchi (ex-*Praja Sewaka*) • P K Akmon (Farmer, Thuwaragala) • Ms N K Wimalawathie (Farmer, Mahawanawela) • Ms K M Sriyani Pushpalatha Wijekoon (ex-*Praja Sewaka*, Mahawanawela) • Mr S G Sumanapala (Farmer, Veheragala) • Ms W Somawathie (Farmer, Tuwaragala) • Ms R M Sunethra Kanthi (Farmer, Kekuluwela)

[11] Interviews conducted by Mallika Samaranayake, Ranjith Mahindapala and Hasara Kaubowila

(e) Visits to homesteads[12]

The study team visited the homesteads of the following farmers:

- Mrs W Somawathie & Mr P K Akmon (husband and wife)
- Mr M D S Gunathilaka
- Ms Lilian Balapitiya
- M A Dayawathie & H G Piyatissa (husband and wife)
- Mr W D Sunil Weerasinghe

[12] Visits made by Boru Douthwaite, Elizabeth Hoffecker Moreno, Chesha Wettasinha, Mallika Samaranayake, C W Sirisena, Ranjith Mahindapala (partly) and Hasara Kaubowila

(f) Workshop for sharing the preliminary findings of the study and feedback

Date and Venue: **26 August 2016; Nature Lanka Hotel, Dehiattakandiya**

Participants:

	Name	Institutional affiliation, if any
1	Mr Anura Dissanayake	Director General – MASL
2	Mr K A C Wimal Kumara	RPM – System C – MASL
3	Mr A L Osman de Silva	DRPM – System C – MASL
4	Ms Chamila Priyangani Attanayake	Ex-*Praja Sewaka*/Unit Manager – Veheragala – MASL System C
5	Mr R M S Ratnayake	Block Manager – Veheragala – MASL System C
6	Ms P M Udeni Dhammika	Field Assistant – Cadjuwatte – MASL System C
7	Mr H W Saranasinghe	Block Manager – Mahawanawela – MASL System C
8	Mr U L A S Kularathne	Agronomist – MASL – System C
9	Mr K N Kulathunga	DRPM D – System C
10	Ms Padma Udagedara	Block Manager – Siripura – MASL
11	Ms I H M C Kumari Bandara	Field Assistant – Mahawanawela – MASL
12	Mr K P K Madusanka	Agronomist – MASL
13	Mr A G P K Premachandra	Agronomist – MASL
14	Mr K G P Prasanna	Agronomist – RPMO – MASL
15	Ms Wasanthi Seneviratne	Deputy Director (Agriculture) – MASL, Colombo
16	Mr W A C H Wanasinghe	DRPM – System C – MASL (DCL) System C
17	Mr K M Kulathunga	DRPM – D – MASL – System C
18	Mr W Edward de Mel	Agronomist – MASL , Colombo
19	Ms N K Wimalawathie	Ex-*Praja Sewaka* / Agriculture Research & Production Assistant, Dept. of Agrarian Services
20	Ms W Somawathi	Farmer
21	Mr P H Akman	Farmer
22	Ms W Padmini	Farmer
23	Ms Chandra Nugahatenne	Ex-*Praja Sewaka*
24	Ms K M Shriyani Pushpalatha Wijekoon	Ex-*Praja Sewaka* – Sandagalatenne
25	Ms Ann Waters-Bayer	Case-Study Team, PROLINNOVA/KIT, Netherlands
26	Ms Chesha Wettasinha	Case-Study Team, PROLINNOVA/KIT, Netherlands
27	Ms Mallika Samaranayake	Case-Study Team, IPID, Sri Lanka
28	Mr Ranjith Mahindapala	Case-Study Team, IPID, Sri Lanka
29	Ms Hasara Kalubowila	Case-Study Team, IPID, Sri Lanka
30	Mr C W Sirisena	Case-Study Team, ex-PMHE staff, Sri Lanka

(g) Workshop for sharing the preliminary findings of the study and feedback – Agenda

Date and Venue: 26 August 2016; Nature Lanka Hotel, Dehiattakandiya

09 15	Tea and registration
09 30	Address of welcome • **K A C Wimal Kumara (**Resident Project Manager, System C)
09 50	Introduction to the PMHE Project • **Felix Wijesinghe** (former PMHE staff) This was followed by the screening of the Sinhala version of the video "*Strong Together*" made by the PMHE project to share its experiences in System C
10 20	Introduction to the DOLI study • **Ann Waters-Bayer** (PROLINNOVA International Support Team, Royal Tropical Institute, Amsterdam)
10 30 – 10 50	Sri Lanka study – key features and preliminary findings • **Ranjith Mahindapala** (IPID)
10 50 – 11 00	Tea (and group formation)
11 00	Response from MASL **Anura Dissanayake (**Director General of MASL)
11 15 – 12 00	Field perspectives on the outcomes of PMHE Project • Farmer perspectives (**W Padmini from Veheragala**) • *Praja Sewaka* perspectives (**V A Wimalawathie from Dolakande**) • MASL perspectives (**Edward de Mel, Chief Agronomist MASL**)
12 00 – 13 30	Way forward • Facilitated by Mallika R Samaranayake (drawing out the outcomes of the workshop) Discussion
13 30	Vote of thanks and Closure • **Mallika R Samaranayake** (IPID) and **Chesha Wettasinha (**former PMHE staff, PROLINNOVA International Support Team, Royal Tropical Institute, Amsterdam) Lunch at Nature Lanka Hotel