

Demonstration Project Series No. 1

Results and Lessons Learnt from the First Batch of Local Demonstration Projects 2010-2013



**Results and Lessons Learnt from the First Batch
of Local Demonstration Projects 2010-2013**

Published by

The Mekong River Commission, Vientiane, Lao PDR, October 2014

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Editors: Federico Rodriguez and Sopheak Meas

Cite this document as

MRC. (2014). Results and lessons learnt from the first batch local demonstration projects 2010-2013 *Demonstration Project Series No. 1*. Vientiane: Author.

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Seven Development Partners, including Australia, Denmark, European Union, Finland, Germany, Luxemburg, and Sweden, provide financial support to the work of the Mekong River Commission's Climate Change and Adaptation Initiative. This particular project and its publication would not have been possible without their kind support to which we owe our gratitude.

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ACKNOWLEDGEMENTS

The evaluation was undertaken by Mr Alan Ferguson, independent consultant, with the direct assistance and support of Dr Nguyen Huong Thuy Phan, Dr Tran Mai Kien, Mr Nuon Vanna, Ms Tatirose Vijitpan, Mr Douangchanh Lopaying, and Mrs Silisakhone Keophilalay of the CCAI, Mekong River Commission Secretariat in Vientiane.

The kind assistance and input of the National Mekong Committees and national project team members in the countries are also appreciated, especially from HE Mr Kol Vathana, Dr Heng Chan Thoeun and Mr Loeung Kesaro (Cambodia); Mr Sivannakone Malivarn and Mrs Bounyaseng Sengkhammy (Lao PDR); Mrs Ruamporn Ngamboriruk and Ms Atcharaporn Daisai (Thailand); and Dr Nguyen Anh Duc and Dr Nguyen Huy Phuong (Viet Nam), who assisted with information and questionnaires and interviews. The time and input provided by national, provincial and district staff of the projects and by community members in the countries are also gratefully acknowledged.



EXECUTIVE SUMMARY

The evaluation involved an assessment of project performance and results according to five evaluation criteria. The objectives of the evaluation were to: (a) assess the demonstration project achievements and performance, (b) identify the key lessons learnt related to design, implementation and management, and (c) determine the implications and opportunities for subsequent demonstration projects under the CCAI framework. The evaluation included the local demonstration projects in Cambodia, Lao PDR, Thailand and Viet Nam. Brief field visits were completed in Cambodia, Lao PDR and Thailand but this was not possible in Viet Nam where the project was completed much earlier.

The evaluation found that the CCAI demonstration projects provided important capacity building and experience in sub-national adaptation planning that serve as an initial basis for ongoing development of provincial and local adaptation activities. The approaches and quality of results varied across the countries and the demonstrations intended for replication have not been fully completed and documented. However, overall most of the project objectives have been achieved although often delayed well past the planned time frame. Some gaps still need to be addressed by local governments and national project teams. This includes the completion of the community pond at Prey Kandeang village in Cambodia, the irrigation system management arrangements and test plots for flood-tolerant rice in Champhone District, Lao PDR, the integration of climate monitoring and learning centre programmes into local institutions in Thailand, and the

full documentation of the vulnerability and adaptation assessment at Kien Giang province in Viet Nam. These gaps currently limit the demonstration and replication value of the projects.

The projects highlighted the importance of both high level national analysis of climate change impact and bottom-up adaptation action to address local climate stress issues such as flooding and drought that affect livelihoods, food security and living conditions. Climate change adaptation policies are only useful if they can mobilise effective responses to climate-related problems that communities face.

The projects have been both relevant and timely in their contributions to national climate change adaptation priorities. Many of the expected results have been achieved with some key gaps as described in the report. Project management and efficiency issues were apparent due to implementation delays, centralised management, communication issues, sustainability, uncertainties and limited monitoring of progress. The small scale of the projects, the layers of national, provincial and district participants and the lack of project implementation skills and support imposed some constraints on project delivery. The potential to sustain and to replicate the adaptation planning models also warrants further attention.

The evaluation results are summarised as follows:

Relevance of the projects: The projects have been highly relevant and timely in their contributions to national climate change adaptation priorities. They have initiated the process of sub-national climate change vulnerability and adaptation assessments in the MRC Member Countries and appear to be most advanced in Viet Nam.

Effectiveness: Overall, the projects have achieved many of their awareness-raising and initial adaptation planning objectives, as well as an understanding of the challenges and lessons for advancing adaptation in the Member Countries. However, there were distinct constraints in the demonstrated site measures which limited their replication potential: flood tolerant rice varieties flooded out, sandy soils declared not usable, alternative livelihoods not adopted, irrigation system financially non-sustainable, uncertain community pond management, early warning systems not integrated with extension services and farming decisions. There were also no indicators within the projects for measuring extent of achievements and the evaluation participants had widely different estimates of project achievements.

Efficiency: Project delays were the most apparent issue, primarily related to a lack of capacity and weak project design and organisation. Some of the project field activities had inadequate technical supervision, and coordination and communication constraints were noted during the evaluation discussions. The common challenges were earlier summarised from progress reports (e.g., Second Meeting of MRC CCAI Steering Committee) that noted: (i) limited information regarding climate change and impacts at local

level, (ii) insufficient knowledge and experience on climate change adaptation, and (iii) internal coordination and management issues.

Sustainability of project results: While the mainstreaming of adaptation into development budgets will facilitate ongoing momentum, the sustainability of the specific CCAI site investments needs to be considered in terms of water user group responsibilities and climate monitoring equipment/systems, particularly when the intent is to demonstrate replicable measures. Long-term maintenance of improved infrastructure – e.g., irrigation systems or community ponds – is essential for promoting proven models for replication.

Impact of the projects: The impact of the projects to date has mostly been related to the introduction and orientation provided to government authorities and communities, who are part of the national project teams and direct beneficiaries, respectively. The projects have prepared the CCAI stakeholders and national and districts teams for more formal sub-national adaptation strategies and budgeting within the government systems.

The lessons learnt focused on the need to ensure greater local participation in adaptation design and implementation, mechanisms for enhancing farmers' knowledge, community action plans that are more concrete and feasible to implement, skills and capacity development for project implementation, improved coordination and cooperation for all levels, and the need for designated staff and responsibilities at various local, district and provincial level. Five key lessons are described:

Lesson # 1: Technical assessment of adaptation viability and sustainability in the local context is essential. Replication and scaling-up depend upon proven, fully viable technologies and practices.

Lesson # 2: The climate change adaptation mainstreaming process (integration into development plans and budgets) needs to be better defined at the provincial and district levels and more participatory in order to have an impact on reducing climate change vulnerability.

Lesson #3: Community commitment to and ownership of a project requires an early focus on community organisation and mobilisation through a bottom-up community-based approach.

Lesson #4: Short-term orientation and exposure to adaptation measures may not be sufficient for capacity development and widespread adoption of new climate-smart practices.

Lesson #5: Project design and monitoring and an effective management structure can influence the quality and measurement of results.

The general implications of the lessons learnt for future projects can be summarised as follows:

- a) more technical capacity and quality assurance in the adaptation measures being demonstrated;
- b) increased participation of and communication with the project stakeholders and community beneficiaries;
- c) enhanced capacity development and mentoring support for the local project teams for more effective and efficient project implementation;
- d) better roadmaps and defined procedures for integrating local adaptation measures into development plans and budgets based on 1st batch experiences (how to move from theoretical to practical action); and
- e) more rigorous project design, monitoring of progress and reporting on performance.

Eleven recommendations are provided, including action on:

- Undertaking final work to ensure the site demonstrations in each of the countries serve as replicable models of climate change adaptation.
- Integrating recommended adaptation measures into provincial and district development plans and programmes in Cambodia and Lao PDR.

- Consolidating lessons learnt and recommending CCAI adaptation planning and investment models or best practices as a basis for future scaling-up and promoting replication in other provinces or areas.
- Capacity development plans that are results-oriented, including assessment of participant needs, tailoring of the activities to address specific gaps or objectives, formal training plans, and follow-up evaluation of capacity development results.
- Further refinement of the CCAI local demonstration projects strategy to sharpen the strategic focus, enhance the links with other flood/water management activities of MRC and with national climate change and adaptation strategies, plans and programmes, and provide more guidance for CCAI to leverage impacts on climate change adaptation.
- More rigorous results-based procedure or checklist for CCAI local demonstration plans including monitoring and progress reporting standards.
- Management structures for CCAI local demonstration projects with greater stakeholder participation, effective project steering committees, and specified responsibilities for project implementation staff.
- Strengthening regional and national project teams, the NMCs and designated managers in the country for quality assurance in project delivery, tracking project progress and risks, and quarterly reporting functions.

INTRODUCTION

1.1 Purpose and objectives of the evaluation

In 2009, the Mekong River Commission initiated a series of demonstration climate change adaptation projects under the Climate Change and Adaptation Initiative (CCAI). The first batch of CCAI local demonstration projects started in 2010, and these were largely completed by the end of 2012. A second round of support to demonstration projects has been initiated. This may include the continuation of demonstration projects at some sites, as well as projects at newly identified sites. Before commencing the second round of support to demonstration projects, CCAI proposes to carry out an evaluation of the current projects.

This evaluation report assesses CCAI demonstration projects located in four Member Countries (Figure 1):

Cambodia: Peam Ro, Peam Chor, Me Sang, and Preah Sdach districts in Prey Veng Province; Prek Treng, Stung Sante Pheap, Mrenh and Por villages have significant exposure to frequent floods and severe droughts.

Lao PDR: Champhone District, Savannakhet Province; the rice-farming villages of Kengkok Neua, Nakathang and Taleow in Champhone District are all affected by flooding in the wet season and drought in the dry season.

Thailand: Sai Na Wang and Wang Luang districts in the Young River

Basin, a tributary basin of the Chi River watershed where drought and flooding are chronic problems.

Viet Nam: Binh Giang Commune, Hon Dat District, Kien Giang Province experiences climate change related heavy rainfall combined with high flood levels and high tides that result in inundation of agricultural fields, especially in depressed land.

The purpose of evaluating the first batch of CCAI local demonstration projects is to provide accountability for the results produced by these projects, and secondly to enhance the overall effectiveness of the CCAI demonstration projects by drawing out the lessons learnt for future demonstration and piloting activities.

The objectives of the evaluation are to:

- Assess the demonstration project achievements and performance in relation to agreed Evaluation Criteria related to Relevance, Effectiveness, Efficiency, Sustainability and Impact;
- Identify the key lessons learnt related to design, implementation and management of the projects that will assist in the development and management of future projects; and,
- Determine the implications and opportunities for subsequent demonstration projects under the CCAI framework.



Figure 1. Map of CCAI 1st Batch Local Demonstration Project Locations

The evaluation was intended to contribute to better-informed decision-making, foster an environment of learning by doing and promote greater accountability by all concerned. Value added from this evaluation will be achieved through the application of lessons learnt in the preparation and implementation of future meaningful and significant adaptation projects for the region.

The evaluation was expected to serve two key evaluation outcomes:

- 1) Members of concerned regional and national agencies clearly know about the progress and impact made in implementing the first batch of CCAI local demonstration projects; and
- 2) Members of concerned regional and national agencies draw lessons for improved local demonstration project planning and implementation.

1.2 CCAI context for the local demonstration projects

The CCAI seeks to facilitate climate change adaptation planning and implementation through improved strategies and plans at various levels and in priority locations throughout the Lower Mekong Basin (LMB). It contributes to the Millennium Development Goals, poverty eradication and improved food security. The CCAI runs over four phases ending in 2025. The initial phase began in December 2010 in which institutional arrangements were set up, priority studies conducted and partnership agreements established.

The CCAI is synchronised with the MRC strategic planning cycles commencing with the MRC Strategic plan 2011-2015. Three five-year phases are planned based on implementation experiences. The current CCAI Programme Implementation Plan 2011-2015 provides the detailed design for the first full five year operational phase of the Initiative which emphasises demonstration and exchange.

It notes:

The CCAI will pilot and demonstrate adaptation planning and implementation throughout the region including the processes of climate change impact and vulnerability assessments. It will develop the tools and provide information to support the adaptation planning process. Local demonstration sites will be established to test the methodologies, build capacity, start implementation and provide lessons learnt¹.

The CCAI local demonstration projects in Cambodia, Lao PDR, Thailand and Viet Nam focused on assessment of impact of climate change on socio-economic conditions (national and provincial levels); raising of awareness and creating of knowledge on climate change and climate change adaptation; conducting vulnerability and adaptation assessments (at local levels); building of climate change adaptation capacity at multiple levels; and developing of climate change action plans, and mainstreaming of climate change adaptation into local development planning. The Thailand and Viet Nam projects focussed on adaptation

¹ Mekong River Commission, Climate Change and Adaptation Initiative, Programme Document 2011-2015, August 2011

planning – one for a river basin (a sub-basin within the LMB), the other for a province – while the Cambodia and Lao projects focus on adaptation actions. All four projects require adaptation plans to be integrated with existing development planning so they can be picked up through government budgets and other international funding/projects².

The CCAI local demonstration projects aimed to (i) test the planning methods developed at the local level; (ii) identify adaptation options including those based upon local experience and knowledge; and (iii) ultimately put them into practice where feasible. The preparation of CCAI local demonstration projects started in 2010 and one project in each Member Country was selected against the criteria. The five selection criteria consisted of (i) *relevance* to the scope of CCAI; (ii) having *representative* features in relation to ecosystem types, economies and communities of the LMB; (iii) facing high vulnerability to climate change; (iv) possessing *demonstrative* value; and (v) having potential of *sharing lessons* for up-scaling and replicating. National project teams in each country were established and the activities began in the second half of 2010. The planned activities were completed by early 2013.

Apart from the activities being carried out at each demonstration site, a series of activities to share experience and lessons on adaptation planning and implementation in the LMB have been conducted. CCAI plans to build and expand a network of local adaptation planning and implementation projects in the LMB. The network will include not only the demonstration sites directly established by

the CCAI but also the projects run by other organisations in the Lower Mekong Sub-basin region. The objectives are to foster replication of identified adaptation measures and up-scaling from single practice to wider application in local, sectoral and national development plans³.

The CCAI local demonstration projects are providing support to governments, local authorities and communities in their endeavours to tackle the challenges of climate change. These projects contribute to the four expected outcomes from CCAI:

- 1. Demonstration of the adaptation planning process focusing on tangible outputs through pilots and demonstration sites.** Member Countries are concerned to see appropriate adaptation options identified to increase resilience to climate change. It emphasises the need for demonstration, exchange and learning to improve performance and help shape adaptation plans. A very important part of the CCAI approach is to use existing experiences and knowledge as a starting point and to feed back the lessons learnt from implementation in pilots and demonstration sites into adaptation strategies, plans and specific adaptation measures.
- 2. Building the capacity of LMB institutions, specialists, programmes and communities in adaptation planning and**

² Mekong River Commission, Climate Change and Adaptation Initiative, 2011-2015 Programme Document, July 2011, p.6.

³ Second Meeting of MRC CCAI Steering Committee, Agenda Item 4, 16 November 2011, Phnom Penh, Cambodia, p. 1.

implementation, including the application of planning and assessment tools developed under Outcome 1 and the adaptation measures demonstrated in the pilot and demonstration projects. This will ensure that capacity is built in measures that are appropriate to conditions in the LMB countries. The general lack of knowledge and the general uncertainty about climate change impacts call for awareness raising as an important element of building capacity.

- 3. Improved policy frameworks to promote adaptation and, most important, to integrate adaptation as a key ingredient in development planning at different levels (e.g. in the BDP).** An important aspect is a monitoring and reporting system to make governments and communities aware of the progress they are making in adaptation and where gaps remain. Appropriate communication of the results to support the awareness raising and disseminate knowledge, tools and lesson learnt is integrated with this.
- 4. Steady and continuous support to Member Countries through partnerships and networking facilitated by the CCAI.** The outcome also relates to the longer term sustainability of the initiative for which alignment with the MRC Strategic Plan is a key aspect as is the wider partnerships and networks that

are so important for coordination of efforts and development and sharing of ideas⁴.

1.3 Evaluation criteria and methodology

The evaluation was guided by the specified Evaluation Criteria and the Evaluation Methodology, both of which are presented below.

Evaluation Criteria

The evaluation criteria were specified as follows:

Relevance

The extent to which the projects are in line with the needs and priorities of its target groups, the policies of the Member Countries and development partner agencies, and the goals and objectives of the CCAI. This includes questions related to:

- Is the project directly clearly aligned with CCAI expected results?
- Was the project suited to local and national development priorities and organisational policies?
- To what extent are the objectives of the projects still valid?
- Were the activities and outputs of the project consistent with the overall goal and the attainment of its objectives?
- Were the activities and outputs of the project consistent with the intended impacts and effects?

⁴ MRC. (2011a). Climate Change and Adaptation Initiative Programme Document 2011-2015.

Effectiveness

The extent to which the projects have achieved their objectives and expected results (outcomes and outputs) or how likely they will be achieved. This includes questions related to:

- To what extent were the objectives and outcomes achieved / are likely to be achieved?
- What were the major factors influencing the achievement or non-achievement of the objectives and outcomes?
- To what extent were the planned project outputs completed?
- What were the major factors influencing the completion/non-completion of outputs?
- Were the actual results commensurate with realistic expectations from such projects?

Efficiency

The cost-effectiveness of the project activities compared to alternative project implementation strategies, the timeliness of project implementation and the general management efficiencies associated with project supervision and management decisions. This includes questions related to:

- Was the project cost-effective in terms of achievement relative to expenditures?
- Was the project designed and delivered in the least cost manner?
- Was project implementation delayed, and if so what effects did this have on project results and cost-effectiveness?

- Was project management pro-active and effective in responding to project implementation issues that may have arisen?

Sustainability

The extent to which the beneficial project results will be maintained after project completion, including institutional structures, community attitudes and financial drivers that may assist in sustaining successful adaptation measures. This includes questions related to:

- Will the benefits produced by the projects continue to influence climate change adaptation even after the initial external support has terminated?
- What are the major factors which influence the sustainability of the project activities and technologies?
- How financially attractive are the project activities to support continued beneficiary investment in carrying on the activities?
- How committed are government and community institutions to maintaining the project activities and results?

Impact

The positive and negative changes expected to be generated over a longer term as a result of the projects, including enhanced climate change adaptation capacity and measurable improvements in local and national social, economic, environmental and other development and climate change adaptation indicators. This includes questions related to:

- What are the overall effects of the projects, intended and unintended, long- and short-term, positive and negative?
- What effects did the projects have on changing conventional livelihood practices towards more 'climate smart' practices?
- Have the projects had made any real difference for the beneficiaries including gender equity circumstances?
- What are the scale and scope of the project impacts on people and governance systems?
- sensitive?
- Have results from demonstration projects contributed to local, provincial or national climate change adaptation planning and implementation?
- To what extent have partnerships (for example between actors on multiple levels) for climate change adaptation planning and implementation been strengthened?
- Will local, provincial and national partners continue the initiated activities?
- What are the main lessons learnt from the implementation of the demonstration project?

Evaluation Methodology

The core questions for the evaluation included:

- Have stakeholders been actively and meaningfully involved in project design, implementation, and monitoring?
- Have demonstration project activities been carried out as planned?
- What have been the main problems in implementing the demonstration projects?
- Has there been an increase in awareness on climate change adaptation among local stakeholders and their agencies and organisations?
- Have the demonstration projects resulted in local stakeholders and their organisations being better positioned and equipped for climate change adaptation planning and implementation?
- Have proposed or implemented climate change adaptation measures been gender-responsive and gender-

The evaluation methodology was based on: (a) review of documents, reports and surveys that describe progress on project outputs, outcomes and objectives as per indicators in the project design; (b) clarification of expected and actual outputs from the projects; (c) self-assessment of project achievements by project staff; (d) interviews with project participants and stakeholders to verify achievements and to identify issues related to project design and implementation; (e) where feasible, group discussions to review project experiences and lessons learnt; (f) selective site visits and field observations to compile evidence of local achievements and to consult with beneficiaries and stakeholders; (g) triangulation and corroboration of comments and inputs by project participants regarding project results, implementation issues and lessons, and (h) assessment of results and performance information in relation to the Evaluation Criteria.

The evaluation endeavoured to be evidence-based, transparent and participatory. The evaluation focused on the evaluation criteria

and questions presented above. It also endeavoured to compare the pre-project baseline conditions to current conditions. In all of the discussions, an emphasis will be placed on collegial and constructive dialogue and compiling reliable observations project performance and lessons. The interviews were assisted by an Interview Guide which provided

lead questions that facilitate consistency and triangulation of responses from those interviewed. The evaluation involved objective and independent review of the weight of evidence compiled from reports, interview/group discussion and site visits, and maximised stakeholder involvement and self-assessment. The evaluation steps are outlined in Figure 2.

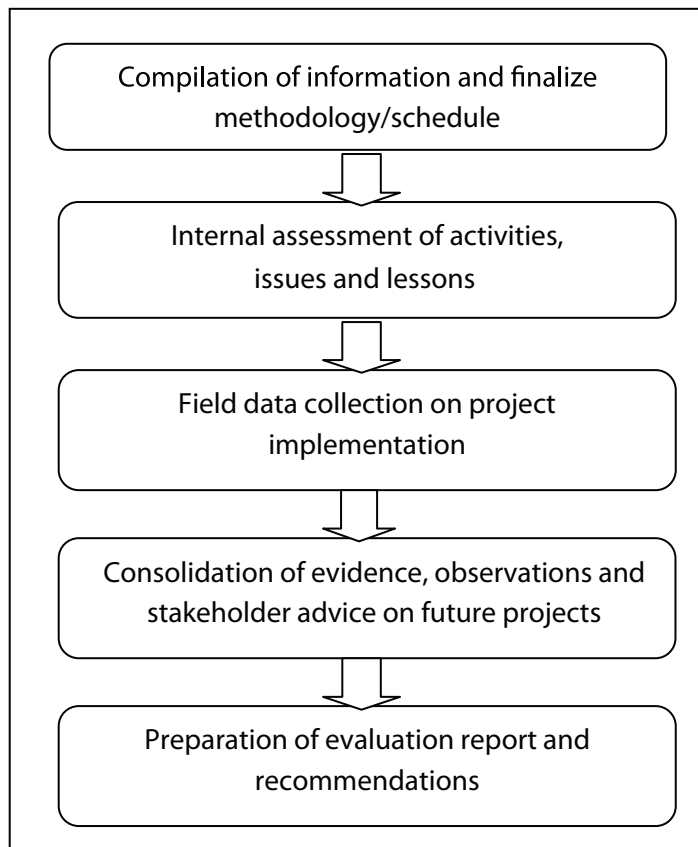


Figure 2. Steps of evaluation process

1.4 Evaluation process and schedule

The evaluation commenced on July 15, 2013 with the review of a Draft Evaluation Work Plan. This included narrowing the scope of evaluation questions from a long list to a shorter list divided into Written Questions (for response by the country project teams) and Interview Questions for Project Teams,

Beneficiaries and Exchange Visits and Training Participants (Annex 1). A summary of outputs and activities and responses to key questions is presented in Annex 2 and 3. The itinerary and list of contacts are in Annex 4. A list of references is also presented. On the basis of observations related to project designs, a suggested approach to results-based project design and management is included in Annex 5.

THE LOCAL DEMONSTRATION PROJECTS

Although there are distinct variations in the CCAI 1st batch local demonstration projects, a general pattern can be observed that highlights major components below:

- Community climate change vulnerability profiling and surveys
- Climate change modelling and impact assessments
- Agricultural extension and related decision support methods
- Awareness-raising and community mobilisation for adaptation
- Demonstration of adaptation technologies and practices
- Adaptation actions plans, strategies and implementation partnerships

These major components are addressed in varying degrees and methodologies in each of the projects (see descriptions on each country project in subsequent sections). The general scope and sequence of activities involved:

- Household or community profiles and surveys of the vulnerability and/or risk characteristics in the project areas. E.g., Households and genders survey and adaptation assessment, Prey Veng province, Cambodia; 'Tai baan' research and questionnaire survey in Sai Na Wang and Wang Luang districts, Thailand.
- Technical assessment of climate scenarios based on downscaled climate models and impacts assessment in the project areas. E.g., rapid assessment of climate

change impacts on rice farming in Savannakhet province, Lao PDR; sub-basin simulation model (IQQM) using PRECIS climate data in an area-weighted grid approach and hydrodynamic model and scenarios of flood, inundation, saltwater intrusion risk mapping in Kien Giang, Viet Nam.

- Agricultural extension and related decision support methods to determine the implications of the vulnerability surveys and climate assessments on agriculture and other sectors. E.g., FAO CropWat method for determining agricultural water management efficiencies under projected water availability constraints in Thailand; application of MRC Decision Support Framework including SAT (Soil-Water Assessment Tool) to determine vulnerability of key economic sectors in Kien Giang province, Viet Nam.
- Organisation of multi-stakeholder discussions, training and community forums to develop local knowledge of climate change risks and adaptation opportunities. E.g., Field observations through focus group discussions in Champhone district in Lao PDR; 'climate champions' engaged in farmer-to-farmer exposure to adaptation techniques in Sai na Wang district in Thailand.
- Site demonstration activities that illustrate the potential for agricultural

adaptation to climate change. E.g., Community pond for enhanced water supply in a selected village in Prey Veng province, Cambodia; introduction of flood tolerant rice varieties in project areas in Savannakhet province, Lao PDR.

- Provincial and/or local strategies and action plans for climate change adaptation and for mainstreaming adaptation into national policies and institutions in collaboration with various partners. E.g., 'Adaptation Actions for Prey Veng province' related to ten themes, Cambodia; Local climate adaptation action plan under the National Target Programme in Viet Nam.

2.1. Cambodia: Prey Veng Province with a focus on four districts: Peam Ro, Peam Chhor, Me Sang, and Preah Sdach

Prey Veng province is a low-lying province located within the boundary of the Lower Mekong Basin and has a border adjacent to south Viet Nam. It is intersected by two major rivers, namely the Mekong and Tonle Bassac, when seasonal flooding is influenced by the Mekong River hydrological regime and its floodplains extending from Kampong Cham down the Mekong Delta in Viet Nam. Seasonal siltation and sedimentation during seasonal flooding of the Mekong River assist the agriculture and fisheries productivity in the province.



Figure 3. Location of Prey Veng Province, Cambodia

The province is considered highly vulnerable to floods, droughts, wind storm, biodiversity ecosystem degradation as well as sea level rise which is part of the Mekong Delta. It has experienced severe flooding at least 10 times from 1982 to 2008. Climate hazards in Prey Veng province include flood, drought, windstorms, and insects. The province has been affected by a cycle of flooding and drought in the last three years beginning with the 2000 floods. The 2000 floods affected 30% of the population, killed 347 people, destroyed more than 7,000 homes and almost 350,000 hectares of rice. In the last three years, more than 80% of the land area in Prey Veng was inundated by flooding⁵.

The CCAI Local Demonstration Project covered the four districts of Peam Ro, Peam Chor, Mesang and Preah Sdech in Prey Veng Province. The project budget was \$100,000 and the completion was March 2013 (final workshop). The project built the capacity of local authority and stakeholders in Prey Veng province to assess the local impact of climate change, and vulnerability and adaptation assessment

⁵ CNMC. (2011a). Identification of key problem, baseline and compilation in supporting methods and tools for climate change adaptation assessment.

as well as lessons learnt from adaptation planning practice to assist the stakeholders in preparation and development of an adaptation strategy in Prey Veng province's Planning of Action.

Project Objectives:

1. To assess the impact of extreme climate events on socio-economic condition, climate hazards, to assist and support to local authority and stakeholders in local planning and decision making, and provide methods and tools for adaptation planning to address climate change;
2. To conduct vulnerability and adaptation assessment in district level in order to develop action plan for adaptation to climate change for community based practice in integrating local knowledge and their experiences; and
3. To build capacity and awareness raising on climate change focusing on the vulnerability and adaptation assessment for local authorities, provincial departments, districts level and stakeholders, and learn lessons and share experience from demonstration site project.

Project Outcomes and Outputs:

1. *Identifying key problems, baseline compilation in supporting methods and tools for climate change adaptation assessment*
 - 1.1 Status of socio-economic development, natural resources, biodiver-

sity in Prey Veng province for identifying key problems and baseline setting

- 1.2 Current and Future of the development of strategy, policies, plans or programmes and institutional arrangement and available information, and data related to climate change adaptation in Cambodia, including Prey Veng province
- 1.3 Supporting methods and tools for adaptation planning such as climate hazard including flood and drought risks mapping, impact of climate change, vulnerability and adaptation assessment, and disseminate information for awareness raising to concerned provincial departments and all key stakeholders
2. *Impact of climate change, and vulnerability and adaptation assessment, and adaptation planning practices for Prey Veng province focusing on the four targeted districts*
 - 2.1 Impact of climate change, and vulnerability and adaptation assessment, and adaptation planning practices for Prey Veng province
 - 2.2 Demonstration site project for Impact of climate change, and vulnerability and adaptation assessment, and adaptation planning practices for Prey Veng province focusing on the four districts
3. *Improved capacity building and awareness raising to adapt to climate change for all stakeholders at different*

level in Prey Veng Province in use of methods and tools for different adaptation planning

- 3.1 Provincial capacity strengthened and awareness raising in policy making and planning for adaptation to climate change at different levels

- 3.2 Capacity to monitor and report on progress and performance, and lesson learnt on climate change and adaptation in Prey Veng province at all levels

Project Area:

CCAI Demonstration Site Project in Prey Veng Province focused on four districts: Peam Ro, Peam Chor, Preah Sdach and Me Sang, involving 10 communes and 32 villages. Representative household surveys indicated that losses from flooding hazards affected 50% of rice farmers and 12% of chamkar (dry land) farmers. Most of the farms were less than 0.5 ha.

About 27% of respondents who have livestock - raising poultry, pigs and cows said they are experiencing losses due to the death caused by water-borne diseases or missing livestock. Drought was also a source of considerable losses, affecting 62% of interviewed households for rice farmers and 8% for chamkar farmers. Windstorms also damaged rice crops of about 9% of respondents.

Reported Results:

The main achievements of the Cambodia CCAI local demonstration project in Prey Veng were reported as follows:

- (i) Identifying key problem, baseline and compilation in supporting methods and tools for climate change adaptation assessment;
- (ii) Households and genders survey, vulnerability and adaptation assessment "Peam Ro, Peam Chor, Preah Sdach and Mesang districts", Prey Veng province, Cambodia;
- (iii) The Impact of Climate Change, and Vulnerability and Adaptation Assessment on Agriculture Sector, Rice Production in Prey Veng Province;

- (iv) The approach of climate change adaptation planning is to be integrated into their provincial investment plan and department's programmes and projects;
- (v) A climate change glossary in both English and Khmer; and
- (vi) In addition, five training workshops to build capacity to all stakeholder at national and sub-national levels and three of consultation meetings with stakeholders for CCAI project⁶.

The outputs of the project were also summarised as follows:

- Building capacity of adaptation climate change to local people and relevant stakeholders through training, case study or field visit

⁶ CNMC. (2013c). Final report of local demonstration project in Cambodia.

- Finding the lessons learnt, experiences, and approaches to help local community to adapt and reduce the vulnerability to climate change
- Supporting local authority to develop climate change adaptation planning
- Producing some documents to assist the developers for local community development.
- Reconstruct a pond for household and domestic use⁷.

A technical report was prepared: *The Impact of Climate Change, and Vulnerability and Adaptation Assessment on Agriculture Sector, Rice Production in Prey Veng Province* in order to assess:

- (i) Impact of extreme climate events: Climate Vulnerability Index and Districts and Commune Selected for Survey in Prey Veng province;
- (ii) Past and future climate change in Prey Veng province through climate modeling: Rescaling Factor, Reconstruction and Projection Climate Data, Emission Scenarios and Future Climate Change Condition;
- (iii) The impact of changing climate on rice production in Prey Veng province using several steps to analyze the trend of rice production in main rice growing areas, calculating the anomaly of rice productivity, and

developing a model for estimating anomalies of rice productivity from monthly rainfall in each province.

The methods for assessing the impact of climate change and vulnerability and adaptation assessment on agriculture sector involved climate change scenarios using two Global Circulation Models and the PRECIS data covering the entire Mekong River Basin. The models were used to project rainfall and temperature and to assess impacts on agriculture and water resources and the vulnerabilities anticipated in Prey Veng province.

The project also developed a methodology for field climate survey of households, local authority, concerned institutions, and gender, based on questionnaires and observations, and also be able to use PRA or Comic tools as necessary. The resulting households and genders survey, vulnerability and adaptation assessment *Peam Ro, Peam Chor, Preah Sdach and Mesang districts*, Prey Veng province, Cambodia, is a major effort at profiling and assessing climate impacts in the four districts. An example of some of the useful analyses is shown below:

⁷ CNMC. (2013d). Final workshop proceedings on disseminating and sharing the results and lessons learnt of the CCAI demonstration project with local, provincial and national stakeholders, and enhancing awareness of climate change adaptation for provincial key stakeholders and local communities in Prey Veng Province.

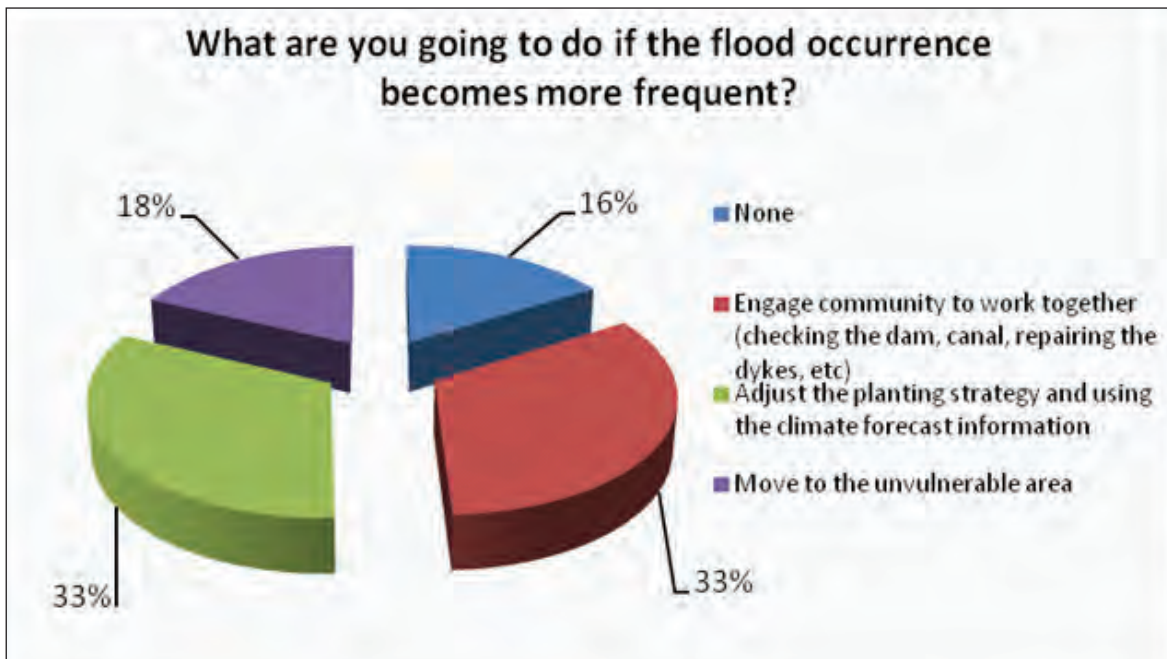


Figure 4. If flood occurrences become more frequent

Source: Cambodia National Mekong Committee, *Vulnerability and Adaptation Assessment: Household and Gender Survey for Prey Veng province, Peam Ro, Peam Chor, Preah Sdach, and Me Sang Districts, Prey Veng Province, Cambodia, Feb 2012, p. 61*

The project also undertook exchange field visits to build capacity of institutions to help farmers better adapt to climate variability and change in an area in Pear Reang district, Prey Veng province with the assistance of the Royal University of Agriculture (RUA) and Chea Sim University of Kamchaymear in cooperation with University of Queensland-Australia. The participants exchanged experience and observed demonstration of rice seedling, rain gauge use, temperature devices and grass cultivation for livestock as good practices for local community based adaptation to climate change.

The project considered two possible local adaptation activity sites – Sangke Chong and Prey Kandeang villages – and selected that latter site based on its vulnerability to climate hazards of flood and drought which affects rice crop yields. The reconstruction of a reservoir

to store water was undertaken in December 2012 to assist domestic water supply in the dry season. Approximately 195 direct beneficiaries of pond restoration were identified. Direct and indirect beneficiaries through the training workshops included the poorest smallholder families, small land holding families, women, and sub-national government officials.

The project concluded with Adaptation Actions for Prey Veng province which listed actions according to nine key themes:

- Promotion of integrated household farming system at sub-national level;
- Improvement of rice production to help farmers better adapt to climate variability and change;
- Safeguarding at provincial level including local community with climate hazards;



Figure 5. Community pond at Prey Kandeang, Prey Veng province, Cambodia

- Using water responsibly and efficiency in local community;
- Development and rehabilitation of flood protection dike in priority areas;
- Strengthening of community disaster preparedness and adaptation capacity;
- Improving efficient water gates and culverts construction in priority areas;
- Water supply for rural communities and agricultural purpose;
- Development and improvement of provincial irrigation systems;

They were prioritised under three categories: high, medium or low relating to the level of risk and controls in place to manage the risk. The budget estimations have been divided into three categories: minor, referring to less than US\$25,000; moderate, ranging from US\$25,000-100,000; and significant, over US\$100,000. A key element of the planning has been to design the crop planting strategies using available climate forecast information.

2.2 Lao PDR: Champhone District of Savannakhet Province

Champhone is the second biggest district of Savannakhet province and is about 54 Km from Savannakhet City. Its total land area of 1,114 square kilometers has a population of 105,415 people (2008) in 102 villages (ban). There are two main ethnic groups: Lao Loum and Lao Thueng. The main river in the area is Xe Champhone and the targeted villages are affected by flooding in the wet season and drought in the dry season. Rice production is adversely affected by flooding, erosion and inundation. The project budget was US\$81,000⁸ in addition to US\$19,000 to the national project team and the main period of implementation was in mid-2010 to 2012.

Based on the results from a rapid vulnerability assessment, high climate risks were identified in Kengkok Neua, Nakathang and Taleo villages focusing on flooding and drought, especially during August-September higher rainfall, lack of rain or less rainfall in early season between June to July, and low flow of Xe Champhone river during the dry season between December to March, which resulted in lack of water for dry-season rice crops. An increase in temperature in the dry season between February-March has also been observed.

⁸Original budget estimate was US\$103,000 but this later became US\$81,000 per Agreement No 060-2010, in addition to a separate contract for project team (mainly the leader)'s salary of US\$19,000 during the period of its implementation.

The three targeted villages were: **Taleow**, which has 98 households and 345 hectares of land affected by flooding; **Nakathang**, which has 130 households and 50 hectares of land affected by both flooding and drought; and **Kengkok Neua**, which has 175 households and 118 hectares of land affected by flooding, and 115 households and 76 hectares of land affected by drought.

Project Goal: To increase resilience and adaptive capacity of authorities and local community through the process of assessment, awareness raising, and introduction/implementation of adaptation options.



Figure 6. Location of Savannakhet Province, Lao PDR

Project Outcomes and Outputs:

1. *Supporting and building capacity for local authority and local community in climate change mainstreaming, planning and adaptation process*

- 1.1 Capacity strengthened and work supported for national, provincial, and local authority in assessing, planning, mainstreaming and implementing climate change adaptation through exercises on climate change impacts and vulnerability assessment and implementation of adaptation options; and,
- 1.2 Compilation of the findings and lessons learnt from Demonstration site's adaptation activities in Champhone district, Savannakhet province.

2. *Arrangement, identification and implementation of adaptation activities at the demonstration site*

- 2.1 Agreement for the Lao CCAI demonstration site activity organisational structure (institutional arrangement) and adaptation activities identified;
- 2.2 Implementation of adaptation activities; and,
- 2.3 Participation effort of villagers, technical knowledge and tools are provided for the implementation of demonstration activities.

3. *Stakeholder engagement and awareness raising on climate change impact and adaptation*

- 3.1 Local authorities and communities are informed about the impact of climate change, understand the need to adapt, and encouraged to participate in the activity

Project Area:

Xe Champhone River faces repeated flooding every year. The water levels change dramatically, for example, 7.86 metres for 2009 and on average 7.5 metres. In contrast, repeated drought occurs at 0.36 metres. The majority of the floods occur at Ban Kengkok Neua and Naka Thang. Na Kathang area contains a lot of eroded sandy and salty soil in the paddy field area, affecting rice growing productivity.

Kengkok Neua is one of the biggest villages of Champhone district. 70 % of people are farmers who grow rice in both rainy and dry season. The population consists of 1,879 men and 1,969 women. There are 336 families and 327 households. On average, every year 151 families (143 households) are affected by floods

and droughts. Floods normally last 10–15 days during the harvest weeks. The phenomenon has a direct impact on people living and farming around the Xe Champhone River.

Nakathang is one of the villages in Champhone district. Its total population is 1,443. About 175 households are normally affected by floods in the wet season and about 118 ha of agriculture area is often damaged. Also, during the dry season, droughts often damage 76 ha of 115 households. Farmers in 130 households who own 50 ha of rice field risk reduced yield every year due to flooding.

Taleo village in Champhone district has 345 ha of rice area owned by 98 households. One hundred and fifty ha is considered a high risk area because of flooding in the wet season.

Reported Results:

The outputs of the project were identified as follows in the Final Report of the project:

- In terms of capacity building: the project has increased resilience and adaptive capacity of national, local authorities through the process of assessment, awareness raising and implantation of selected adaptation options;
- Based on the local knowledge, a rapid vulnerability assessment was conducted and vulnerable groups of community were identified;
- The potential impacts from climate change, particularly from floods and droughts, were assessed and identified in the three targeted villages;
- A variety of awareness-raising activities was conducted (through the exercise of project cycle and study visit to a vulnerable place in Thailand), resulting in increased knowledge of climate change and adaptation (evidence is that during the workshops many participants were aware of the vulnerable group of people and level of impacts and proposed several coping activities on the ground at the end of the project);

- In terms of project planning and implementation, the project team at national and local levels has improved their skill from learning-by-doing and do not depend on the external technical assistance;
- *Awareness raising activities in Champhone district have included distributing posters and T-shirts about adapting to the impacts of climate change. Villagers and district staff have also joined interactive events, including games and comic drawing to promote discussion about local climate change issues⁹.*

Targeted stakeholders were trained on climate change risk assessment, modelling and data inputs (August 2010, 17 participants); strengthening resilience to climate change in agriculture for local villagers (November 2010, 60 participants); gender mainstreaming to climate change adaptation (May 2011, 33 participants¹⁰), basic scientific knowledge on climate change (climate change awareness), and adaptation identification and planning through exercise and practices. Baseline data on the impacts resulting from climate change in the targeted villages were collected. A report on climate change impacts and vulnerability assessment for the targeted villages was prepared, and a list of potential adaptation options was identified and prioritised¹¹.

Three priority adaptation activities were selected by communities in the targeted area: (i) an extension of the existing irrigation canal for about 1,000 metres was done to cover additional 76 Ha for cropping in both dry and wet seasons; (ii) two new flood-tolerant rice varieties (TDK-Sub1 and IR64) both obtained from the Rice and Cash Crops Research Centre within the National Agriculture and Forestry Research Institute (NAFRI) were planted in 1-Ha test fields of five volunteer households and; (iii) soil analysis to determine the suitability of sandy soils for agricultural crops.

The irrigation system extension and upgrading (in part funded by JICA) provided for a 1000m extension of an existing canal to service an additional 76 ha. Farmers who grow dry season rice using irrigation were able to achieve about four tonnes per hectare with the use of inorganic fertilisers, similar to the yields under wet season rain-fed rice production.

The progress report stated that most of the farmers were satisfied with the quality and yield of the newly introduced rice varieties and still continue planting for family consumption and sharing the grains with other families.

“There are different area impacts to flood tolerant rice, majority of area can tolerate flooding when level of water had declined [...] the range of this kind of rice is a new variety that improved from rice TDK1 trial in flood area since 2007, the capacity of this

⁹Sengkhammy, B., & Khoumphon, S. (2013). Final report of local demonstration project in Lao PDR.

¹⁰Pankeoand, C., & Chithtalath, S. (2011). Report on training/workshop on gender mainstreaming in climate change adaptation in Savannakhet Province.

¹¹Sengkhammy, B. (2012). Planning to climate change adaptation in community of Champhone District, Savannakhet, Lao PDR.

variety to recover flood up to 12-18 days. Unfortunately, the flooding in these areas occurred two times in 2011, the first time when rice was in the booting stage and the second time in the critical flowering stage, consequently, the yield resulting [was] low due to unfilled grains. Anyhow, it is still better than other regular rice varieties in the villages.” (Sengkhrammy & Khoumphon, 2013)

This suggests that while the new varieties are able to withstand additional flooding, they can still be flooded out in this demonstration area. It was learnt that the flood-tolerant varieties of glutinous (TDK1-sub1) and non-glutinous (IR64-sub1) rice are tolerant to submergence by flooding, but not for longer than 21 days. The farmers prefer the eating quality of TDK1-sub1 which is softer than IR64-sub1 variety¹². These varieties have proven their acceptance by farmers in many parts of Savannakhet province.

Soil analyses on 10 samples from 18 ha were also undertaken to assess alternatives for potential soil quality improvements, but the results were not promising for rice cultivation. For the land with sand deposition from a previous year’s flood, no solutions were offered. The analysis of the soil samples showed that the deposited sand is very low in organic matter and nutrients and high in salinity, making it currently unsuitable for agriculture¹³.

The field study for the Lao team (five participants from the national level and 10 from the provincial, district and village level) to the demonstration site of Thailand was held on 18-22 April 2011 to provide an opportunity to share information regarding to practices and methods to improve livelihoods of the communities that have been facing similar threats of climate change in Thailand¹⁴. From this study tour, the farmers increased their knowledge and skills in off-farm activities, not directly related to the climate change adaptation. The farmers tried to apply some techniques they had learnt about, such as herbal shampoo and detergent production for washing plates and rattan seeding. These activities were described by stakeholders as not successful and in need of technical and financial assistance for continuation. They also learnt how to produce compost and were able to apply the technique successfully after the visit¹⁵.

The risk assessment training course in August 2010 was designed to emphasise the participants’ understanding on all concepts concerned, data and information of climate change scenario, climate models, and working with climate change data. The practice session was divided into three groups and each selected different indicators to practice working with climate change data and then reporting results to the course participants¹⁶.

^{12, 13}WREA. (2010). Proposal of activities climate change adaptation demonstration site Champhone District of Savannakhet Province.

¹⁴LNMC. (2011). Report on field study to Nam Young Sub Basin, Thailand for local staff and local villagers at the demonstration site, Champhone District.

¹⁵Sengkhrammy, B., & Khoumphon, S. (2013). Final report of local demonstration project in Lao PDR.

¹⁶Sengkhrammy, B. (2010b). Training report on climate change risk assessment, modeling and data input for national officers (16-20 August 2010).



Figure 7. Irrigation at Kengkok Neua Village, Champhone district, Savannakhet, Lao PDR

An agriculture training course to strengthen resilience to climate change for local villagers at Champhone district took place on 24-27 November 2010 with 60 trainees from three villages. The objectives of this training were to provide knowledge on improvement of high quality of rice production, hybridise and frog breeding. A follow-up questionnaire suggested that 85% of trainees gained knowledge from the training compared to pre-workshop knowledge¹⁷. Provincial and local teams collaborated closely to organise the training but it was also noted that it was short and the contents were limited.

During the evaluation mission discussions, the participants rated project achievement between 65-100% and the Deputy Governor considers the project a success. The successful points included awareness raising and capacity building on climate change adaptation, studies on adaptation options, and participation of relevant stakeholders. Annex 2 lists many of the outcomes and products and describes the beneficiaries involved in the project.

¹⁷Sengkhammy, B. (2010a). Report on agriculture training course to strengthen resilience to climate change for local villagers at the demonstration site (24-27 November 2010).

2.3 Thailand: Young River basin with a focus on Sai Na Wang and Wang Luang communities

The *Climate Change Adaptation of Agricultural-based Sector in the Young River Basin* project was implemented by the Chi River Basin Organisation in northeast Thailand under guidance from the Thai National Mekong Committee. The Young River is part of the Mekong-Chi-Mun river system which flows into the Mekong main channel. The highland of the Young catchment has been facing long periods of drought, while the lowland often struggles from severe flood during monsoon months. The project budget was US\$100,000 but additional funding was provided by the university, WWF and other sources. The project commenced in late 2010 and was essentially completed in October 2011, although final reporting did not occur until 2013.

Within the Young basin, two communities were selected to demonstrate methods of assessing and responding to agricultural vulnerability to climate change. Sai Na Wang community has eight villages with 979 households and 4,115 populations, all of which are administered by the Sai Na Wang Sub-district Administrative Organisation. Almost all households are engaged in rice farming. Wang Luang community is located at the further downstream of the Young Sub-basin and has 18 villages with 1,398 households and a 6,281 population, all of which is administered by the Wang Luang Sub-district Municipality.

Project Objectives:

- review national, provincial and local policies related to climate change adaptation as well as to explore



Figure 8. Young River basin, showing the locations of climate telemetering stations

opportunity to integrate climate change adaptation into sectoral development policy;

- investigate the existing coping strategy and adaptation practices in agricultural responding to climate change impacts at the project site;
- establish and test the climate information management system to detect the changes of climatic conditions as a tool to support policy and planning process; and,
- formulate an evidence-based policy brief and case study report on community-based climate change adaptation options and strategy for policy making process.

Project Outcomes and Outputs:

1. Key information on existing policy and implementation activity related to CCA can be achieved.
2. The CCAI project action plan and the output can be improved. Support of provincial and local information, as well as participating actions, to the CCAI project activities can be achieved.
3. A preliminary climatic information system, as well as local government personnel, supporting the CCAI project has been established.
4. A thorough set of understanding of community-based perception and experience on past-present-future CC vulnerability-risk/sensitivity-adaptation to climate change impacts can be achieved. A detailed investigation on community-based present and future CC vulnerability and adaptation options and practices can be achieved.
5. A detailed guideline and recommendation on future community agricultural-based vulnerability, risk and adaptation options and implementation strategy.
6. Exchange information and learning experiences among community groups can be achieved.
7. Key information on CCA policy and implementation strategy is disseminated to northeast Thailand provincial and local governments.

Four primary investigation methods were used in the project, and later documented in a guidebook:

- Field participatory observation
- Focus group discussion
- In-depth Interview, five persons in each village, total 30 persons; 20 persons from different local authorities and civil society organisations.
- Household questionnaire (400 HHs)¹⁸

A participatory approach was used as part of the *Tai Baan* research, including using the maps as interactive learning tools to brainstorm profiling of climate hazards-exposure-risk-effect-adaptation practices, and engaging community members as volunteers working in partnership with the project fieldwork team.

¹⁸ Inmuong, Y. (2011). Guidebook for community vulnerability-risk-adaptation assessment from climate change impact.

Project Area:

Sai Na Wang sub-district: The Land Development Department reported in 2007 that the Sai Na Wang farmland has poor soil quality with less water permeability and in recent years the community faces severe drought in the dry season. The average land area used for rice planting is 1.92 ha per household. The pre-survey by the CCAI field researchers, prior to commencing the project activities, observed that most of Sai Na Wang residents face serious water scarcity problems during the dry months.

Wang Luang sub-district: Wang Luang is located downstream on the Young River where there are many wetlands as reservoirs and canals especially at the lower reaches. The

new riverbank dyke constructed to prevent flooding causes the water flow at the lower reach to circulate backward, inundating the rice paddies. During recent years, the water along the Young main channel usually dries up, creating water scarcity for household consumption and agricultural lands. There is also a large reservoir, Nong Boh, located amid Wang Luang which stores water for community uses. It has experienced conflict over water use between community groups especially with those who grow rice and vegetables in the dry season. The Municipality has undertaken Nong Boh water allocation and management, but the water level in the reservoir has still dropped sharply due to overuse by the dry season rice growers, causing severe water scarcity during the dry months.

Reported Results:

The following results were presented in the final report of the project¹⁹:

- The fieldwork results in the Young River Basin further indicate that the water for agriculture and household drinking is highly vulnerable to climate impact. The small farm monocropping with land area less than 1.6 ha is the most vulnerable group. The farmers who best adapted to the climate impact are those who transformed their farmlands into the integrated farming system by using a native seed variety as well as building their appropriate on-farm irrigation system.
- The GIS, Climate Model, Hydrological Model, Agriculture Model-CropWat, and the telemetering early warning system were successfully invented by the project technical team. This information management system is installed at four local government offices remotely, connected to the telemetering via the internet, for use as tools for development of CCA policy and plan development process.

¹⁹ Warnset, P., & Inmuong, Y. (2013). Local demonstration site for climate change adaptation of agricultural-base sector in the Young River Basin.

- The CCA information produced by the project as well as policy advocacy message were delivered to the provincial and local governments and some of those agencies later undertook reviews of their policy and planning documents and explored ways to integrate the CCA activities into their own institutional planning framework.
- The project successfully established the Community CCA Learning Centre at Sai Na Wang that now sees many farmer groups and government officers come to explore and learn from the 'climate champion' farmers.
- The project outputs also influenced a proactive movement between local governments and local business sector and led to a Memorandum of

Understanding (MoU) between five local governments and one business sector. This agreement encourages the partners to establish climate resilience pilot areas of each local government as well as set up an implementing connection between Sai Na Wang Sub-District Watershed Committee with Office of Water Resources Region 4.

- The agriculture-based CCA information created by the project enhanced the understanding of climate vulnerability and adaptation among regional, provincial, and local governments as well as civic group leaders and farmers.

It is clear that the mixed methods approach – (i) participatory action research (Tai Baan research); (ii) household survey; (iii) in-depth

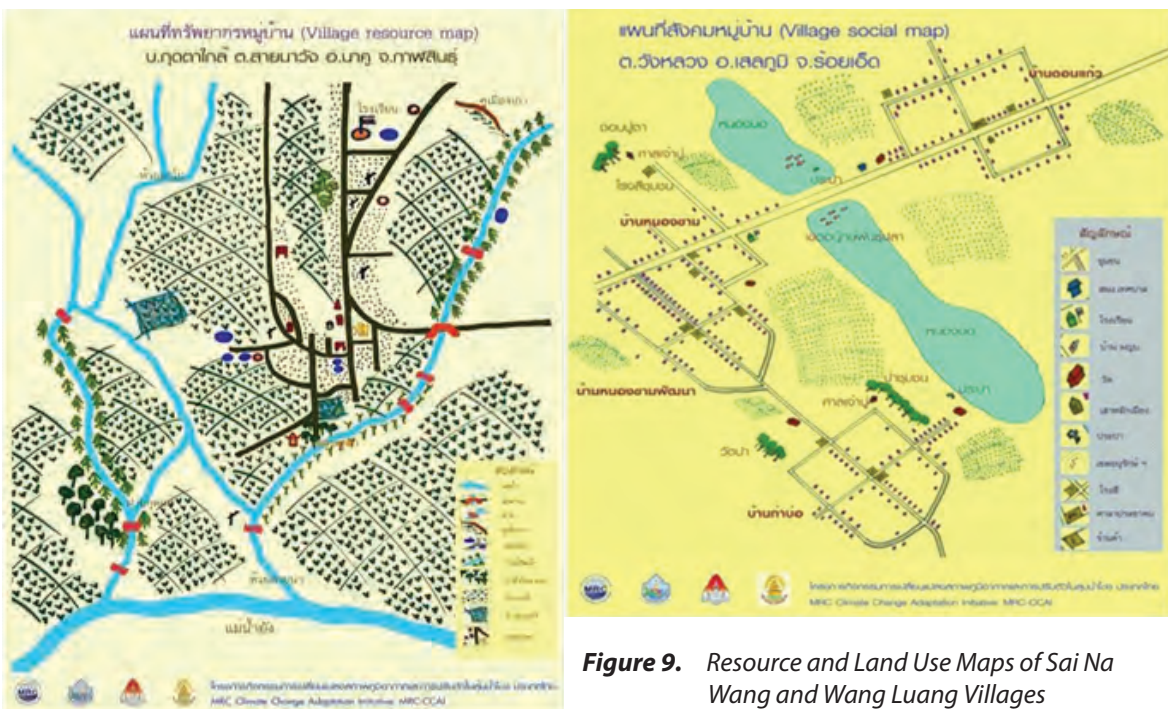


Figure 9. Resource and Land Use Maps of Sai Na Wang and Wang Luang Villages

interview; (iv) focus-group discussion; and (v) community meeting/workshop – has provided some important insights into adaptation opportunities. The use of telemetry for real time monitoring of climate change has also generated a lot of interest in the technology. Some local officials have been trained in climate analysis and CropWat applications and students at Ratchamankala University have benefited from the experience.

This is nevertheless a process still under development. The suitable adaptation best practices have not been fully documented for extension purposes, although the options for adapting to drought and rainfall variability and flooding have been identified²⁰. Climate champions have informally shared their skills at sustainable agriculture with some project participants. But the small budget and short period has constrained results. Most farmers have yet to benefit from the enhanced climate information and extension advice. No measurable effect on crop yields, water availability and incomes can be observed. The extent to which the new information systems and knowledge are sustainable remains to be seen, particularly when the ongoing active support of the university is needed. The project has completed an array of useful and promising outputs but impact on capacity to address climate change adaptation is relatively small and the mainstreaming into policy and extension operations is modest at best. Despite this, the Tai Baan research, combined with the technical systems for guiding farming practices, offers a very promising model for future adaptation programmes in Thailand.

²⁰See Table 1 and Table 2 of the Final Report, 2013, p.57-59.



Figure 10. Location of Kien Giang Province, Viet Nam

2.4 Viet Nam: Kien Giang Province with a local assessment focusing on Binh Giang commune

Kien Giang province is located in the Mekong Delta and is the most south-west province bordering Cambodia. It faces many problems that climate change is expected to exacerbate such as storm disasters, flooding, saline intrusion, biodiversity degradation etc. The province has experienced increasing climate related disasters. In the last 22 years, 35 typhoon-storms occurred and the intensity and frequency of typhoons has increased five

to eight times more than those in the earlier period. The Climate Change, Sea Level Rise Scenario for Viet Nam, determined that Kien Giang province was one of the most vulnerable provinces to climate change. It is predicted that by 2100 approximately 28.2 percent of the total area of the province will be submerged.

In addition to local impacts, transboundary flood and environment pollution along the Cambodia border are exacerbated by climate change and development. This has occurred in the face of a rapidly developing and very diverse economy with agriculture, fisheries and tourism as the most important sectors. The province has significant poverty problems with many ethnic groups and high inequities between rich and poor groups. The project budget was US\$100,000 and it was completed over one year between July 2010 and July 2011.

Project Objectives:

- Raise awareness and knowledge of climate change amongst the general public and build capacity of the local government officials and technical staff at the provincial level on climate change vulnerability assessment and adaptation to climate change;
- Assist and support the Kien Giang provincial authorities in developing the Action Plan to address climate change under the National Target Programme (NTP) through exercises on climate change impacts and vulnerability assessment and adaptation planning at the provincial level;

- Support the process of capacity building and mainstreaming climate change into provincial and local development planning and decision-making process;
- Conduct assessment of potential climate change impacts on the livelihood of local people and organise the community based adaptation in action, based on local knowledge in a selected location (a village or commune) within Kien Giang province;
- Address lessons learnt from the local demonstration project for further development of the next steps of CCAI.

Project Outcomes and Outputs:

1. *Problem identification, baseline setting, application and compilation of supporting tools and techniques to support the assessment process*
 - 1.1 Overview of the status of natural, environment and socio-economic conditions of Kien Giang province for identifying the major problems and setting the base-line conditions.
 - 1.2 Overview of strategy, policies and institutional setup and available information related to climate change and adaptation in Viet Nam, the Mekong Delta and Kien Giang province.
 - 1.3 Some supporting tools for adaptation planning such as flood risk mapping, saline intrusion mapping, impacts and vulnerability

assessment, community based ACVA etc. were synthesised, compiled (or developed if needed) by the project team and disseminated/transferred to the provincial and local authorities and planning staff.

2. *Exercise of adaptation planning, climate change impacts and vulnerability assessment at provincial level for Kien Giang province and at local level for a selected village or commune*

2.1 Exercise of adaptation planning, process and results of the climate change impacts and vulnerability assessment for Kien Giang province

2.2 Demonstration exercise on adaptation planning, climate change impacts assessment at a selected specific village or commune in Kien Giang province

3. *Better understanding and capacity strengthened for the provincial authorities, technical staff and planning officers to develop the provincial Action Plan to Climate Change under the NTP; public awareness and knowledge strengthened on current and potential climate change impacts and vulnerability in the province and at the selected site*

3.1 Public awareness raised and capacity strengthened for the provincial and local authorities, technical staff and planning officers

3.2 Better understanding of the provincial authority, technical and planning staff on how to develop the provincial Action Plan to Climate Change under the NTP

3.3 Compilation of the findings and lessons learnt from local demonstration project and adaptation activities in Kien Giang province, prepare and finalise the Final Project Report and disseminate/share the results.

Project Area:

Binh Giang commune is located in the Hon Dat district of Kien Giang province. Flooding and salt water intrusion are major climate risks in the area. According to the results of the study, if sea level increases 75cm, 80% of the province's area will be flooded with more than 0.5m of depth. Most of the population residing along rivers and coasts will be at risk of sea level rise and unexpected and worsening weather phenomena. A great challenge of this coastal area is high risk of economic loss and damage and people casualties due to (i) extreme event;

(ii) increase in investment demand to improve sea dyke quality and height to cope with rising sea level, especially during high tide and storm surge; and (iii) increase in investment in other development areas and in repairing of transportation infrastructure to adapt to climate change. Increasing temperature and sea level also threatens coral reefs and mangrove forest, as well as ecosystems, which are the basic foundation for aquaculture and cultivation near the coastal areas.

Reported Results:

The main results of the project were described as follows:

- (i) Determination of all issues relevant to climate change, establishment and application of baseline data, compilation of technical support tools for assessment;
- (ii) Assessment of impact and vulnerability to climate change for key sectors related to water in Kien Giang province and for local people in selected site;
- (iii) Implementation of the pilot activities to prepare community-based action plan on CCA for Binh Giang commune, Hon Dat district, Kien Giang province; and
- (iv) Increase of knowledge and awareness of local communities and strengthened capacity of provincial and local authorities and the technical staff in developing the provincial action plan for CCA under the NTP in the near future²¹.

The project achieved all of its expected results, as reported below in the Final Report²².

Outcome 1:

- The problems related to climate change impacts on key water-related sectors (including sea level raise

and salinity intrusion), potential risks and adaptive capacity in Kien Giang province were identified and analysed. The current status of climate parameters and trend, natural resources and ecosystems, socio-economic development of the province were defined as baseline conditions. The supporting tools and techniques to support the assessment and adaptation planning processes were reviewed, compiled and tested at both provincial and local levels.

Outcome 2:

- Exercises of adaptation planning, climate change impacts and vulnerability assessment were conducted at both the provincial level in Kien Giang and at the local level in the selected Binh Giang commune, leading to better awareness and knowledge, more active engagement and enhanced capacity of the target groups from the learning-by-doing process in practice.
- The local authority, civil societies and communities in Binh Giang commune and in Hon Dat district have been actively involved in those exercises and expressed high appreciation of the project's contribution.

Outcome 3:

- The understanding and capacity on climate change impacts and

^{21,22} VNMC. (2013). Final report of local demonstration project in Viet Nam: Preliminary study on climate change adaptation plan in Kien Giang Province.

vulnerability of priority sectors and locations, on adaptation planning process and concrete adaptation options, on uncertainty of climate change impacts (including sea level rise, shifted seasonality and disaster patterns) and climate scenarios have been raised for the government's managers, planners and technical staff at the provincial level. The knowledge and skills they received have met the demands and needs to further develop the provincial Climate Change Action Plan under the NTP (National Target Programme).

- The voices and suggestions of the local community and people have been heard, recorded and included into the local action plan.

The project faced several challenges which were identified in progress reports:

- Limited information regarding climate change and impacts at the local level.
- Insufficient knowledge and experience on climate change adaptation (in applying methods and tools to establish a community-based action plan because it is a relatively new concept in the MRC Member Countries).
- Internal coordination and management issues (many different organisations involved).

The key lessons related to the need to enhance capacity building, awareness raising and information sharing on climate change adaptation, to ensure adaptation measures are based on local practices as well as national directions, and to provide coordination on a regular basis, especially among national team members and to include greater participation of representatives from local governments/ organisations.

The success of the project has reportedly resulted from tight cooperation and coordination between the Viet Nam National Mekong Committee, the MRC Secretariat, the Southern Water Resources Research Institute, the Kien Giang People's Committee, the departments (especially the Department of Natural Resources and Environment, Planning and Investment, Agriculture and Rural Development), the People's Committee of Hon Dat district and Binh Giang commune. This project also helped to identify some ideas for improving water resources management of Kien Giang province, including:

- (i) Comprehensive picture of flow status and future trends in Kien Giang province, providing managers and planners with more insights for the development of socio-economic development strategy of Kien Giang province.
- (ii) Improved management of water resources demand based on principles of sustainable development and IWRM in Kien Giang province to ensure suitable water utilisation;

²³VNMC. (2013). Final report of local demonstration project in Viet Nam: Preliminary study on climate change adaptation plan in Kien Giang Province.

- (iii) Enhancing water supply and better water exploitation measures during dry season (especially structural measure)²³.

The following recommendations were made by National Project Team:

- 1) Considering and using the project results in near- and mid-term planning, especially in preparing the Kien Giang provincial action plan on CCA under the NTP.
- 2) Applying a harmonised combination of structural and non-structural measures for a) the key water related structures (increased fresh water storage during the dry season, mangrove development, economic use of marginal lands, flood protection and hydraulic structures, etc.), and b) non-structural, social measure (enhanced information, disaster warning system, resettlement, etc.)

- 3) Continuing local community-based studies and actions in Binh Giang commune in the second phase of CCAI. The study and assessment in Binh Giang commune were considered only at an initial stage, and it was recommended that more action-oriented activities should be considered in the second phase.

The proposed actions included:

- Shift from mostly agriculture-based to non-agriculture production modes.
- Land integration and land-use change
- House spoliation and retro-fitting.
- Shift from 1 crop to 2 rice crops per year
- Fisheries/aquaculture model to rice/combined rice-aquaculture model and vice versa
- Rural transportation development
- Crop pattern/ calendar shift
- Changes in crop cultivation practices (e.g. planting and fertilising methods, soil enrichment) as well as aquaculture cultivation
- Other actions to address specific needs/conditions²⁴.

²⁴Viet Nam National Mekong Committee, *ibid.*, 2013, p. 209.

EVALUATION FINDINGS

3.1 Relevance of the projects

The projects have been highly relevant and timely in their contributions to national climate change adaptation priorities. The projects highlighted the importance of both high level national analysis of climate change impact and bottom-up adaptation action to address local climate stress issues such as flooding and drought that affect livelihoods, food security and living conditions. Climate change adaptation policies are only useful if they can mobilise effective responses to climate-related problems being faced by communities. The projects have initiated the process in the Member Countries and appear to be most advanced in Viet Nam where direct integration of proposed measures into provincial and commune development plans has occurred.

In Cambodia, Prey Veng province faces regular annual flooding and the scarcity of water and water supply during the dry season. A strategy to address these risks is a high priority for the provincial authorities and the local community at the demonstration site is highly appreciative of the efforts to reduce the water quality and supply issues at Prey Kandeang village. The project has therefore been highly relevant to the country and local needs, particularly the technical and vulnerability studies. The uncertain linkages between adaptation sector strategies and local area strategies were noted in the evaluation discussions. The role of the *Adaptation Planning Initiative* that was produced by the project could be usefully explored in relation to the extensive *Cambodia Climate Change Strategic Plan (CCCSP)* covers priority sectors and cross cutting issues and

multiple government institutions engaged in sectoral plans). The CCAI project contribution toward the strategic plan and the large national climate change programmes in the country has yet to be determined.

In Lao PDR, the Champhone District pilot villages are under very high and regular flooding hazards during the rainy season as well as drought conditions during the dry season. For this reason, the project has been relevant and appreciated by the stakeholders. During the evaluation mission, participants described how the project is serving an urgent need and they expressed their appreciation for the CCAI and the project team's efforts to reduce this ongoing and serious vulnerability which affects subsistence rice production and food security for local people. The provincial and district authorities have been involved in and oriented to adaptation planning and have adopted the principle of mainstreaming climate change adaptation into the development plans and priorities. There is strong local interest in the adaptation concept and a commitment toward integrating adaptation into the district and provincial development plans, even if some of the applied measures have been less than successful (see Annex 3).

In Thailand, the project demonstration sites experience flooding and water shortages which create major problems for rice farmers. Awareness and capacity limitations affect the adoption of feasible technologies. The lack of climate change policy and plans and local strategies to address these issues suggest a high level of relevance and demand for the project activities. The acknowledged lack

of awareness and understanding of climate change adaptation in the communities and the significant number of voluntary participants in the project further substantiates its relevance. Capacity building and training needs were identified by the project team, including: (a) meteorological and climatic information management system, (b) CCA assessment methodology and (c) policy tools²⁵. The first two of these have been partially addressed by the project.

In Viet Nam, the project's relevance was related to its timing as a follow-up to the recent *National Strategy for Climate Change*. The project had a central task that provided a timely contribution to assist and support the Kien Giang provincial authority in developing the Action Plan to address Climate Change under the National Target Programme (NTP). A detailed concept strategy involving structural (physical) infrastructure and mangrove plantation and non-structural (socio-economic/management) land use and resettlement measures have been proposed. These proposals provided key input for the action plan. The technical inputs for the Kien Giang action plan also assisted the concurrent Master Plan for Water Resources of the Mekong Delta under climate change context, and the feasibility study for a "super dyke" and land reclamation project.

3.2 Effectiveness of the project achievements

Annex 2 provides a summary of the outputs completion. Overall, the projects have achieved many of their awareness-raising

and initial adaptation planning objectives, as well as an understanding of the challenges for advancing adaptation in the Member Countries. However, distinct constraints in the demonstrated site measures limited their replication potential: flood tolerant rice varieties flooded out, sandy soils declared not usable, alternative livelihoods not adopted, irrigation system financially non-sustainable, uncertain community pond management early warning systems not integrated with extension services and farming decisions. There were also no indicators in the projects for measuring extent of achievements, and the evaluation participants had widely different estimates of project achievements.

In Cambodia, the project has created important awareness of climate change issues and opportunities in the province where little existed previously. This is a significant achievement. Capacity was enhanced through the training and 'learning by doing' in the Field Survey of villages and in the downscaled climate modeling and vulnerability assessment by the Climate Change Department, MoE staff and consultants. The process and mechanisms to implement the proposed provincial strategies remain to be defined and developed. Although the general approach is to integrate adaptation planning into provincial investment plans and departments' programmes, guided by a *Conceptual Framework for Sub-national Adaptation Planning of Action (SAPA)*, it is not yet clear for example how the CCAI-funded 'initiative' will be utilised by the Disaster Management authorities and how implementation will be linked to other relevant departments and development processes.

²⁵ TNMC. (2010). Project proposal local demonstration site for climate change adaptation of agricultural-based sector in the Young River Basin.

The community pond is expected to serve a critical need for household water, although further time is needed to test the pond, complete the bank stabilisation and monitor performance and use by community beneficiaries. There is a patchwork of water supplies in the village and the pond appears to fill an important gap, especially given the apparent poor quality and reliability of the ground water. Fencing and planting vegetation along the top and sides of the berm remain to be completed. The commune council has reportedly organised beneficiary contributions to support the pond fencing (1 million Riel accumulated, equal to US\$250) but they are still short of funds. It was suggested that the community organisation also need further awareness and capacity building to manage the pond.

The use of engineered community ponds to capture rainwater, enhance river bank protection and promote livelihood opportunities is an important adaptation measure that requires further assessment by CCAI and monitoring of the results of the Prey Kandeang site experience. Significant agro-forestry and horticulture have been used successfully around similar ponds in other flood prone areas and this could be promoted provided that it does not interfere with the primary objectives of domestic water supply. Technical expertise in community pond management is clearly needed.

There are distinct limits to results expected from a small project that has multiple areas of focus and one demonstration technology/site. Some aspects of this project remain unfinished (fencing, plantation, water quality analysis) due to time, capacity and budget constraints and lack of an implementation plan. The project was implemented relatively quickly and mostly

separate from regular government operations and therefore sustainability may be uncertain despite the assurances of the government officials and community beneficiaries.

Very short training workshops, such as the *March 2012's Capacity Building to Monitoring and Reporting Progress, and Lessons Learnt on Climate Change Adaptation Planning in Prey Veng Province*, that attempt to cover a wide range of topics may be adequate for awareness-raising but are not sufficient for longer term capacity development. The capacity building objectives within the CCAI demonstration projects need to consider the purpose, scope and limitations of the project.

In Lao PDR, the achievements focused on awareness-raising about climate change with government authorities and local communities, introduction of an approach to impact and vulnerability assessment for the targeted villages, gender issues awareness and formulation of options for addressing climate change (e.g., flood tolerant rice varieties, irrigated farming for the dry season, organic inputs such as composting fertilisers and alternative livelihoods). Participants in the evaluation mission assessed achievement in a range of 65-100%. The initial concept of adaptation planning and mainstreaming into development plans at the provincial and district levels has been established in preparation for the next step of integrating specific adaptation strategies into these formal development programmes and government funding processes. Some uncertainties exist about how to do this, although the authorities are keen to pursue mainstreaming and participants appreciated the CCAI support. Uncertainties may be partly due to a lack of capacity and also the fact that none of the selected adaptation options have been fully successful for a variety

of reasons (see Section 2.2). Nevertheless, many stakeholders in Champhone district are now familiar with the adaptation issues and interested in further advancing a programme to reduce the adverse effects of flooding and dry season water scarcity on agriculture and food security.

The workshop discussions with provincial officials (July 2013) indicated a need to consider more technical data, upstream land use planning and management, forestry opportunities, flood risk maps for monitoring and reporting, more detailed flooding assessment and a better flood warning systems, in addition to new crops (which require less water but provide high yield and revenue), especially rattan for handicraft, mulberry for silk and grass for cattle, since the site may not be suitable to grow rice. This was proposed for subsequent projects.

The Savannakhet Province experience in this 1st batch suggests that there are limitations to small-scale modifications in agricultural practices in addressing major climate change risks. The flood-tolerant rice varieties are effective where flooding levels stay within about 21 days, and should be promoted in selected areas. But this technology can also be overwhelmed by the scale of the flooding problem, as seen in this demonstration project. Adaptation in these high risk flood zones may require a significant shift in the farming systems involving some land-shaping through berms, dykes and pond creation for multipurpose use of water and greater integrated farming methods. This may present socio-cultural barriers (changing from rice paddy to horticulture, livestock and other types of agriculture); it is more expensive than simply modifying crop varieties and planting practices and requires various forms

of agricultural engineering and especially a willingness of local farmers to engage in new forms of agriculture and crop diversification. However, it also offers significant income generation potential (e.g., vegetables, duck farming, fruit trees) and the financial return incentive can drive interest in and replication of these types of climate-smart agricultural activities. The small budget and limited technical assessment of alternative livelihood opportunities may have constrained the use of integrated farming and other adaptation methods.

The Lao experience also poses questions about the approach and expected results to integrating adaptation into the development of provincial and district socio-economic development plans and priorities. Given that the source of much of the increased flooding problem is associated with upstream sedimentation circumstances it may be more useful to have specific flood zone livelihood and management strategies nested within sub-basin strategic management plans that address the larger scale upstream sources of the local flooding problem. Development objectives and the critical adaptation strategies are clearly linked to water management in Savannakhet Province, which requires more technical depth and scale than has been available in this first demonstration project.

In Thailand, the project reported on the extensive community-based activities and the achievement of a certain approach in this CCAI project: action research, technical assistance, information sharing, and 'adaptation champions' to address specific flooding and water scarcity issues. With a limited budget, the project has initiated a distinct approach to community-based adaptation that may provide a strong foundation for future projects.

The key features of this approach were (a) extensive local engagement and partnerships, (b) a matrix of adaptation options to address particular issues²⁶, (c) improved access to weather data (through telemetry) and water management guidance (CropWat), (d) introduction of a community CCA learning centre, (e) outreach through farmer “adaptation champions” and (f) various guidance and outreach materials. Less progress has been made on mainstreaming climate change adaptation into policy and planning.

The project final reports also indicate some areas where effectiveness could be improved, most notably:

- The quantitative benefits from adopting the project technologies – agricultural productivity, household food security, and incomes have not been documented. There were only a small number of model farmers and the extent of uptake and dissemination are unknown.
- The need for “agricultural practices reform”²⁷ and the reluctance of traditional farmers to accept new methods was noted in the Final Report (see page 22) but the specific barriers and risk factors were not identified. The shift toward diversified, climate-resilient crops and integrated farming (crops, livestock, aquaculture, agroforestry) presents many challenges and the extension support methods for advancing this

shift need to be further articulated.

- The improved tools for better access to weather data and crop/water management advice need to be part of a system of climate-smart extension services that demonstrate their utility and value to farmers; how the information is used to enhance climate resilience and ‘early warning’ assistance is critical.
- The financial and institutional sustainability of CCA learning centres within local governments and the efficacy of investments in awareness-building and information exchange needs to be further considered.

The project primarily focused on awareness-raising about climate change, demonstrating an automated telemetric system for monitoring weather conditions along with the CropWat water use software, and engaging six local organic farmers as ‘climate champions’ who educate others about best practices (although no training or climate-resilience assessment of the model farms were undertaken).

A gap remains in creating the direct links between the improved climate and weather data and agricultural extension advice and services and linking this with community awareness, education and learning centers such as the one created at Sai Na Wang sub-district. Useful information has been compiled on local vulnerabilities and coping mechanisms and community members and students have been

²⁶See Table 1 and 2 in the Final Report - Household climate hazard-impact-vulnerability-adaptation due to drought and rainfall variability and flood.

²⁷Described primarily as “restructuring of farmland with effective water storage management combined with reforming their farming system”. See TNMC (2011). Thailand Climate Change Adaptation Initiative Project: Summary report

mobilised through action research but more comprehensive field testing of the adaptation strategies will be needed. The innovative, unplanned MoU that was established between local agencies and industry presents a platform for further action and an interesting example for other CCAI projects.

In Viet Nam, the project appears to have been highly effective in producing a functional adaptation plan, based on the reports provided by the national team, although the limited documentation and a lack of opportunity to fully scrutinise the results constrained the evaluation. It was reported that development of the Action Plan as an extension of the technical support provided by the project may have been limited by:

- i) insufficient baseline data and information;
- ii) little quantitative assessment of existing losses and damages as well as potential impacts to each economic sector and vulnerable area in the province;
- iii) lack of concrete community-based adaptation options/measures for local livelihood (what exactly community needs to do) in a water shortage condition (during dry season) and shifting seasonality.

The recommendations emerging from the technical analyses were general. After the transfer and training made by the project team, provincial technical staff could only run the model and mapping techniques by themselves for about ten months due to lack of technical support from national and regional (MRCS) teams, instability of computing system as well as limited capacity

of local computers/ equipment and staff. Not all the key technical staff (e.g. the director of provincial Hydro-Meteorological Service) could attend the training and knowledge transfer conducted by CCAI and some trained staff had left the department (moved to other positions), leading to lack of continuation and efficiency of tools applications. The province urged further technical and capacity building support from CCAI and VNMC as a follow-up action to this project.

3.3 Efficiency of the project implementation

Project delays were the most apparent efficiency issue, primarily related to a lack of capacity and generally weak project design and organisation. Some of the project field activities had inadequate technical supervision, and coordination and communication constraints were noted during the evaluation discussions.

The common problems and challenges were previously identified by all projects:

- **Limited information regarding climate change and impacts at local level:** The difficulty to obtain long-term and reliable data on climate and hydrology parameters is defined as a fundamental problem to acquire baseline data as well as to analyse the trends of future climate change at the project sites.
- **Insufficient knowledge and experience on climate change adaptation:** Concept and practice concerning climate change adaptation are relatively new. Some national teams find it difficult to apply

methods and tools during the project planning and implementation. Besides, as there are various technical terms involved, it is difficult not only for the team members to understand correctly, but also it is even more difficult to communicate with other stakeholders, especially local governments and local communities.

- **Internal coordination and management issues:** As the national team consists of representatives from various organisations and from different sectors (e.g. central and local governments, research institutes, universities as well as NGOs), the communication and coordination are sometimes not sufficient nor effective enough to carry out the projects in a timely manner. For some projects, the local governments also do not have specific plans and activities regarding climate change and adaptation and the officials had less awareness and motivation to contribute to the projects²⁸.

In Cambodia, delays were attributed (written questions) to staff turnover of the CCAI team (e.g. several changes/lack of officer in charge) during the project implementation period and to a flood at the target village that made it difficult to restore the originally selected canal project and the shift to the community pond project and related difficulties in coordinating local authorities.

The demonstration site project was planned to last for at least 12 months from the date of the agreement, but the actual time required from Proposal to Final Report was about 2.5 years as shown below:

Table 1 summarises the budget and expenditure data. There were some significant variations between budgeted and expended amounts. These are obviously estimated figures. It is difficult to assess value for money aspects since the measurable results compared to baseline status are unclear.

²⁸ MRC. (2011c). Second meeting of MRC CCAI Steering Committee: Agenda item 4.

Time	Activity
August 2010	Proposal for CCAI Demonstration Site Project
October 2011	Problem Identification, Baseline and Tools
November 5/11, 2011	Household and Genders Survey
November 2011	Training Workshop Proceeding on Provincial Capacity Strengthened in Policy Making and Planning for Adaptation to Climate Change at Different Levels, Prey Veng province
February 2012	Assessment on agriculture sector, rice production
April 2012	Capacity Building to Monitoring and Reporting Progress, and Lessons Learnt on Climate Change Adaptation Planning in Prey Veng Province
August 2012	Local adaptation action: pond restoration
February 2013	Adaptation Planning Initiative preparation
April 2013	Final Report

In Lao PDR, the project involved many collaborators including the Lao National Mekong Committee, the provincial team led by MoNRE, the Champhone district team and the CCAI staff at MRCS, overseen by a Project Steering Committee. An agriculture technical team was also involved from the Department of Agriculture, Ministry of Agriculture and Forestry (MAF). The main project activities were to be implemented from January to December 2010²⁹ but it required over three years to fully implement the project. The key dates from reports are noted:

- National Consultation Meeting on 22-24 December 2009
- Proposal of Activities Climate Change Adaptation Demonstration Site, July 2010
- Final Report of Local Demonstration Project in Lao PDR, June 2013

Delays were reportedly due to project overlap with the major transition in national institutional structures, the time required for various levels of input and approval and the slow transfer of funds. No minutes from the Steering Committee were available to track project decisions. The small project size and the array of activities and participants combined with several layers of management and oversight no doubt constrained project delivery efficiency. Insufficient budget and time were mentioned as constraints along with limited technical capacity of the project team and the good cooperation with district stakeholders takes time.

Officials from Savannakhet province suggested looking at the mechanism of cooperation and coordination of the national, provincial and district levels to assess the effectiveness of the resource inputs to operate the project. E.g.,

²⁹WREA. (2010). Proposal of activities climate change adaptation demonstration site Champhone District of Savannakhet Province.

³⁰Build province to be strategic unit, build district to be strong and comprehensive unit, and build village to be implementation unit

how the teamwork was set up, how it worked and how efficient it was; and how to improve the mechanism in order to align to the strategy of “3 Builds”³⁰ of the government. There is a desire to find appropriate coordination models which can be replicated and/or up-scaled to other areas/districts/villages.

In Thailand, the project was essentially completed in about one year, from the initial meetings in December 2010 to the summary report in October 2011 but subsequent communication issues and the process of transferring funds led to delays until the final reports were produced in 2013. A wide range of activities were nevertheless delivered in a relatively timely manner within a small budget (US\$100,000). The project management seems to have been pro-active in getting agreement between multiples agencies and mobilising community interest, two major constraints for most projects. Added financing was generated from the university and private sector to supplement the project budget³¹. The administration costs (22%) are higher than normal, no doubt due to the number of supervising bodies. The evaluation discussions also indicated some communication issues and the need for a local coordinator to better link the project team with the site participants.

In Viet Nam, there were no apparent delays, although staff changes did create some problems for ongoing use of the modelling. The short timeframe put pressure on the national project team so they could not properly undertake full and comprehensive analyses of all collected data and information from local surveys, nor properly monitor/measure or document all the activities and achievements (for example for lessons learnt and M&E purpose). Also due to time pressure the models could not be fully tested and calibrated in practice and the technical knowledge and skills transfer to provincial technical staff could not be properly followed up. The extensive profiling of development and infrastructure issues in the province may have been better used to focus on manageable community-based adaptation opportunities identified in the study³². Project expenditures were reported as exactly the same as the budget, suggesting an approximate accounting of expenditures.

³¹ E.g. Rajamangala University of Technology Isan Khon kaen Campus contributed financially est. 200,000 baht and through students supports maintenance of the weather stations. The local sugar company - Mitr Pol Sugar Group, has been funding education activities and reforestation.

³² VNMC. (2013). Final report of local demonstration project in Viet Nam: Preliminary study on climate change adaptation plan in Kien Giang Province.

Table 1 | Budget and Expenditure Data from progress reports

Description	Proposed budget (USD)	Reported expenditure (USD)
Cambodia project		
Outcome 1: Identifying key problems, baseline compilation in supporting methods and tools for climate change adaptation assessment	12,000	9,500
Outcome 2: Impact of climate change, and vulnerability and adaptation assessment, and adaptation planning practices for Prey Veng province focusing on the four targeted districts	33,000	34,000
Outcome 3: Improved capacity building and awareness raising to adapt to climate change for all stakeholders at different level in PreyVengProvince in use of methods and tools for different adaptation planning	30,000	32,500
Report and Recommendations	4,000	4,000
National Project Team	12,000	12,000
Administration and Support Cost	2,500	3,000
In country travelling	3,500	4,500
Contingency	3,000	3000
Total	100,000	102,500
Lao Project		
Outcome 1: Supporting and building capacity for local authority and local community in climate change mainstreaming, planning and adaptation process	33,000	22,037
Outcome 2: Arrangement, identification and implementation of adaptation activities at the demonstration site	28,000	35,987
Outcome 3: Stakeholder engagement and awareness raising on climate change impact and adaptation	8,000	5,155
Management and administration	12,000	2,000
Sub-Total to date		64,989
Technical support and reporting (final payment to occur)		16,011
Total	81,000	81,000
Thailand Project		
Outcome 1:Data collection and climate information system development	17,800	15,812
Outcome 2: Community survey, participatory research and experiences	36,000	35,500

Outcome 3: Awareness-raising, community meetings and climate learning centre displays	30,200	24,151
Outcome 4: Climate change adaptation policy reviews	5,800	2,165
Outcome 5: Administration and logistics TNMC , Chi RBO, Kalasin and Roi-Et Provinces administration	13,500	22,372
Total (note: based on Thai baht data; different exchange rate at commencement may account for differences)	103,300	100,000
Viet Nam project		
Outcome 1: Problem identification, baseline setting, application and compilation of supporting tools and techniques to support the assessment process	23,000	23,000
Outcome 2: Exercise of adaptation planning, climate change impacts and vulnerability assessment at provincial level for Kien Giang province and at local level for a selected village or commune	41,000	41,000
Outcome 3: Better understanding and capacity strengthened for the provincial authorities, technical staff and planning officers to develop the provincial Action Plan to Climate Change under the NTP; public awareness and knowledge strengthened	27,000	27,000
Travel and Miscellaneous	9,000	9,000
Total	100,000	100,000

3.4 Sustainability of project results

Sustainability of the CCAI investments is a concern, assuming that the 1st Batch of local demonstration projects is expected to result in small-scale rural infrastructure and agricultural and water management technologies and measures that are self-sustaining.

In Cambodia, the Prey Kandeang community pond requires follow-up assistance from CCAI and technical support from provincial authorities to ensure that the domestic water withdrawals occur in a manner that provides acceptable water quality (e.g., is the pond an acceptable alternative in responding to the local groundwater quality concerns?)

and equitable sharing of access to water. Controlling nutrient inputs and erosion of the pond banks will be critical. The issues that led to pond deterioration and the need for rehabilitation may not have been overcome and the responsibilities for completing and maintaining the pond need to be determined. A designated government official will need to be assigned to oversee final implementation of the pond with appropriate small-scale financing arrangements.

There are distinct limits to results expected from a small project that has multiple areas of focus and one demonstration technology/site. The project was implemented relatively quickly

and mostly separate from regular government operations and therefore sustainability may be uncertain despite the assurances of the government officials and community beneficiaries.

In Lao PDR, the continuation of climate change adaptation activities initiated by CCAI is in the process of mainstreaming into district socioeconomic development processes in order to be accessible to the national annual budget. The project has provided the necessary initial experience and introduced new concepts, such as crop diversification during the dry season. But it has not firmly established a prototype for local level adaptation planning that can be replicated elsewhere. Moreover, some concerns remain about the sustainability and demonstration value of some of the field activities due to the lack of effective management arrangements to maintain the irrigation pumps and canal, and the mixed results so far from flood-tolerant rice varieties (caused by the lengthy floods in 2011). Local farmers reported that the irrigation system was not functioning due to old, unreliable pumps³³. It is uncertain whether the investments in irrigation and hybrid seeds will be sustained without further support from CCAI, other donors or the government.

In this regard, sustainability of the small CCAI investment to date in Savannakhet may be questionable unless an adaptation programme is further developed in the same area. The Vice Governor of the district also noted that the district office is preparing

its draft socioeconomic development plan for 2015-2019 and mainstreaming climate change adaptation, as part of the 2nd batch project, could be incorporated into the plan if this is possible before the plan is finalized in September 2013. This readiness for budgeting for adaptation investments in the government systems is a positive outcome.

In Thailand, the sustainability of the project activities will depend primarily upon the university's continued engagement in action research and climate/water management at the project sub-districts³⁴, and the ongoing collaboration of the local organisations involved in the MoU and the local climate change learning centre (Sai Na Wang). The 'climate champions' will continue with promoting sustainable agriculture but widespread adoption of climate resilience best practices is uncertain without further expansion of the programme. The 'business case' – food security and income benefits for farmers to convert to more climate-resilient agriculture, has yet to be fully documented to assist sustainability, knowledge dissemination and replication.

In Viet Nam, there were also sustainability constraints related to dependence on technical staff and questions about the ability to fully apply the extensive studies in directing investments and action at the community level. The sustainability case was made to extend the demonstration project work at Kien Giang province with greater focus on community level action. Some minor aspects of sustainable

³³Kang Koknua village meeting, July 26, 2013; farmers stated 46 HH on the irrigation system, last year serving 52 ha with rice yields of 4-5 tonne/ha. Pump currently not working and cannot afford to fix.

³⁴Maintenance and sustainability of the project-funded hardware (automated weather stations) and software decision support technologies will depend upon the continued support of Rajamangala University of Technology who have installed and currently maintain the system.

financing were noted in the potential for use of micro-credit for community or household livelihood and resilience and potential fees that could be imposed to recover the costs for certain adaptation measures.

3.5 Impact of the projects

The impact of the projects to date has mostly been related to the introduction and orientation to adaptation planning by provincial and district authorities who had no earlier experience with adaptation concepts. The projects in all of the countries have prepared the CCAI stakeholders and national and districts teams for more formal sub-national adaptation strategies and budgeting within the government systems.

In Cambodia, the project has provided a useful example of provincial adaptation planning that complements the many other programmes for decentralised responses to climate change. The primary impact is the mobilisation of interest and commitment through development of a provincial and local climate analyses and a preliminary strategy of adaptation.

The status of the *Adaptation Planning Initiative* that was produced by the project will need to be further elaborated if it is to serve as a demonstration scheme, in part due to the limited involvement of the line agencies at the provincial level and the recent completion of the project (no actions implemented so far). With the support of the Deputy Governor, this draft 'plan' could provide a basis for further development mainstreaming with a focus on the most cost-effective adaptation measures

in specific districts and in conjunction with other government and donor programmes and infrastructure investments associated with adaptation. The model plan and potential financing mechanisms for local adaptation in Prey Veng province therefore require further elaboration but has the potential to enhance government commitment to climate change adaptation.

In Lao PDR, the project has provided useful information on the opportunities and constraints to adaptation options such as flood-tolerant rice, soil amendment to enhance productivity and irrigation solutions for rice farming. But the modest impact of the project has been mostly on national and district team awareness-raising about adaptation, the need to mainstream with district development plans, and the introduction of new flood-tolerant rice varieties which have yet to take hold in the district (although others may argue this point). The project successfully shared the adaptation approach and measures with IRAS³⁵ and ADB project staff but unfortunately there were no field data or trails to showcase. The experience provided to the CCAI national and district project teams, and exchanges with other adaptation programmes has nevertheless contributed toward learning and knowledge development that will assist CCAI activities in the future.

The Deputy Director General of Department of Disaster Management and Climate Change and others suggested various elements for the 2nd batch project (also will be at the same location) adaptation mainstreaming focused on the village level outputs, including changing the types of crops (which require

³⁵Improving the Resilience of the Agriculture Sector in Lao PDR to Climate Change Impacts Project

less water but provide high yield and revenue), rattan for handicraft, mulberry for silk and grass for cattle since the site may not be suitable to grow rice, an early warning system for communities at risk along the Xe Champhone River, and stabilisation of the river bank (using plants/bamboo) as well as reservoirs to reduce flooding/for multipurpose use. These ideas need to be considered within a future adaptation plan for the flood zone of Xe Champhone River.

In Thailand, the project has demonstrated a distinct approach for local action. Impact has been based on community mobilisation, use of affordable automated weather data collection in combination with the (FAO) CropWater software, implementation partnerships and use of local 'adaptation champions' and creation of a 'community learning centre'. The impacts are primarily at the local rather than policy or mainstreaming level. The field evaluation indicated that best practices have been introduced and illustrated but not yet fully demonstrated and disseminated. In addition, while important information needs have been targeted and addressed in a very promising method, the end-user applications of this technology for better farming decisions and the "early warning" functions need to be more closely linked to the information and extension advice that is provided directly to farmers³⁶. The use of the information system and CropWat water management

guidance needs to be further integrated with regular extension services and protocols, and measurable effects on household resilience need to be further demonstrated. The MoU that was established between the local partners provides an example for other areas in developing collaboration and cooperation in adaptation programmes. The final meeting of stakeholders also generated a list of eight action items for follow-up, including environmental education, climate information packages for governments, the role and functions of local governments in promoting climate resilient farming, etc³⁷.

In Viet Nam, the timeliness of the CCAI technical studies appears to have had a significant impact on the concept of provincial and commune level mainstreaming of adaptation measures into development programmes and the National Target Programme. Some methods and techniques of the project have been replicated in an IUCN project in the neighbouring commune Binh An and in other projects involving the CCAI project implementing partners. The project may serve as an important role model for other provinces although some refinements of the process are clearly required based on this experience, including more specific, concrete actions that local communities can initiate on their own.

³⁶See for example, various GEF/LDCF projects that focus on innovative forecasting products and delivery mechanisms that serve particular farmer needs and climate risk situations: Strengthening Climate Information and Early Warning Systems to Support Climate-Resilient Development in Cambodia, The Gambia's climate change Early Warning Systems, and Coping with Drought and Climate Change Projects in five African countries (e.g., Tailoring seasonal climate forecasts for climate risk management in rainfed farming systems of southeast Zimbabwe)

³⁷ MRC. (2012c). Report on regional exchange and learning workshop CCAI demonstration projects, Luang Prabang.

LESSONS LEARNT

4.1 Comments from participants

A short questionnaire was distributed to the national project team members. The responses related to lessons learnt and additional support from the regional team are presented verbatim below along with comments on lessons from the final reports.

Cambodia

The key themes from reports related to the need to (i) ensure greater local participation in adaptation design and implementation, and (ii) exchange experience and learning from project to other project in country and out of country. Questionnaire responses noted:

Design:

- Lack of full participation from key relevant agencies from both national and provincial levels.
- No scoping mission to directly visit the target province to gather key information about the project (e.g. vulnerable district or village) from local authorities
- No clear project implementation plan and logical framework;
- No concrete target beneficiary to local community in four districts

Implementation:

- Lack of capacity of staff
- Understaffed

- Involve university and provincial staff in the research
- Both men and women involve in the research
- Sharing knowledge to national and local government (capacity building)

Further support needed:

- Close involvement of CCAI team
- Take consideration of lesson learnt and recommendation from this 1st batch project and CCAI team at the NMC and MRCS give recommendation to national project team for 2nd batch
- Regarding the scoping mission, CCAI should go with National Team.
- Technical assistance

Lao PDR

The key lessons include the need to address (i) lack of knowledge and information on local climate change impacts, (ii) lack of skill and experience for project implementation, and (iii) creation of a 'farmer's adaptation learning group'³⁸. Questionnaire responses noted:

- A gap for coordination and cooperation for all levels are there for improvement
- Bottom up approach is very important for project design/planning
- Data and data processing is poor in the provincial and district level

³⁸ Senghammy & Khoumphon. (2013). Final report of local demonstration project in Lao PDR.

Further support needed:

- Need much more on the job training
- Improve hardware and software for CCA
- More data and tools for the adaptation activities are needed
- Flood risk map to help decision making level to take action is needed
- Study and initiate best model for local level adaptation planning and implementation that can be replicated elsewhere.
- Mainstreaming adaptation planning to district socioeconomic development plan

Thailand

The project reports identified some problems and lessons from the project experience³⁹:

- Insufficient knowledge and experience on CCA
- CCA policy and plan – rarely found in provincial and local government portfolios
- CCA local practices - The farmers, who are limited to growing rice, are the most vulnerable groups to climate change impact while the integrated farming practitioners face fewer risks.
- CCA knowledge and information sharing centre - Very limited climate information available for use at provincial and local levels.
- Mainstreaming CCA into provincial and local policy and planning framework - The process to integrate CCA into the three-year and annual

provincial and local governments' policy and planning process is a challenge.

The evaluation mission in November 2013 also highlighted some additional lessons:

- Continual rotation of project team members causes discontinuity in the project implementation;
- The knowledge should be presented in the project site and knowledge exchange should be continuously carried out;
- Some activities are difficult to get implemented because of the lack of relevant policy directives;
- The project team, located many hours from the project site, had intermittent visits and the need for a local coordinator was apparent to maintain information and communication;
- Coordination problems were encountered due to communication difficulties within the project and between the project team and MRC;
- The CCAI funding is insufficient and co-funding from partners is necessary to fully deliver the project.

Viet Nam

The key lessons included the need for:

- increased and sustained technical capacity at national and provincial level
- community action plans to be more concrete and feasible to implement;
- designated staff should be appointed within the local government

³⁹ MRC. (2011c). Second meeting of MRC CCAI Steering Committee: Agenda item 4.

- structure;
- increased awareness-raising at the community level is needed; and
- risk management methods to address uncertainty challenges should be part of the adaptation planning.

4.2 Project lessons

Lesson # 1: *Technical assessment of adaptation viability and sustainability in the local context is essential. Replication and scaling-up depend upon proven, fully viable technologies and practices.*

There were some examples of inadequate assessment and technical guidance in selecting and implementing some of the adaptation measures. The adoption of climate change adaptation measures by farmers and households is related to the evidence of effectiveness and financial viability, the accessibility of the technologies and the perceptions of risk associated with the use of the technologies. Measures worthy of demonstration need to be customised to local conditions and circumstances and beneficiary needs. In some cases, adaptation measures to address flooding and drought also need to consider the larger scale and upstream water management issues that affect local vulnerabilities.

Lesson # 2: *The climate change adaptation mainstreaming process (integration into development plans and budgets) needs to be better defined at the provincial and district levels and more participatory in order to have an impact on reducing climate change vulnerability.*

Mainstreaming adaptation is a central focus of CCAI. Further development and validation of the multi-agency processes and approaches for decentralised adaptation are needed before upscaling to other provinces. Some of the stakeholders are uncertain about how to mainstream adaptation into development⁴⁰. The small-scale CCAI activities could be used strategically to leverage or mainstream adaptation into sub-basin planning and management.

Lesson #3: *Community commitment to and ownership of a project requires an early focus on community organisation and mobilisation through a bottom-up community-based approach.*

The projects have generally emphasised public works and services with less focus on direct community organisation and self-initiative to address the recognized climate vulnerabilities and hardships. The demonstrations could better focus on mobilisation and organisation of communities for adaptation action rather than simply the construction (or co-financing) of small scale infrastructure. Community groups, leaders and coordinators need to be actively engaged and responsible for project implementation from the outset, with appropriate technical support as needed. Community learning centres need to have a sustainable means of local support. More contributions in-kind by the beneficiaries are also essential for local ownership and sustainability.

⁴⁰ For example, CNMC. (2010). Proposal for Climate Change and Adaptation Initiative demonstration site project in Cambodia: Climate change adaptation planning for implementation in the four districts in Prey Veng Province.

Lesson #4: *Short-term orientation and exposure to adaptation measures may not be sufficient for capacity development and widespread adoption of new climate-smart practices.*

Capacity development for climate change adaptation requires more substantive and longer term support for policy, institutional and human resources development than can be provided through short training courses or study visits. The modification of agricultural practices toward more flood and drought tolerant methods and diversified crops faces cultural, technical and financial barriers that take considerable time and effort to overcome. Site visits by participants to a few of the farms of the 'climate champions' in the Thailand project cannot be expected to generate substantive results. Training and other capacity development should be narrowly focused on realistic objectives and well-defined needs aimed at overcoming specific adaptation barriers. Farmers and practical extension services to farmers need to be at the centre of the capacity development efforts.

Lesson #5: *Project design and monitoring and an effective management structure can influence the quality and measurement of results.*

The clarity of expected end results (outcomes), a well-planned implementation strategy and work plan, and an active and responsive management, monitoring and reporting system are important for effective project implementation. Small-budget projects have a tendency to be neglected within the larger national climate change programmes and need to be carefully focused and organised for measurable results in a time-bound process. A results-based approach can assist in providing such focus.

Despite the useful outputs that have been produced, implementation would have benefited from specific project plans, well-defined implementation procedures, feasible indicators of results and a more structured monitoring and reporting process. For example, in the Cambodia project, despite good intentions, it is not evident that the one-time workshop to "improve capacity to national project team of the monitoring framework for assessing and reporting on the status of adaptation by implementing partners of national experts in Prey Veng province" had any effect on the quality of the project reporting. The process and format for measuring results and extracting lessons learnt (knowledge management) from CCAI projects has been informal and qualitative. In addition, better lines of communication were needed within the project teams and between the teams and the beneficiary communities.

4.3 Implications for future projects

The general implications of the lessons learnt from the 1st batch of local demonstration projects can be summarised as:

- a) More technical quality assurance in the adaptation measures being demonstrated and their effectiveness in improving adaptation practices by government officials and community members.
- b) Increased participation of and communication with the project stakeholders and community beneficiaries, including greater exchange of experiences.

- c) Enhanced capacity development and mentoring support for the national, provincial and district project teams for more effective and efficient project implementation.
- d) Better roadmaps and defined procedures for integrating local adaptation measures into development plans and budgets based on 1st batch experiences (how to move from theoretical to practical action within the available budgets).
- e) More rigorous project design, monitoring of progress and reporting on performance.



CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Awareness and capacity development

The CCAI demonstration projects that were evaluated have clearly raised awareness of climate change adaptation opportunities and constraints in the project areas. They have provided various sub-national adaptation strategies and measures and for ongoing integration ('mainstreaming') of such measures into the formal development plans and processes. Regional exchanges have enhanced general knowledge about adaptation, alternative livelihoods, etc. Best practices have not yet emerged to guide similar adaptation planning elsewhere but this 1st batch of projects will assist in the development of lessons and guidelines for expansion of provincial, district and local adaptation plans in other areas of the LMB.

Adaptation planning experience

Initial sub-national frameworks for adaptation have been developed at a provincial and in some cases district or local level. These included application of climate models and vulnerability and adaptation assessments, and development of provincial/district action plans (Viet Nam), a strategic provincial planning initiative (Cambodia), listing of district priority adaptation measures (Lao PDR) and local model farmers (Thailand). The level of analysis and rigor varied between the projects, and their effectiveness in achieving actual climate change adaptation in each of the countries remains to be seen. The link between sub-national adaptation planning

and community readiness and capacity for local implementation is not always evident. The district/local adaptation plan is just the start. Community mobilisation and capacity are needed to adopt and implement the plans. Bridging the gap between theoretical strategies and practical, viable measures is a key challenge.

Adaptation mainstreaming

Mainstreaming adaptation into development plans/budgets is most advanced in Viet Nam where the Kien Giang Provincial Action Plan has been approved and commenced implementation. The processes for implementation of provincial and local strategies in Cambodia, Lao PDR and Thailand are under development. Established procedures, committed partners and availability of funding are major factors in the mainstreaming processes. More reliance on self-help measures (less dependence on government budgets) and financially viable measure (business case for investment in adaptation) may need to be given greater prominence, along with an emphasis on sustainability.

Site demonstrations

The main focus of the projects has been on sub-national adaptation planning and capacity development, along with site demonstrations of selected adaptation measures in Cambodia and Lao PDR. The demonstration activities have introduced some important adaptation methods and ideas on alternative livelihoods but have not fully delivered the expected level of

site results due to the delayed commencement, the lack of sufficient technical expertise and the extensive flooding events in 2011. The site demonstration of adaptation methods generally lacked the necessary technical rigor to produce sustainable models for replication. Special recognition of vulnerable households was not always apparent. Further targeted technical support would improve the results from these site activities.

Replication examples

Demonstration adaptation measures at the selected sites intended to represent best practices will need to ensure that they can serve as model sites. It would have been far better had the fencing and vegetative cover been more complete around the community pond at Prey Kandeang village in Cambodia, the irrigation system management arrangements and test plots for flood-tolerant rice in Champhone District, Lao PDR, evidence of climate resilience performance of the 'climate champions' in Thailand, and the full documentation of the vulnerability and adaptation assessment at Kien Giang province in Viet Nam. These gaps currently limit the demonstration and replication value of the projects.

Scale of adaptation response

The hydrological dimensions of the climate risks affect the suitability of adaptation measures to address the circumstances of a particular site. The small project budget and the focus on site agronomic interventions may have constrained the recognition of larger scale flood risk imposed by hydrological processes upstream. The technical analysis needs to identify these larger scale risks and context for local action. For example, the use of flood-tolerant rice

varieties in Lao PDR, while effective for some flood-prone areas, was not sufficient for most of the flood zones to withstand flooding levels in 2011. Other measures may be needed for high risk flood zones such as the one occurring in Champhone District of Savannakhet Province. A more comprehensive strategy for adaptation within a defined flood zone may be required in certain circumstances. Flood warning systems also seem to be important but are not addressed as part of the model practices being demonstrated at the project sites.

Strategic contributions to adaptation

The 1st batch of CCAI projects are small, selective efforts within a larger set of climate change adaptation interventions and programmes in the MRC Member Countries. The projects have initiated processes for local action on climate change. But the sub-national adaptation planning/financing approach that is being developed under CCAI in a largely experimental manner will need further refinement and validation. This could include coordination with MRC sub-basin planning and flood forecasting and management, and with national sector approaches to adaptation that may relate to CCAI activities. The value-added, small-scale contribution of CCAI should ideally be strategically positioned to leverage larger scale results wherever possible in the context of national climate strategies and Mekong River management programmes.

Quality of project design

The demonstration projects did not follow a logic model approach in their designs. The outcomes and outputs were not well defined and had no particular indicators for assessing achievement. The outcome statements often

contained a mixture of activities, process and outputs and little recognition of a results chain. This can create confusion about the measurable results that projects are striving for and the means of verifying achievement of these expected results. Although the projects were small, some further guidance and effort at project design and monitoring would have been worthwhile (see Annex 6). This would also facilitate progress reporting and tracking of project contributions towards the overall CCAI programme objectives.

Project implementation and monitoring

The demonstration projects lacked both a project management plan and a structured monitoring system. Those in Cambodia and Lao PDR were planned for a one-year implementation but actually required almost three years. Start-up delays were apparent perhaps due to the limited orientation to climate change, the newness of CCAI and dependence on government agencies interest and availability of expertise. The lack of a rigorous project design, management and monitoring process also likely contributed to uncertainties in project delivery. Unlike many larger projects, there was no regular and systematic monitoring and reporting process to track achievement of milestones except through progress reports for payments and briefs to the management committees. The reporting provided a general description of activities completed. Since several of the technical components were contracted to separate implementation partners, the overall approach for sub-national adaptation within CCAI has yet to be fully defined and communicated.

Regional team and management support functions

MRCs staff have an important coordination, communication and reporting function. But their role in providing quality assurance and in backstopping the project management is less well defined. The management structures were generally unable to respond to many of the implementation and delay issues, and national teams noted their limitations in project implementation. A more pro-active approach could enhance the project performance.

5.2 Recommendations

1. **In Cambodia**, the community pond at Prey Kandeang should be completed through additional technical, community and financial support by government or development partners for a) stabilisation and agriculture along the banks of the pond, b) water quality monitoring and analysis, c) access control measures (social, biological, physical fencing), and d) community organisation strengthening to ensure effective operation and maintenance of the pond. Agro-forestry and horticulture can be promoted provided that it does not interfere with the primary objectives of domestic water supply. Technical expertise is clearly needed.
2. **In Lao PDR**, the irrigation scheme at Champhone District should be provided additional technical and financial support by government or development partners to develop and implement a management and financial plan for the irrigation system, including promotion of higher value

irrigated crops that can support maintenance and upgrading of the facilities.

3. **In Thailand**, the telemetry climate information system, installed at four sites, needs to be further integrated with the software applications for extension advice on cropping and water management, and the early warning functions and government extension services that provide direct decision support to farmers. This would provide stronger evidence of on-the-ground results for further development of this interesting piloted system.
4. **In Viet Nam**, the engineering design criteria and construction details for coastal protection measures for Binh Giang commune should be further developed to facilitate site implementation.
5. **In Cambodia** and **Lao PDR**, the recommended strategic adaptation measures specified in the project final reports should be integrated into the provincial and district development plans and programmes. Provincial line agencies' staff should be part of the implementation teams.
6. On the basis of the CCAI project experiences, each country should consolidate the lessons learnt and recommend an adaptation planning and investment model or best practice as a basis for future scaling-up and replication in other provinces. This should provide for an effective balance between technical assessment of climate impacts, local survey of vulnerabilities and vulnerable groups, and community-based action plans to address the key priorities for adaptation.
7. Capacity development – in the form of training, study tours, regional exchanges, institutional support, etc., should be designed to be much more results-oriented, including assessment of participant needs, tailoring of the activities to address specific gaps or objectives, formal training plans, and follow-up evaluation of capacity development results.
8. Further refinement of the CCAI strategy should be considered, to sharpen the focus on strategic results, enhance the links with other flood/water management programmes and use CCAI and related MRC support activities to leverage impacts on climate change adaptation. The general approach that has evolved in the 1st batch projects includes major components (as presented in Chapter 2) that can be further considered in terms of the strategic gaps that should be addressed in the next round of projects.
9. A more rigorous results-based procedure or checklist should be established for the design and management plans of CCAI local demonstration projects, including monitoring and progress reporting standards in support of the country based management as a decentralised activity.

10. The management structures for CCAI local demonstration projects should include greater stakeholder participation, effective project steering committees, and specified responsibilities for project implementation staff. Greater attention should be given to coordination and communication, including a) clearly-defined roles and responsibilities b) project schedules and milestones that are reviewed quarterly, c) management structures that are functional (meet regularly, review progress, provide guidance on solving bottlenecks, keep meeting notes, specify follow-up actions) and d) designated staff for specific project duties.
11. CCAI regional team at MRCS and national teams should be given a clearer mandate for quality assurance in project delivery, tracking project progress and risks, and quarterly reporting functions in the implementation of CCAI local demonstration project management plans and monitoring systems.



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ANNEX 1 | INTERVIEW GUIDE & KEY INTERVIEW QUESTIONS

I. Written Questions for Project Teams

The questions below are intended to understand the overall project content and key lessons. The questions will be sent to the project team (via the National CCAI Coordinator) before the evaluation starts for initial self-assessment of the project team:

1. For the project overall, to what extent have the planned activities and outputs been completed (in estimated percentage)? If some were not completed, please explain why.
2. Was the project aligned with or integrated with any national or local (province/district/commune) plans? Please indicate how the project was linked with the country/local priorities and plans.
3. What would you say were the main achievements of this project?
4. Was there a specific approach to ensure broad participation (e.g. women, the elderly, children, marginalized group, and NGOs) in the project design/implementation? If yes, what was it? Please describe.
5. Were there any delays in project implementation and if so, what were the reasons for the delays?
6. What are the main lessons learnt for design and implementation of this project?
7. What more can the regional team (CCAI/MRCS) do to support the formulation and implementation of the next batch's projects?

II. CCAI Demonstration Projects Evaluation Criteria & Questions for project teams and local stakeholders

CCAI Demonstration Projects Evaluation Criteria:

1. Relevance
2. Effectiveness
3. Efficiency
4. Sustainability
5. Impact

1. *Relevance:* *To what extent were the projects in line with country/CCAI priorities and stakeholder needs?*

Example of questions:

- How important was the project to stakeholder needs?
- Was there anything that was NOT directly relevant for climate change adaptation?
- How could the project been made more relevant for the country or beneficiaries?
- How could beneficiary involvement been improved?

2. *Effectiveness:* *To what extent did the projects achieve their expected results?*

Example of questions:

- What were the most important achievements?
- Were there any specific problems in implementation?

- Was any planned output not achieved?
- What were the key lessons learnt for future projects?
- Were there any unexpected results (positive or negative)?

3. **Efficiency:** *Was the project implemented on time and on budget as planned?*

Example of questions:

- Were funds, staff-skills and staff-numbers appropriate to produce the expected outputs?
- Was there adequate management support for the project implementation?
- Were there any particular organisation or management constraints to project delivery?
- How were they solved or how could they have been solved?

4. **Sustainability:** *To what extent will the project results be maintained?*

Example of questions:

- What activities have been or will be continued after completion of the project?
- What has not or will not be continued? Why not?
- What could be done to assist sustainability?

5. **Impact:** *What are the project effects on longer term climate change adaptation capacity?*

Example of questions:

- What has changed before and after the project implementation? (e.g.,

incomes, crop yields, food security, awareness, skills, community strength, gender equality)

- Has the project had any long-term effect on climate change adaptation on the ground?
- Can you give specific examples of how the project has reduced vulnerability to climate change?

III. Interview Questions for Site Beneficiaries

1. How were you involved in the project design/implementation?
2. What are the main achievements/benefits from this project? (e.g., income, food security, livelihoods, new knowledge/skills, technology)
3. Are the benefits/achievements mentioned in question No. 2 continued after the project ended? If yes, how? If no, why not?
4. What is the usefulness of this project for your community/organisation? Are you satisfied with the results? Why or why not?
5. Did you receive any training or technical support or study visit from this project? If so, how do you apply the knowledge gained from those trainings/technical supports? Has it had any effect on you compared to before the project?
6. Has the project had any effects that you know of outside of this village or area? Have any aspects been copied elsewhere?
7. If there was a similar project to this one, should anything be done differently?

ANNEX 2 | CCAI LOCAL DEMONSTRATION PROJECT OUTPUT & ACTIVITY COMPLETION

Project Outcomes and Products	Location and timing of the project activities	Who were the primary beneficiaries	No. persons involved (M/F)	Role of men/ women in project implementation	Describe how the products have been used to assist climate change adaptation
CAMBODIA					
Outcome 1. Identifying key problems, baseline compilation in supporting methods and tools for climate change adaptation assessment					
Identifying key problem, baseline and compilation in supporting methods and tools for climate change adaptation assessment	Prey Veng province, November 2012	NPT and Local Stakeholders	7 (Male)	7 NPTs, sub-national stakeholders	Support to prepare documents and implement CCAI project CC Adaptation and methods & tools
Outcome 2. Impact of climate change, and vulnerability and adaptation assessment, and adaptation planning practices for Prey Veng province focusing on the four targeted districts					
a. Households and Genders Survey Vulnerability and Adaptation Assessment, Peam Ro, PeamChor, Preah Sdach and Me Sang Districts and Me Sang Districts, Prey Veng Province, Cambodia, Feb. 2012	Peam Ro, Peam Chor, Preah Sdach and Me Sang Districts Nov. 2011 survey	Local stakeholders	9 (M=5 F=4)	32 gender interview surveys completed	172 HHs surveyed in 10 communes and 32 villages
b. The Impact of Climate Change, and Vulnerability and Adaptation Assessment on Agriculture Sector, Rice Production in Prey Veng Province	Prey Veng province (2012)	National and sub-national stakeholders	7 (Male)	9 (Male) - 7 from project team - 2 from external supporters	- Assist to assess the impact of CC on Rice production in PV - Assist to adaptation plan initiative of PV

Project Outcomes and Products	Location and timing of the project activities	Who were the primary beneficiaries	No. persons involved (M/F)	Role of men/ women in project implementation	Describe how the products have been used to assist climate change adaptation
c. Climate Change Adaptation Planning initiative is to integrate adaptation planning into their provincial investment plan and department's programmes, projects.	Prey Veng province (2013)	National and sub-national stakeholders	7 (Male)	8 (Male) - 7 from project team - 1 from external supporter	Adaptation plan initiative of PV will support at all stakeholders at sub-national level and could integrate into sub-national plan for implementation
d. Practice demonstration site project to rehabilitate existing community pond in order to provide sufficient water for households	Prey Kandeang village (2013)	Local communities 195 beneficiaries	Over 70 percent is female	Participation and maintenance of pond restoration of belonging to local community	To meet urgent need of local community of water consumption

Outcome 3. Improved capacity building and awareness raising to adapt to climate change for all stakeholders at different level in PreyVeng Province in use of methods and tools for different adaptation planning

a. Stakeholder engagement and capacity building plan (see above survey report)	Nov 2012	National and sub-national stakeholders			NPT and Stakeholders capacity improvement
b. Training workshop Proceeding	19-20 October 2011, Prey Veng province	29 participants from provincial departments, districts level and stakeholders	29 (M=27 and F=2)	Participation training workshop	Provincial capacity strengthened in policy making and planning for adaptation to climate change at different levels

Project Outcomes and Products	Location and timing of the project activities	Who were the primary beneficiaries	No. persons involved (M/F)	Role of men/women in project implementation	Describe how the products have been used to assist climate change adaptation
c. Training workshop Proceeding	26-27 March 2012, Prey Veng province	25 participants from CCAI project team, provincial departments, districts level and stakeholders	25 (M=24 and F=1)	Gender Participation training workshop	Capacity Building to monitoring and reporting progress, and lesson learn on climate change adaptation planning in Prey Veng province
d. Final Workshop Proceeding	25-26 March 2013, Prey Veng province.	45 participants from the CCAI project team, relevant institutions, provincial departments, district level and stakeholders	45 (M=40 and F=5)	Gender Participation training workshop and knowledge CC dissemination	CCAI Demonstration Project on Disseminating and sharing the results and lessons learnt of CCAI demonstration project with local, provincial and national stakeholders, and enhancing awareness of climate change adaptation for provincial key stakeholders and local communities in Prey Veng province
e. Exchange Field Visit to Building Capacity of Institutions to Help Farmers Better Adapt to Climate Variability and Change in Cambodia Project, Prey Veng Province"	Ba Phnom District, Kamchay Mear District and Pear Reang District, 23-25 December 2012	NPT	11 (M=11 F=0)		Exchange field visit among the CCAI NPT

Project Outcomes and Products	Location and timing of the project activities	Who were the primary beneficiaries	No. persons involved (M/F)	Role of men/ women in project implementation	Describe how the products have been used to assist climate change adaptation
LAO PDR					
Outcome 1. Supporting and building capacity for local authority and local community in climate change mainstreaming, planning and adaptation process.					
a. Field survey on climate change impact, risk and vulnerability groups affected by flooding in wet season and drought in dry season	Kengkok Neua, Nakathang and Taleow villages, Feb. 2010		33	Gender balance between women and men in field interviews	98 HH/345 ha affected by flooding in Taleow; 130 HH/50 ha affected by both flooding and drought in Nakathang; 175 HH/118 ha affected by flooding, and 115 HH/76 ha by drought in Kengkok Neua
b. Gender equity: national team was established with a team leader and local coordinator is female. Women are involved in all activities implementation from the first field data collection, attended workshop/meeting.					

Project Outcomes and Products	Location and timing of the project activities	Who were the primary beneficiaries	No. persons involved (M/F)	Role of men/ women in project implementation	Describe how the products have been used to assist climate change adaptation
c. Training workshop on Climate Change Risk Assessment, Modeling and Data Input for National Officers	16-20 August 2010 at Vangvieng district	Project team (national, provincial and district officers)	17	Women 50%	practice/exercise to identified vulnerability, risk sectors to climate change impacts, and modeling and data input by case study at pilot site project of Champhone district
d. Agriculture Training Course to Strengthen Resilience to Climate Change for Local Villagers at the Demonstration Site	Nov. 24-27, 2010, Champhone District	Farmers from target villages (Kangkoknue, Nakathang and Taleo)	64	30% of participants were women	strengthen resilience to climate change for farmers in term of knowledge on agriculture for planting high quality of rice production, hybridize and frog breeding strengthen capacity building for project team and villagers to learnt innovative agricultural practices, exchange idea and experiences of climate change impacts and adaptation options
e. Field study for local staff and local villagers at the demonstration site of Thailand to learn invocative agriculture practices, exchange ideas and experiences of climate change adaptation.	18-22 April 2011	national, provincial, local and villagers	15	Half of the participants were women	

Project Outcomes and Products	Location and timing of the project activities	Who were the primary beneficiaries	No. persons involved (M/F)	Role of men/ women in project implementation	Describe how the products have been used to assist climate change adaptation
f. Training workshop on gender mainstreaming in climate change and adaptation initiative	19-20 May 2011	project team included national, provincial and local team	30	70% were women	to make understanding and knowledge of staff in national, provincial and local for gender mainstreaming in climate change and adaptation initiative include increase experience of coordinator in every level about gender integrates in decision and implementation activity at demonstration site project of Champhone district
g. Preparation of the adaptation action plan for the project sites (KengkokNeua, Nakathang and Taleow villages) of Champhone District	Oct. 2012	local authority (district governor) and villagers	161	half of persons involved were women	identified priority adaption activity in each village at community level in order to prepare action plan for short, meddle and long term adaptive planning to climate change impacts

Project Outcomes and Products	Location and timing of the project activities	Who were the primary beneficiaries	No. persons involved (M/F)	Role of men/ women in project implementation	Describe how the products have been used to assist climate change adaptation
Outcome 2. Arrangement, identification and implementation of adaptation activities at the demonstration site.					
a. Consultation workshop to define priority adaptation option	Oct. 2012	local authority (district governor) and villagers	161	half of persons involved were women	priority adaptation options is considered to insert into social economic development plan of Champhone district
b. Extension of the existing irrigation canal for about 1,000 metres to cover additional 76 Ha of rice field for dry season rice plantation and repairing an electric pump in a paddy area which has too much flooding.	Dec. 2010	65 families	35	30 % women were involved	extension of soil irrigation 1 Km long which is enough to irrigate 76 hectares of rice field in dry season at kangkoknue village
c. An analysis of soil characteristics was done by taking 10 samples of the soil in 18 Ha which has been frequently affected by flood.	Nov. 2010	Farmers			The result of soil quality is acidity and it is not suitable for crop plantation

Project Outcomes and Products	Location and timing of the project activities	Who were the primary beneficiaries	No. persons involved (M/F)	Role of men/ women in project implementation	Describe how the products have been used to assist climate change adaptation
d. Two new flood-tolerant rice varieties (TDK-Sub1 and IR64, both obtained from NAFRI) were planted in 1-Ha test field.	June 2010 at three villages of demonstration site project	farmers	5 families	women in families were involved	farmers were happy to test flood resistant rice and later on rice seeding was prepared by farmers and sharing to another families in the communities
Outcome 3. Stakeholder engagement and awareness raising on climate change impact and adaptation					
a. Awareness raising activities were carried out at demonstration site of Champhone district by T-shirt, poster and brochure distribution to local people in communities and local staff	June 2011	Local authority and villagers	100 participants from Kangkokneua village, 150 of Nakathang Village and 130 of Taleo	half of women were attended	presentation to provided the overview base knowledge on Climate Change and its impact, to played video on disaster occurred in the world and in country of Lao PDR, participants joined to play the game interaction and distributed T-shirts and poster from MRC
b. National team conducted an awareness raising event with interactive activities for the local demonstration site communities as well as district officials. In addition, the grassroots comic workshop was also conducted.	Dec 2011		about 200 people		

Project Outcomes and Products	Location and timing of the project activities	Who were the primary beneficiaries	No. persons involved (M/F)	Role of men/ women in project implementation	Describe how the products have been used to assist climate change adaptation
c. Brochure on the demonstration site project, outcome and output of activities, lesson learnt and challenges. Outreach materials (e.g. posters, brochures and TV programme) to promote CCAI demonstration activities	December 2013				
THAILAND					
Output 1.1: A database and climatic information system is developed to support the local climate change adaptation and decision making process	2011	Researchers; extension staff	No data	No data	Provides a prototype for local data collection and analysis for extension support
Output 2.1: Current community perception and experiences on climate risk and variability, and adaptation practice.	2011	Community leaders; local residents	No data	No data	Orientation of community leaders and farmers to adaptation opportunities
Output 2.2 Community Participatory action research (Tai Baan Research)	2011	university researchers	No data	No data	Local information and knowledge for design of adaptation strategies

Project Outcomes and Products	Location and timing of the project activities	Who were the primary beneficiaries	No. persons involved (M/F)	Role of men/ women in project implementation	Describe how the products have been used to assist climate change adaptation
Output 3.1: Awareness raising and lesson learnt on climate change and adaptation initiative in various stakeholders	2010/2011	Community leaders; local residents	No data	No data	Orientation of community leaders and farmers to adaptation opportunities
Output 3.2: Capacity building on climate change adaptation at local communities	2011/2013	Community leaders; local residents	No data	No data	Orientation of community leaders and farmers to adaptation opportunities
Output 4.1: A climate change adaptation policy brief and implementation strategy	2011	Government officials	No data	No data	Revisions to district policies based on project input
VIET NAM					
Outcome 1. Problem identification, baseline setting, application and compilation of supporting tools and techniques to support the assessment process					See summary of discussions in the text. No direct response to the table.

ANNEX 3 | CCAI EVALUATION WORKSHOP PARTICIPANTS' RESPONSES TO EVALUATION CRITERIA KEY QUESTIONS

Criteria	Lao PDR ⁴¹	Cambodia ⁴²	Thailand ⁴³	Viet Nam ⁴⁴
Relevance <i>To what extent were the projects in line with country/ CCAI priorities and stakeholder needs?</i>	<ul style="list-style-type: none"> Contribute to overall development goal of the country, e.g., improving living condition and poverty reduction in the country Contribute to the mainstreaming adaptation planning to local development plan Align with priority action plan of the national adaptation action plan, e.g., adaptation to the flood and drought 	<ul style="list-style-type: none"> More participation of beneficiaries would have made project more relevant Beneficiary involvement in project implementation stakeholder participation and project size Project is relevant for national and sub-national levels Participation from all stakeholders Provide water for domestic use, animal cropping, health improvement 	<ul style="list-style-type: none"> It's relevant to national issues (e.g. flood and drought) although there is no clear policy/plan on CCA in Thailand at national level. The community, district and province have become more aware on CC. This can be seen from the vulnerability assessment (e.g. during their presentations, stakeholder meetings) that the ideas on CCA were clearly presented. 	<ul style="list-style-type: none"> The project provided timely follow-up to the recent National Strategy for Climate Change; Kien Giang prov. sought to prepare a provincial plan The project provided key inputs for the preparation of Provincial Action Plan to Respond to Climate Change (the plan includes mitigation and adaptation strategies)
Lao: 22 responses				
Cambodia: 21 responses				
Viet Nam: 5 project team interviewees				

⁴¹ Translation from: Douangchanh Lopaying, Tatirose Vjijitpan, CCAI Programme Officers, Back to Office Report, Evaluation of Local Demonstration Site Project in Lao PDR, 23 - 27 July 2013, Savannakhet Province, Lao PDR

⁴² These responses are summarizing from written responses from both the provincial team and the some of the stakeholders at the district level, August 6-7, 2013

⁴³ These responses are based on discussions with the project team and project stakeholders on November 13 and 14, 2013 in Thailand

⁴⁴ The responses are based on summarizing verbal comment during a meeting with some of the project team in HCMC on August 9, 2013

Criteria	Lao PDR	Cambodia	Thailand	Viet Nam
	<ul style="list-style-type: none"> Contribute to the national strategy in the district level. e.g., awareness raising on the CC and adaptation planning in district level Align with district development plan (translating district development plan to implementation plan, seeking alternative option to adapt to flood and drought in the agricultural sector, e.g., testing rice tolerant to flood, and development of labour skill for community) Align with the provincial environmental action plan 2011-2105 	<ul style="list-style-type: none"> Introduce/educate other people; training and consultation on health issues Stakeholder/beneficiaries should be involved from the beginning/project design Meeting/training from starting point Extend the project to other areas Knowledge of climate impacts which are distinct from general impacts Use different adaptation measures Comprehensive participation from the onset and throughout – appropriate project formulation from the onset From the onset, clearly identify target beneficiary and comprehensively involve Stakeholders such as NGOs are out of target area Comprehensive involvement from beneficiaries in project formulation/implementation Build capacity of community 	<ul style="list-style-type: none"> This project is very important, especially at the sites, because it brings the knowledge about CC and CCA to local communities. People understand more on CC. Networking within the community was created to exchange experience and apply good practices (i.e. from the climate champions). Farmers have started to learn and share among them how to adapt to CC, esp. from the climate champions. 	<ul style="list-style-type: none"> High level of vulnerability in Kien Giang province; support from project was fundamental and timely in organizing the provincial action plan Project approach has provided a model that assisted in similar projects (e.g., ICCN and Rockefeller Foundation action plans for three cities in Viet Nam) (CCAI implementation partner was also involved in this project) Local household survey provided input for design of the adaptation options and strategy

Criteria	Lao PDR	Cambodia	Thailand	Viet Nam
	<ul style="list-style-type: none"> Align with NAPA Need more alignment to the national strategy and action plan on CCA (promulgated in 2013) 	<ul style="list-style-type: none"> Urge to plant more tree Identify target area that is most vulnerable Design a project with participation of beneficiary Improve access of local people to information Local people of the current project are very happy with pond rehabilitation Set up project team from target village to study the real need of local people Relevant provincial department have to set up climate change adaptation plan aligning with their ministries in order to implement at vulnerable areas Farmers and local people should be invited to adaptation planning Study the real needs of target local people 	<ul style="list-style-type: none"> The project has chosen the communities that could be a model for others on both drought and flood adaptation. The project helped to create a systematic thinking pattern, by integrating knowledge base from the Information and Knowledge Management Programme (IKMP), Environment Programme (EP), Basin Development Plan Programme (BDP) (other MRC programmes)/CCAI. It helped to establish collaboration between the project team, local authorities and stakeholders. Project helped to provide academic information for local activities to be more effective. 	<ul style="list-style-type: none"> Local people wanted to undertake follow-up activity; e.g. biogas, aquaculture, environmental clean up, etc. but no funding

Criteria	Lao PDR	Cambodia	Thailand	Viet Nam
<p>Effectiveness <i>To what extent did the projects achieve their expected results?</i></p> <p>Lao: 20 responses</p> <p>Cambodia: 17 responses</p> <p>Viet Nam: 5 project team interviewees</p>	<ul style="list-style-type: none"> Several estimation of the achievement compare to its planned outputs/outcomes(65,70,75,80,80,80,95,95,95,95,95,95,59,95,100%) Successful in testing tolerant rice and studied on the adaptation options (alternative livelihood and suitable crop for salty soil Awareness raising in CCA for the community An agricultural activity in Nakathang Village is not success Introducing flood tolerant rice training on CCA Good participation by relevant stakeholders Increase awareness on CCA to the district and village levels 	<ul style="list-style-type: none"> Many beneficiaries (195); need to share lessons to national/sub-national Completed impact assessments: extreme climate events; past and future climate change; impact of climate change on agricultural sector Adaptation Plan Initiative to scale up to other provinces Technical survey on V&A Assessment; capacity building and demonstration site Limited technical support Flood occurred during implementation, disrupting progress 	<ul style="list-style-type: none"> The achievement compared to its planned outputs/outcomes is more than 80%. Information and data analysis from this project have contriubuted essentially to initiation of the sustainable development activities of S a i n a n g c o m m u n i t y, such as organic farming, local genetic crops and water management. 	<ul style="list-style-type: none"> Only able to complete scoping and assessment, and planning at village level but no budget for further work even though the local village people were keen Key benefits: capacity building and awareness – for provincial line agency staff and similar group at district level, and commune level (3 workshops at commune level) H i g h l i g h t e d responsibilities at the commune level; experts provided advice Concept of climate change is new to Kien Giang; major challenge is capacity bldg

Criteria	Lao PDR	Cambodia	Thailand	Viet Nam
	<ul style="list-style-type: none"> All activities were implemented, people have basic knowledge on CCA, people understood on the implementation procedure People understand on the project formulation, planning and implantation Need warning system and broadcasting for public hearing Need to prepare a technical guidance on the flood tolerant rice plantation Community satisfied with the results Capacity enhanced in district level on the CCA Public awareness achieved 90% Lesson learnt achieved 60% Mainstreaming achieved 40% Capacity building achieved 50% 	<ul style="list-style-type: none"> Most important achievement – four main reports; pond restoration and learning by project staff and key stakeholders Technical staff constraint Knowledge on climate change Pond; sharing knowledge; project delayed at beginning due to flooded target area (canal) and lack of knowledge Involvement from stakeholders is very important to identify their need Technical/financial support is needed Flood in target area; people welcomed and supported move to pond option Building capacity of local stakeholders/authority in assessment of CC V&A and lessons learnt Key problem identified 	<ul style="list-style-type: none"> Local communities become aware of CC and keen to get involved in activities, e.g. in the participatory (T a i b a n) research with the academic working group [project team]. Local people have learnt about the local problems, gained more understanding, participated in the project, and can further apply/replicate the project results, e.g. organic farming. 	<ul style="list-style-type: none"> More technical support needed to use the climate models in conjunction with hydrological models Turnover of staff and capacity issues about model use; hand-over gap from technical experts to provincial DoNRE staff Compatibility of computer equipment problem between provincial and district level constrained model application Promoting changes in agricultural practices (e.g., rainfed paddy to shrimp aquaculture) is a long term process How to promote and implement alternative livelihood is an issue

Criteria	Lao PDR	Cambodia	Thailand	Viet Nam
		<ul style="list-style-type: none"> • Compilation of tools/ methods used in the project implementation • Progress reports completed • Study of impact of CC and V&A • Assessment in agriculture (rice production) • CC Adaptation Initiative • Lack of capacity and lack of staff • Local community and authorities keen to continue such projects • Several estimation of the achievement compare to its planned outputs/outcomes (85, 60, 80, 70, 80, 60, 60, 60, 100, 80) • Don't know • The implementation of project is not completed yet since there is not enough participation of local people and resources 	<ul style="list-style-type: none"> • Cheap and effective telemetering system has been created. Students and lecturers have improved their knowledge. • Learning course has been created for awareness raising and provide knowledge to young people/ students. • The project has discovered the 'climate champion' farmers, who have already adapted to CC. • Networking at sub-district, systematic water management, establishment of water management committee • It is difficult to change the attitude of local people from chemical farming to non-chemical farming. • Limited budget, compared with the planned activities/ outputs 	

Criteria	Lao PDR	Cambodia	Thailand	Viet Nam
Efficiency <i>Was the project implemented on time and on budget as planned?</i>	<ul style="list-style-type: none"> Actual implementation did not follow the plan Delay in implementation Short time was planned for the implementation Shortage of budget Good but random support of steering committee Capacity for team work and good/poor coordination 60% achieved Need more detail implementation plan Good coordination and cooperation by the district authority Plan and implementation arrangement were met 70% Limited capacity and resource for project implementation 	<ul style="list-style-type: none"> Funds, staff skills and staff numbers should be increased Yes, but sometimes need to coordinate/manage with National Team and local and also MRCS No Fund, staff, skills and staff numbers appropriate to produce expected outputs Limited funds, skills, staff representatives Not enough management support for project implementation Project output and activity against to budget delayed project implementation Fund is appropriate; lack of staff skill/number We have adequate management support 	<ul style="list-style-type: none"> Delay in payment process Delay in coordination between government agencies and discontinuity. Fulfilment of the roles on administration, support and implementers Clear and regular coordination needed. When problems arise, things must be cleared and solved in due time. The budget was insufficient, compared to all the activities listed in the proposal. Coordinators in Thailand (TNMCS) and MRCS should participate more, esp in the field, 	<ul style="list-style-type: none"> Detailed HH data (15 pg questionnaire) not fully compiled and analysed by the project due to time constraints Staff turnover and skills capacity limitations created some difficulties Project was completed as per schedule, well ahead of the other CCAI projects If the project was repeated they would place greater emphasis on vulnerable populations (women, children) and commune level initiatives Greater emphasis on concrete actions and quicker implementation is being pursued in a follow-up project in Binh Son province, which has follows the Binh Giang approach

Criteria	Lao PDR	Cambodia	Thailand	Viet Nam
	<ul style="list-style-type: none"> No baseline data/ poor assessment prior before project The project was implemented during the transition upgrading national institutional structure which causes project delay in implementation Efficient of implementation 90, 95% achieved Fund flow and approval procedures are complicated and take time Limited capacity in implementation of the activities Lack of specialized TA to support local team in the project analysis and reporting Delay in resources allocation for project implementation Need to improve project work plan and budget allocation system 	<ul style="list-style-type: none"> No particular or organisational management constraint It was delayed due to flood water Not delay Lack of budget for fence construction since some beneficiaries do not contribute money yet Don't know The implementation of project was delayed and Lack of team work spirit among the project team Lack of project information sharing with provincial line agencies The project provided many training and workshops with participation of provincial line agencies The project was implemented smoothly 	<ul style="list-style-type: none"> There should have been clear steps/ guideline provided (by MRCS) what to do in order to implement this project with common understanding of the whole project team. There should have been a coordinator working at the project site to implement the project smoothly and efficiently The project should be managed in a transparency manner 	

Criteria	Lao PDR	Cambodia	Thailand	Viet Nam
<p>Sustainability To what extent will the beneficial project results be maintained?</p> <p>Lao: 23 responses</p> <p>Cambodia: 18 responses</p> <p>Viet Nam: 5 project team interviewees</p>	<ul style="list-style-type: none"> The results of the project are maintained (replicable and up-scale able), i.e., flood tolerant rice, extension of irrigation to cover larger areas, plant for commercial purpose Capacity building for further technique of CCA Need more training for district and village team on climate change adaptation Need to rehabilitate and extend the irrigation to keep water in dry season and to cover further area Further facilitate on marketing for local product is needed to make more incentive on production 	<ul style="list-style-type: none"> Ideally the project should be extended Monitor the local community use of the pond Communicate with focal point at provincial, district, commune No; provide technical support for them such as maintenance/ education, meeting, etc. Activity will continue on the ground Depends on budget for implementation, if Adaptation Plan Initiative (drafted) Not yet clear so far; it is under consideration/ consultation After completion of the project should be continued in next demonstration project 	<p>Activities to be continued:</p> <ul style="list-style-type: none"> Telemetry system, which will not only be used to collect information for academic purposes, but also to develop and practice relevant skills for the students and professors Climate champions and MOU between SAOs and the sugar company Continue the 2nd batch project at the same site to produce clearer results of the project The activities to be continued will be those of the community, e.g. the MOU, organic farming, local genetic varieties, waste management and water management. 	<ul style="list-style-type: none"> Sustainability will depend upon additional funding Some aspect of sustainability can be seen in proposals for specific action on the district level adaptation plan Provincial climate change team has been provided capacity through this project Project helped to develop a model approach for other projects of the Southern Water Resources Planning Institute

Criteria	Lao PDR	Cambodia	Thailand	Viet Nam
	<ul style="list-style-type: none"> Alternative non-farm activities need to support for commercial purpose such as making desk wash liquid (lesson learnt from Thailand) Need to maintain the project outputs (tolerant rice and irrigation) by scale up and replicate to other villages Need to follow up lesson learnt from study visit Need more awareness raising on CCA to local community Plant bamboo to protect bank erosion in risk area Other agro-forestry need to introduce for flood tolerant, such as rattan plantation 	<ul style="list-style-type: none"> The product (Pond) of project can be sustain if there is a water use community in place Continue to maintain the pond and create community to take care of it Need more participation from local authorities and people Integrate project plan into development plan Both local authorities and people should manage project products in commune development plan Create water use community under local authorities and technical department Find more donors to continue certain project activities 	<p>Activities NOT to be continued:</p> <ul style="list-style-type: none"> Integration of the project results into policy agenda, since it needs more budget and the timing should be during the time when the government agencies preparing for their annual budget estimation Establish a CCA learning centre at the project site, where there is already project staff to operate Learning courses with participation from house-school-temple for exchange of knowledge between teachers and the communities The project results should be widely disseminated throughout the Young basin and beyond, by e.g. publications, presentations 	<ul style="list-style-type: none"> Project did not have enough funding and time to develop the design criteria for dykes, etc. that have been proposed in the Provincial Action Plan; this is proposed for the next phase of CCAI There is only a basic flood protection scheme for the province and the context for mainstreaming adaptation measures from the Action Plan is not well-defined, although the action plan is aligned with the National Climate Change Strategy

Criteria	Lao PDR	Cambodia	Thailand	Viet Nam
	<ul style="list-style-type: none"> • Need further dissemination of CCA information (strategy, action plan) • Support identifies priority activities in district and village levels • Institutional setting for CCA e.g., committee, etc. • Following the approach of 3 Builts strategy • Broadcast information on flood warning system • Further consultation on the turning impacts of flood to be opportunity • Need further mainstreaming CCA to local/national socioeconomic development plan • Adaptation strategy should not be given to only to local small HH farmers/producers but also to local commercial producers/entrepreneurs as they also are key stakeholders to the project in the near future if not now. • Involvement of private sector in the implementation of some project activities 			

Criteria	Lao PDR	Cambodia	Thailand	Viet Nam
<p>Impact <i>What are the project effects on longer term climate change adaptation capacity?</i></p> <p>Cambodia: 16 responses</p> <p>Viet Nam: 5 project team interviewees</p>	<ul style="list-style-type: none"> District staff and community gains knowledge on CCA which are useful for self-adaptation Increased awareness and behavior of local people to prepare themselves for adaptation District line offices know to initiate on preparing they action plan to adapt to the climate change Increased knowledge on the self-vulnerability assessment Contribute to increase CC smart thought to project team work Increase knowledge of alternative livelihood to cope with CC by looking off-farm activities 	<ul style="list-style-type: none"> Don't know; some welfare, utilization of water for domestics and animals Before and after the project implementation has changed and increased Awareness, knowledge, community strengthening on CCA, income, etc. Project designed and drafted adaptation plan initiative for short and long term response to climate change Irrigation system will have reduced vulnerability to climate change; e.g., early warning system and climate projection 	<ul style="list-style-type: none"> The project area has formulated its own CCA plan, as well as the sub-district water management plan. The water management plan in drought-affected areas, including water transfer from outside, hydropower for water pumping The plan/project initiated by the community for vulnerability reduction; the community understood and learnt how to help themselves, e.g. digging pond in their farm to use during dry season, practicing integrated farming system, planting various kinds of crops for own consumption, choosing the crops by considering the water availability 	<ul style="list-style-type: none"> Impact will be felt mostly through awareness building and demonstrating an approach to provincial and local level action planning Replication effects as noted above

Criteria	Lao PDR	Cambodia	Thailand	Viet Nam
	<ul style="list-style-type: none"> Contribute to the implementation of poverty reduction strategy Increase gender awareness, particularly in decision making 	<ul style="list-style-type: none"> Changes: community strength, more consideration on gender balance, crop yield?, income? People have more understanding on future climate change and with better awareness and support from provincial and national level; vulnerability will be reduced Local people have enough water consumption (domestic use) in spite of dry season Knowledge and skill related to climate change adaptation Adaptation measure Don't know due to no involvement in the project 	<ul style="list-style-type: none"> The awareness of the community has brought about water management, reproduction of rice varieties and agricultural chemical control. This project contributed to long-term effects in the project site, on e.g. organic farming, crop varieties, water management. The project site has attracted attention from other national/international organisations. 	

Criteria	Lao PDR	Cambodia	Thailand	Viet Nam
<p>Lessons learnt</p> <p>Lao: 18 responses</p>	<ul style="list-style-type: none"> • Increased capacity to mainstream CCA to agricultural sector • Community satisfies with the outputs of the project and attend to follow up the activities particularly flood tolerant rice • A knowledge of CCA of local people has increased to some instance • Some lessons learnt from the project that district need to replicate to other villages such as flood tolerant rice • Better than no any action to adapt to the CC • Gain some knowledge on the V&A assessment and identifying adaptation options 			

ANNEX 4 | EVALUATION ITINERARY & LIST OF CONTACTS

July 17 **Working session with CCAI team: Finalise the evaluation methodology and schedule**

July 22 **Working session on Evaluation of CCAI 1st Batch Local Demonstration Projects**

Attendees:

Nguyen Huong Thy Phan (MRCS)
 Tran Mai Kien (MRCS)
 Douangchanh Lopaying (MRCS)
 Tatirose Vjitpan (MRCS)
 Vanna Nuon (MRCS)
 Khampaseuth Cheutchingthao (MRCS)
 Bounyaseng Sengkhammy (Lao PDR)
 Xaysomphone Souvannavong (Lao PDR)
 Loeung Kesaro (Cambodia)
 Nguyen Huy Phuong (Viet Nam)

July 23-26 **Lao Site Visit**
24th July 2013 **List of participants of Kick-off Meeting on Evaluation of CCAI Demonstration Projects, Phonepaseuth Hotel, Savannakhet Province**

No.	Name and Surname	Position	Organisation
1	Mr. Kaisorn Thanthathep	Deputy Director General	Dept of Meteorology and Hydrology
2	Mr. Bouala Bounyadeth	Technical Staff	Champhone District
3	Mr. Phoutthasin Phothisat	Technical Staff	Champhone District
4	Mr. Chanthaviphone Inthavong	DDG	DMCC
5	Mr. Oukham Phoumpakone	Director of Faculty	Dept of Meteorology and Hydrology of Savannakhet
6	Mr. Phetsamone	Director	Agriculture
7	Mr. Khonesavanh Douangmala	Coordinator	Agriculture
8	Mr. Lamthoun Thepkongsy	Deputy Director General of Cabinet	Champhone District
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15	Mr. Virany Sengtianthr	Director of Remote Sensing Centre	CCAI Steering Committee/ NREI, MONRE
16	Ms. Philayvah Viravouth	National Assistant Coordinator for CCAI	LNMCs
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26	Mr. Alan Ferguson	MRC Consultant	Regional Consulting Ltd
27	Mr. Douangchanh Lopaying	PO	CCAI
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33	Mr. Anolad Phimvohan	Deputy Director	Dept of Education and Sport Savannakhet
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25th July 2013

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42	Mr. Keo		
43	Mr. Phonexay	Village Member	
44	Mr. Lamthoun Thepkongsy		Champhone District
45	Mrs. Keooudone		Champhone District
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57	Mrs. Hom		
58	Mrs. Sophaphone		
59	Mrs. Phetsamone		
60	Mr. Na		
61	Ms. Noy		
62	Ms. Lar		
63	Mr. Ki Lang		
64	Mr. Korviset		
65	Mr. Phetsomphone		
66	Mr. Samlan		
67	Mr. Lith		
68	Mr. Sisana		
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72	Mr. Douangchanh Lopaying	PO	CCAI
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August 5-8 Cambodia Site Visit

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4	Mr. Yin Savuth	Deputy Director	MoWRAM
5	Mr. Siv Touch	Deputy Director	MAFF
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7	Mr. Loung Kesaro	National Expert	CCAI, CNMC
8	Mr. Peou Vuthyrak	EP Coordinator	CNMC
9	Mr. Long Saravuth	Deputy Secretary General	MoWRAM
10	Mr. Keo Sanbath	Deputy Director	CNMC
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3	Mr. Heng Chanthoeun	Deputy Director	MoE
4	Mr. Yin Savuth	Deputy Director	MoWRAM
5	Mr. Siv Touch	Deputy Director	MAFF
6	Mr. Sok Khom	Coordinator	CNMC
7	Mr. Loung Kesaro	National Expert	CCAI, CNMC
8	Mr. Peou Vuthyrak	EP Coordinator	CNMC
9	Mr. Sok Bunheng	Translator	
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15	Mr. Um Sophany	Officer	Cabinet
16	Mr. Choem Thavy	Officer	CRC
17	Mr. Ouk Vanna	Deputy District	Mesang
18	Ms. Yim Uth	Deputy, PDA	PDWA
19	Ms. Noun Chuong	Chief Office, MoWA	PDA
20	Mr. Sow Kim Seng	Deputy District	Peamror
21	Mr. Seav Lengheng	Deputy Director	MoE
22	Mr. Reth Phearun	Officer	Cabinet
23	Mr. Bat Song	Community Member	
24	Mr. Gen Phea	Community Member	
25	Mr. Thoun Pheara	Community Member	
26	Mr. Heng Ching	Community Member	
27	Mr. Phoeut Lap	Community Member	
28	Mr. May Kim Sa	Village Chief	
29	Mr. Meas Thoeun	Community Member	
30	Mr. Soun Lon	Community Member	
31	Mr. Meach Meak	Deputy Director, LM	
32	Mr. Khun Sakhoeun	Deputy Director, PDWRAM	
33	Mr. Teng Sothea	Deputy Director, PDRD	
34	Mr. Ouk Sophal	Deputy District	Preaschach
35	Mr. Lam Chhem	Chief Commune	

No.	Names of Participants	Position	Organisation
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37	Mr. May Kim San	Village Chief	
38	Mr. Met Savet	Community Member	
39	Ms. Seang Moun	Community Member	
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42	Mr. Hul Chamroeun	Officer	PCDR
43	Mr. Phen Thary	Staff	Cabineth
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45	Ms. Va Sanet	Officer	Cabineth
46	Mr. Loong Saren	Chief Commune	
47	Mr. Ngep Kot	Community Member	

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6	Mr. Choeum Thary	CRC	
7	Mr. Hul Chamroeun	NCDM	
8	Mr. Som Chouy	Community Member	
9	Mr. Soung Lon	Community Member	
10	Mr. Ton Thean	Community Member	
11	Mr. Kol Siep	Community Member	
12	Ms. Chhan Ya	Community Member	
13	Mr. Him Vath	Community Member	
14	Mr. Kang Pal	Community Member	
15	Mr. Chet Lon	Community Member	
16	Mr. Em Ban	Community Member	
17	Ms. Phoeut Lap	Community Member	
18	Ms. Him Ven	Community Member	
19	Mr. Leng Bath	Community Member	
20	Ms. Ment Sameth	Community Member	
21	Ms. Sang Moun	Community Member	
22	Mr. May Kimsan	Community Member	
23	Mr. Prek Thorn	Community Member	
24	Mr. Ngep Kot	Community Member	
25	Mr. Bat Song	Community Member	

Thailand Evaluation of the 1st batch CCAI local demonstration project of Thailand, Young River Basin

List of Participants

13 November 2013

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| 4. | Dr. Atchara Booppapun | Young River Basin Working Group |
| 5. | Assist. Prof. Rachaphat Ratanavaraha | Young River Basin Working Group |
| 6. | Mr. Rattaphon Pitakthepsombat | Young River Basin Working Group |
| 7. | Mr. Singtong Plungpongpan | Young River Basin Working Group |
| 8. | Mr. Vithaya Chamnanphrai | Young River Basin Working Group |
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| 11. | Ms. Siripak Parson | Department of Water Resources Regional Office 4 |
| 12. | Ms. Tippawan Ounmuang | Department of Water Resources Regional Office 4 |
| 13. | Mr. Surajit Kaskaew | Department of Water Resources Regional Office 4 |
| 14. | Mr. Thanit Satiennam | Policy and Plan analyst, Professional Level
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| 16. | Ms. Atcharaporn Daisai | Assistant to National CCAI Coordinator
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| 1. | Mr. Prasit Wanset | Department of Water Resources Regional Office 4 |
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| 8. | Mr. Alan Ferguson | Consultant, CCAI, MRCS |
| 9. | Ms. Tipwimon Chumphukawin | JRP, CCAI, MRCS |

MORNING – local stakeholders

- | | | |
|-----|-------------------------|---|
| 1. | Mr. Bamrung Kayotha | Champion Household, former head of the Sainawang sub-district administration office |
| 2. | Mr. Amnaj Vilasri | Champion Household |
| 3. | Mr. Pirapat Anuwat | Roi-Et Provincial Office of Natural Resource and Environment |
| 4. | Mr. Prasit Varaphon | Kalasin Provincial Office of Natural Resources and Environment |
| 5. | Mr. Nikorn Pojomkaew | Kalasin Provincial Office of Natural Resources and Environment |
| 6. | Mr. Pranot Sertvicha | Chi river basin committee |
| 7. | Mr. Bandit Akkaraphacha | Young River Basin Committee |
| 8. | Mr. Issara Chaiyanunt | Mitr Pol Sugar Group |
| 9. | Mr. Somkiat Tavinteung | Sainawang sub-district Agricultural Extension Office |
| 10. | Mr. Somboon Nunpad | Nakoo District Agricultural Extension Office |
| 11. | Mr. Supol Raengkhai | Roi-et sub-river basin committee |

AFTERNOON – beneficiaries

- | | | |
|----|--------------------------|--------------------|
| 1. | Mr. Satit Kayotha | Champion Household |
| 2. | Mr. Bamrung Kayotha | Champion Household |
| 3. | Mr. Amnaj Vilasri | Champion Household |
| 4. | Ms. Kanuengnij Polkhayan | Champion Household |
| 5. | Mr. Was Kutrasaeng | Champion Household |
| 6. | Mr. Somchai Votasrom | Champion Household |
| 7. | Mr. Somsri Sirpayom | Champion Household |
| 8. | Ms. Wasana Homhuen | Champion Household |
| 9. | Mr. Somkourn Homhuen | Champion Household |



ANNEX 5 | SUGGESTED APPROACH TO RESULTS-BASED PROJECT DESIGN & MANAGEMENT WITHIN CCAI

Background

The CCAI demonstration projects should provide a simple logic model in the project design that links Activities, Outputs and Outcomes, and that recognizes and addresses key assumptions and risks. The project rationale should present a basic concept that defines:

- What end results (outcomes) will be achieved within the project scope (time, resources, budget) and the CCAI Results Framework?
- What activities and outputs are

specifically needed to produce these results?

- How will the expected results be achieved (project implementation strategy)?
- How will project achievements and performance be measured and by whom?

A 'results chain' is typically used in the project rationale to illustrate the key relationships within a project logic model. The results chain should be as simple and clear as possible to communicate the basic concept of the project. An example is shown below.

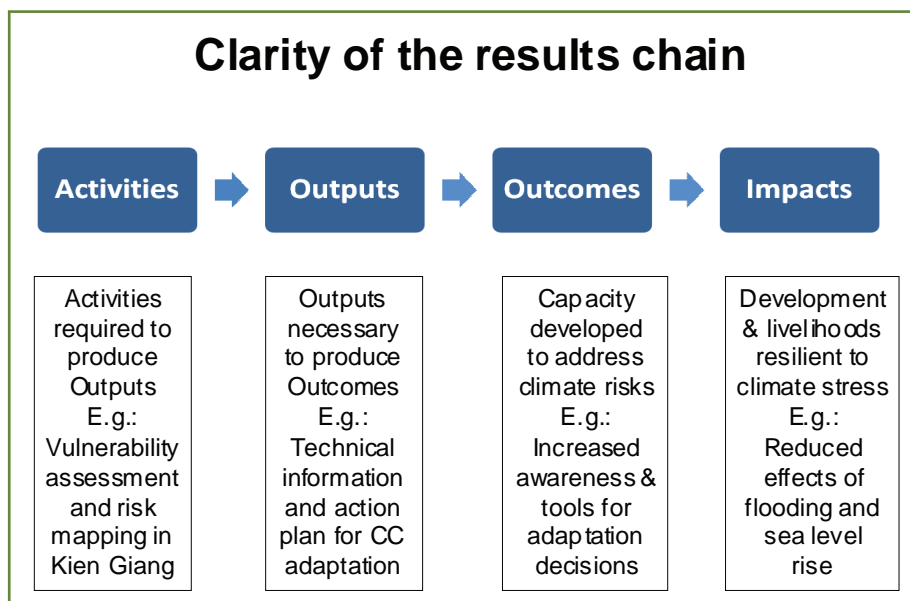


Figure 1. Project design for measurable results

Clarity and measurability of the expected results and the proposed strategy to overcome key barriers to climate change adaptation results are essential aspects of good project design. The arrows in the above diagram can also be read in the opposite direction. 'Impacts' are longer term outcomes that are anticipated sometime after project completion. 'Inputs' have not been included in this results chain diagram for simplicity.

Project design simplified

Every project contains a hypothetical theory of change based on the notion that undertaking certain activities will lead to changes in specific baseline conditions toward some desired end result. For project design purposes, we need to know what activities and outputs are necessary and sufficient to achieve the expected outcomes, and what assumptions or pre-conditions will affect our ability to reach this outcome. This requires careful thought about the linkages between the project objectives, the expected outcomes in terms of measurable results, the key outputs that need to be produced, and the array of internal or external factors that could facilitate and/or constrain project achievement.

A results-based approach to project design might follow this sequence:

- a) identify the specific outcomes (end results of a project) that are needed to achieve particular project objective(s);
- b) prepare outcome statements that clearly define the end results that can be realistically achieved within the timeframe and budget;

- c) determine how achievement of these outcomes will be measured and verified (indicators) and propose appropriate targets;
- d) determine the necessary outputs and the related activities that will best (and cost-effectively) produce these defined outcomes and meet the proposed targets;
- e) determine what factors (assumptions, pre-conditions, risks) will affect the likelihood of achieving these outcomes and what can be done to control or address these factors in the project design and implementation; and
- f) propose a project implementation strategy that outlines the particular operational approach or proposed means of delivering the planned activities, outputs and outcomes (general tactics and methods for project execution).

Prepare a concise results framework

Within the CCAI Objective and Outcomes Framework, the proposals should present a basic set of project design parameters that define the Outcomes and the Outputs and the related Activities that are required to achieve the specified end result.

Outcome: a medium or long term ('impact') effect or end result of a programme or project, generated by a series of outputs that are considered necessary and sufficient to produce such a result.

Output: short term products or services occurring directly as a result of programme or project activities, and over which programme or project personnel have direct control.

The framework should strive for simple, effective communication and explanation of the project concept and approach. An example of a Results Framework is presented in Table 2.

Select representative indicators of results

An indicator is a means of measuring the status of a project Outcome or Output relative to pre-project baseline conditions, ideally with SMART characteristics (“specific, measurable, achievable, realistic and time bound”). Indicators will need to measure progress against certain Baseline or starting conditions and movement toward specified Targets. The indicators need to be tested to ensure that they are accurate, practical and useable.

Identify key assumptions and risks

The critical factors that affect the achievement of the Outcomes and Outputs should be identified and discussed in the implementation strategy for the project. The risks of not being able to achieve the expected results should also be assessed and rated and appropriate measures to minimise or mitigate these risks should be proposed.

Establish a monitoring and reporting system

It is important to identify specific roles and responsibilities for measuring and reporting on progress using the proposed indicators and other guidance from project steering committees. The monitoring process includes reporting on work completed and inspection by CCAI staff.

What *not* to do (common errors)

- Present long, complicated statements of expected outcomes
- Confuse an activity (action to be completed) with an outcome (end result)
- Propose vague indicators that are too qualitative and create an opportunity for bias
- Select indicators that are difficult to implement due to lack of data or resources to collect data
- Assume that everyone will understand what the project is trying to achieve
- Avoid addressing the critical assumptions and risks because they are too difficult to identify and manage
- Propose actions that have little potential to be sustained or very high risks of failure due to internal or external factors

Table 2 | Example of a results framework

Expected Results	Indicators	Data Sources	Key Assumptions & Risks
Project objective: To increase the use of climate change adaptation measures by the farming communities in flood and drought prone areas			
Outcome 1: improve the capacity of local authorities and farming groups to implement 'climate smart' agriculture practices	<ul style="list-style-type: none"> Inclusion of adaptation methods in extension packages Number of farmers that are using climate smart methods 	<ul style="list-style-type: none"> Farmer surveys annually Interviews with government staff Site field reports on farming practices 	<ul style="list-style-type: none"> Government authorities support adaptation extension Farmers are willing to adapt to climate risks
Outputs:			
1. Technical advisors trained in agricultural and water management methods for climate smart agriculture	<ul style="list-style-type: none"> Number of advisors effectively trained in adaptation measures Level of trainee satisfaction with the skills acquired 	<ul style="list-style-type: none"> Pre and post training assessments Uptake of the methods in extension activities of staff 	<ul style="list-style-type: none"> Staff turnover does not undermine the training Experienced trainers are available
2. Adaptation strategies and measures and technical support analysis and guidance developed for extension programmes	<ul style="list-style-type: none"> Technical analysis completed of feasible and suitable measures Extension packages modified to incorporate adaptation method 	<ul style="list-style-type: none"> Expert review of technical reports produced Updated Extension packages 	<ul style="list-style-type: none"> Extension packages can be modified to address local climate vulnerabilities
3. Farmers trained and mentored in the implementation of climate smart methods	<ul style="list-style-type: none"> Number of farmers effectively trained in adaptation measures Level of trainee satisfaction with the skills acquired 	<ul style="list-style-type: none"> Pre and post training assessments Site field reports on farming practices 	<ul style="list-style-type: none"> Technical advisors and trainers are accepted by the farming community Farmers are willing to adopt new methods through own initiative



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