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Mekong Adaptation and Resilience to Climate Change (Mekong ARCC)

Annual Report

Year One

October 2011 to September 2012

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Mekong Adaptation and Resilience to Climate Change (Mekong ARCC)

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I. YEAR ONE SUMMARY

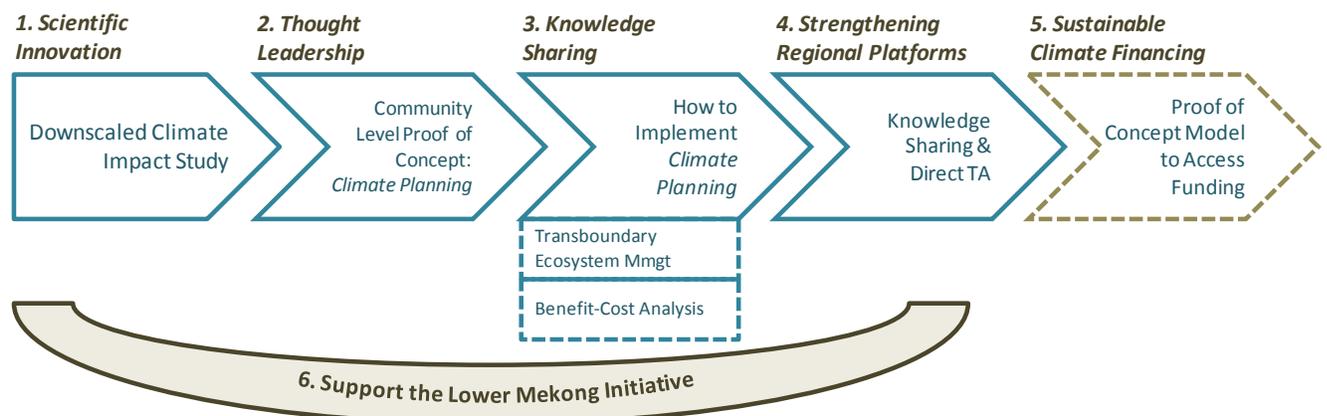
The first year of the Mekong Adaptation and Resilience to Climate Change (Mekong ARCC) project largely focused on undertaking the scientifically rigorous Climate Change Adaptation and Impact Study (Task 2) that will underpin the adaptation activities carried out in years 2-5. Transitioning from the *research phase* to the *applied science phase* of Mekong ARCC is a pivotal step in the program, and will ultimately yield the thought leadership that adds value to the emerging landscape of climate adaptation programming. The three core elements of year one that set the stage for a field oriented year two are the following:

a) Building the enabling environment – (Tasks 3&5) The team focused efforts on relationship building with regional platform partners, donors, government officials, and potential implementing partners currently leading climate adaptation programs throughout the Lower Mekong Basin.

b) Climate Impact Study & Priority Setting – (Task 2) Considered the backbone of the program, the Mekong ARCC team worked in collaboration with regional scientists and researchers to complete a first-of-a-kind regional climate downscaling study, which divides the Lower Mekong Basin (LMB) in to eco-agricultural zones and highlights climate hotspots; these priority regions – the most vulnerable to a changing climate – will be the focus of field activities scheduled to begin in year two.

c) Establishing the Mekong ARCC *Integrated Climate Planning Concept* – (Task 3) The original design of Mekong ARCC challenged the implementing team to connect the best climate science information with community level decision making, breaking new ground in the emerging climate adaptation landscape. After time spent understanding *how* this might look in practice in order to add real value to future adaptation programming, at the close of year one the Mekong ARCC team’s *Integrated Climate Planning Concept* crystallized in to a model that will be applied – a proof of concept – under Task 3 field activities.

The flow diagram below illustrates the critical elements of the Mekong ARCC program – year one activities largely fell in to the ‘Scientific Innovation’ segment, while year two pushes us in to the tangible thought leadership, knowledge sharing, and platform strengthening segments.



2. PROGRAM OVERVIEW

Program Name:	Mekong Adaptation and Resilience to Climate Change (Mekong ARCC)
Activity Start Date And End Date:	September 26, 2011 through September 25, 2016
Name of Prime Implementing Partner:	DAI
Contract Number:	AID-486-C-11-00004
Name of Subcontractors:	International Centre for Environmental Management (ICEM) World Resources Institute (WRI)
Major Counterpart Organizations	None
Geographic Coverage (cities and or countries)	Lower Mekong River Basin countries- Cambodia, Laos, Thailand and Vietnam
Reporting Period:	Annual

2.1 Program Description

The Mekong ARCC project is a five- year program (2011-2016) funded by the USAID Regional Development Mission for Asia (RDMA) in Bangkok and implemented by DAI in partnership with the International Centre for Environmental Management (ICEM) and World Resources Institute (WRI). The project focuses on identifying the environmental, economic and social effects of climate change in the Lower Mekong Basin (LMB), and on assisting highly exposed and vulnerable rural populations in ecologically sensitive areas increase their ability to adapt to climate change impacts on water resources, agricultural systems, biodiversity, ecosystems, and livelihood options.

Flowing from the upper watersheds of Lao to the delta in Vietnam, the LMB connects and provides ecosystem services critical to livelihoods, food security and welfare of the basin’s 60 million inhabitants. Yet the connectivity of the basin also links Lao PDR, Thailand, Cambodia and Vietnam to transboundary climate and development threats. Mekong ARCC works in each of the four LMB countries in recognition that each has its own national climate policies and economic and development priorities, and that communities are structured and function differently in each as a reflection of the respective nations’ unique laws, history and culture. Lessons and experiences drawn from the national and community level will ultimately be feed up to regional actors working at the transboundary level to help ensure they are shared across the Basin.

The impetus for Mekong ARCC stems from the launching of the Lower Mekong Initiative (LMI). Announced by the US Secretary of State and foreign ministers from each of the LMB countries in 2009, the LMI emphasizes close cooperation between the United States and

governments of Thailand, Cambodia, Lao PDR, and Vietnam to support regionally sustainable and environmentally responsible growth.

The primary goal of Mekong ARCC is: *Increase adaptation capacity and resilience of communities to the negative impacts of climate change.*

Objectives of the project include:

- Increase human and institutional capacity to develop and implement climate change adaptation plans and strategies
- Strengthen policies, tools, methodologies and practices for ecosystem services valuation and climate resiliency
- Demonstrate and scale-up model actions for integrated approaches to climate change adaptation
- Support and sustain regional learning networks to share and replicate best practices

Mekong ARCC is comprised of five major tasks technical tasks in addition to overarching program management. These are:

1. Regional Platform Partner and Knowledge Center;
2. Climate Change Impact and Adaptation Study;
3. Ecosystem and Community-based Adaptation Initiatives;
4. Valuing Ecosystem Services in Economic Planning for the Lower Mekong River Basin, and;
5. Scaling-Up Successful Approaches.

Mekong ARCC is headquartered in Bangkok with project activities carried out in Thailand, Vietnam, Cambodia and Lao PDR.

2.2 Approach

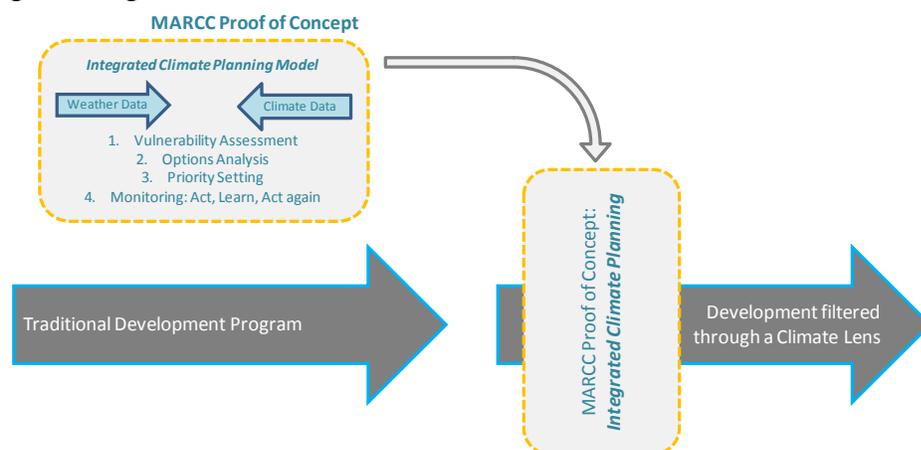
The Mekong ARCC program was designed to advance the first generation of climate adaptation programming by identifying and applying methods to incorporate the best available climate science in to community level planning. Like any new frontier, the climate adaptation landscape is filled with experimental methods and models that together seek to clarify *how* people can address tension between the uncertainty of climate science and the need for action. At one end of the spectrum, meteorologists and mathematicians are generating downscaled climate models, while at the other end, development practitioners are building awareness of how predicted climate variability might impact community health and livelihoods.

While these approaches provide a jumping off point for adaptation programming, they do not generate a *cohesive* and *replicable adaptation program design* that incorporates weather and climate information in to community planning to address current vulnerability and future threats from climate change (aka, *Integrated Climate Planning*). Mekong ARCC will provide a proof of concept to fill this void, connecting the best climate science with community development (*applied science*) to advance the adaptation program landscape toward an agreed upon blueprint for adaptation program design.

Prior to reaching this *applied science* phase of the project, the Mekong ARCC project focuses resources on the *scientific research* phase, which is yielding a first-of-a-kind downscaled climate model that illustrates highly threatened and valuable agricultural crops, livestock, and fisheries, and natural systems (ecosystem and biodiversity) assets. The on-going 10-month Climate Change Adaptation and Impact Study is developing projections of the impacts of climate trends and threats on agricultural production, ecosystems, and livelihoods for two future time slices: 2030¹ and 2050. A major output of the Study is the identification of high priority hotspot zones that are most sensitive and exposed to projected shifts in climate, such as increased temperature, precipitation and salinity inundation.

The climate and zone exposure information generated by the Study is the most detailed of its kind produced to date in the LMB, and could become a seminal body of climate research for decision makers in the region. Turning this leading ‘climate adaptation thinking’ in to practical on-the-ground ‘climate adaptation doing’ is the next level of value add the Mekong ARCC program will contribute to climate adaptation in the region. In addition to this assessment of climate impacts, an **analysis of ecosystem services** based on data collected at focal sites identified by the Study will engender increased understanding of the values of natural systems, crops and fisheries, and, potentially, climate change impacts on these assets. Country-specific guidelines will be generated through this analysis so that policymakers and planners can better integrate these values into their national development planning.

As described above, the *applied science* phase of Mekong ARCC seeks to fill the void with a blueprint for a *cohesive and replicable adaptation program design* that incorporates weather and climate information in to community planning to address current vulnerability and future threats from climate change. We anticipate the next generation of adaptation programs will begin to converge around a subset of best practice design models, and that once the Mekong ARCC *Integrated Climate Planning* proof of concept is field tested it serves as one of these applicable models. A key feature of the concept is that the *Climate Planning* model is not in and of itself a program, but rather a packaged template that can be overlaid on top of traditional development projects (see graphic below). This feature is critical in that it does not suggest adaptation is fundamentally a new paradigm, but rather, it is a ‘climate lens’ to apply to ongoing community development programming.



¹ Modeling will be undertaken for the 2050 scenario and serve as a basis for an expert assessment of the 2030 time slice.

This thought leadership generated by Mekong ARCC represents the beginning of a second generation of adaptation programming under which *Integrated Climate Planning* (and monitoring) will provide a replicable adaptation program design. In practice, the proof of concept will provide a clear cohesive template for future USAID Adaptation programming. Additionally, region platforms, such as the Mekong River Commission (MRC), can assist Lower Mekong countries apply this design to promising community developing projects as a means of accessing international *climate financing*. For each of the four target countries, a pre-feasibility study will be developed to promote replication, scaling up and mainstreaming of successful community adaptation approaches. While this proof of concept will not be the only option for LMB countries, it is unique in that it will link cutting edge downscaled climate science information – the most comprehensive and sophisticated to date in the lower Mekong – to community-based adaptation planning and decision making.

3. ACTIVITY IMPLEMENTATION PROGRESS

3.1 Progress Narrative

Considered the backbone of the Mekong ARCC program, the team allocated a large portion of Year One labor and time to undertaking a rigorous *Climate Change Impact and Adaptation Study for the Lower Mekong Basin*. The Study, led by Mekong ARCC subcontractor the International Centre for Environmental Management (ICEM), commenced in the 2nd FY Quarter with a kick-off working session held from 30th March – 2nd April 2012 in Vientiane, Laos. This represented a roughly six month delay in initiation of the Study, as a result of awaiting the approval of a USAID waiver allowing DAI to contract ICEM through the Hong Kong office where they are registered.

The innovative Study being developed by Mekong ARCC provides scientific rigor that serves the project as a tool in linking research and adaptation action. This will be done in two important ways. First, the Climate Study will provide a threat rationale that justifies the prioritization and selection of areas where Mekong ARCC will focus its field work. In year two the project will solicit proposals from local and international implementing groups to undertake *adaptation initiatives* with communities in 3-5 of these focal areas across the Basin. Second, Mekong ARCC will test *how* this scientific information can be translated and used at the community level. The project will work with the selected implementing partners to integrate *Climate Planning* into community development. This will be through participatory visioning exercises that link historical and current weather patterns with the future climate scenarios identified by the Mekong ARCC Climate Study.

While Task 3 ecosystem and community-based adaptation activities did not formally kick off in Year One, the team spent considerable effort relationship building and surveying on-going adaptation activities in the LMB. Mekong ARCC senior managers met with numerous actors undertaking adaptation initiatives in order to better understand the range of climate adaptation initiatives being undertaken or planned for the LMB. This was done with the objective of identifying how best Mekong ARCC could add value to future adaptation programming. In the process, the project found a spectrum of traditional rural development activities supporting

community adaptation but without a common conceptual method of incorporating weather and climate information in to the decision making process. Many programs operate from a ‘predict and provide’ framework, whereby somewhat ambiguous future climate projections are being used to inform current community adaptation investments. Such adaptation projects are generally more focused on *technical solutions* – like infrastructure, watershed management, crop selection, etc. – than *adaptation decision making*, making it difficult to answer the question: Is this activity climate adaptation, or simply good development? The Mekong ARCC team benefited from the understanding gained through this review in its conceptualization of how climate planning could add value to the community adaptation landscape by measurably strengthening local adaptation decision-making to meet near and long-term planning needs of rural people.

3.2 Implementation Status

In the sections that follow, we highlight key activities and progress made under each of Mekong ARCC’s five tasks.

Task I – Regional Platform Partner & Knowledge Center

Concentrated in the first two quarters of Year One, activities under Task I included identifying a regional target audience for knowledge sharing and platforms through which Mekong ARCC project activities, progress, and best practices could be communicated. This work culminated in the development of the Mekong ARCC Communications and Knowledge Management Advocacy and Dissemination Strategy, alongside a number of meetings with key regional media outlets to introduce the project. Key activities included:

Identify Regional Target Stakeholders for Dissemination of Project Data, Reports, and Other Information

- **Primary targets:** (i) Government planners and policy-makers, (ii) climate scientists and academics, (iii) development practitioners; and
- **Secondary targets:** (iv) Private sector companies from sectors threatened/impacted by climate change (e.g. agriculture, fisheries, forestry, insurance, finance/investment), (v) the general public.

Identify Platforms, Forums, and Other Opportunities for Dissemination of Project Information

Social Media

Mekong ARCC launched program social media sites on Facebook and Twitter. These were used as tools for initial outreach until the program website development was completed and over the life of the project will serve to broaden the scope of the project’s web footprint. The site is regularly updated with information on upcoming events, publications and news items. The Facebook page (see screen shot on left) can be found at <http://www.facebook.com/MekongARCC> and the tweeter feed at <http://www.twitter.com/MekongARCC>

Website

Mekong ARCC Mekong Adaptation and Resilience to Climate Change

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PROJECT SCIENCE IN THE FIELD HAPPENINGS

RESOURCES

COUNTRY THEME TYPE

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SPOTLIGHT

22 August 2012

Mekong ARCC: What's it all about?

Welcome to the Mekong ARCC! As the inaugural blog post on our website, I thought it best to start off by sharing with you what I think we're all about. This is no...

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EVENTS NEWS BLOG

31 October 2012 - 1 November 2012

Interim Results Workshop on Mekong ARCC's Climate Change Impact and Adaptation Study for the Lower Mekong Basin

Venue: Hanoi, Vietnam

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Development of the Mekong ARCC Website was completed in the first year of the project. The site is a central element of program's knowledge management, and is designed to host a categorized document library, repository of news articles, blog for presentation of lessons and observations by key participants, and a calendar of project events, among other functions. The website address is www.mekongarcc.net

Media Strategy

A media engagement strategy was completed with the identification of newspapers, magazine and other regional outlets through which project information can be channeled. Over the course of the year, the Mekong ARCC team held meetings with a number of journalists and editorial boards from

these outlets to introduce the Mekong ARCC project and highlight on-going activities, such as the Task 2 Climate Change Impact and Adaptation Study.

Produce Communications and Knowledge Management Advocacy and Dissemination Strategy

Mekong ARCC's Knowledge Management/Communications Advisor, Eric Stephan, completed a Knowledge Management Strategy and Plan that will provide strategic guidance to the project's KM. The plan lays out a KM approach, tasks and activities to effectively capture and disseminate both "explicit" and "tacit" knowledge. Explicit knowledge is information that is concrete, such as reports, data, procedures, or analysis, that can be written down and communicated clearly. Tacit or "how-to" knowledge often involves complex understanding of contexts, vocabularies, and relations which are not able to be set down by normal documentation. The full draft Knowledge Management Strategy and Plan can be found in the 2nd Quarter Report.

Task 2 – Climate Change Impact and Adaptation Study

The approach of the Mekong ARCC *Climate Change Impact and Adaptation Study for the Lower Mekong Basin* Study is to identify ecozones and areas within them where climate change will lead to significant alterations in temperature, rainfall and soil salinity. The Study examines climate impacts on a range of key sectors and natural systems across the Basin, including

ecosystems, agriculture and livestock. Socio-economic data is also overlaid on the zones to identify communities that are most exposed and sensitive to climate change impacts. A team of more than 20 national and international experts comprise the Study team that is undertaking the most comprehensive assessment of climate impacts that has yet been carried out for the Lower Mekong Basin. Key activities for Task 2 included:

Finalize Study Methodology & Mobilize Team

Target Crop Species Identified

A full listing of the crop species in the MRB for which the impacts of climate change will be examined through the study can be found in Table Y below.

TABLE 1: CROP SPECIES OF THE CLIMATE CHANGE ADAPTATION AND IMPACT STUDY

TOP COMMERCIAL CROPS			
Vietnam	Lao PDR	Thailand	Cambodia
Rice, paddy	Rice, paddy	Rice, paddy	Rice, paddy
Coffee, green	Maize	Rubber	Cassava
Cashew nuts, with shell	Coffee, green	Cassava	Maize
Cassava	Tobacco	Sugar cane	Bananas

<p>Fruit trees: Bananas and mangoes</p> <p>Vegetables: Sweet potatoes, tomatoes, beans, chilli</p>	<p>Traditional crop varieties</p> <ul style="list-style-type: none"> • Rice (more than 13,000 identified in Lao PDR) • Eggplant (more than 3,000 identified in Lao PDR) • Papaya • Banana (centre of origin) • Mango (centre of origin) • Pineapple • Water melon • Passion fruits 	<p>Wild plants</p> <ul style="list-style-type: none"> • Cardamom • Rattan and bamboo • Orchids • Mushrooms <p>Wild crop relatives</p> <ul style="list-style-type: none"> • Glutinous rice (centre of origin) • Eggplant (centre of origin)
<p>Subsistence crops</p> <ul style="list-style-type: none"> • Lowland and upland rice • Cassava • Maize • Peanuts 		
<p>Centre of origin for: coconut palm, sugarcane, clove, nutmeg, black pepper, onion, cucumber</p>		

Climate Zoning

At the study kick-off working session, the study team laid out the approach of overlaying climate change impact through zoning. The purpose of zoning is to identify areas of the basin with common bio-physical and socio-economic characteristics and observe “shifts” in the zones with climate change. The three types of zones to be examined and delineated in the study are:

- Climate change zones – where temperature, rainfall and hydrology data will be applied
- Agricultural zones – examining cropping patterns and natural conditions
- Ecological zones – where habitat and species occurrence will be incorporated

Climate change shifts within these zones will then be examined according to geography– including change in total area of crop suitability– elevation, and seasonal changes in yields and cropping patterns. The result of the zoning process will be the delineation of climate change “hot spots” – i.e. highly vulnerable areas. These hot spots will be the focal areas for the implementation of the Ecosystem and Community Adaptation pilot projects of Task 3 and defined as areas of:

- 1. High exposure**
 - significant climate change relative to base conditions
 - exposure to new climate/hydrological conditions
- 2. High sensitivity**
 - limited temperature and moisture tolerance range
 - degraded and/or under acute pressure
 - severely restricted geographic range
 - rare or threatened
- 3. Low adaptive capacity**
 - socioeconomic metrics
 - population dynamics

Non-climate Drivers

Along with climate change, the study will explicitly consider the following drivers, based on their importance to development of the basin and the availability of accurate data:

- **Hydropower development:** there are currently 16 large hydropower projects existing in the Mekong Basin, with an additional 30 projects currently under construction or firm planning to come online by 2015. These 46 projects will have the capacity to store 44,415MCM of Mekong flow reducing wet season flows by 10% and increasing dry season flows by on average 20-50% (ICEM, 2010). In addition a further 40 projects are being considered for development before 2030 inducing further regulation of the Mekong flood pulse (ICEM, 2010).
- **Irrigation:** the vast potential of Mekong water resources has long made irrigation attractive. To date, 3.8million ha of land are under some form or irrigation in the basin, by 2030 this is expected to increase to 6.0million ha (MRC, 2009). This will amount to less than 5% of the total annual flow in the Mekong Basin, but will have important applications for the local hydrological regime on tributaries and some reaches of the Mekong River.
- **Forest exploitation and changes in land use:** forests are an important resource of the Mekong Basin with large remnant areas of important terrestrial biodiversity. These areas face continued and increasing pressures from logging, and the expansion of economic concession and agricultural land. Changes in forest cover will influence the run-off volumes generated in some sub-catchments as well as the amount of sediment transported downstream. To date, extensive clearing in Yunnan province (1970-80s) and then subsequent soil conservation practices has resulted in observable changes to flow regimes and more significant changes in

sediment loads, and deforestation in the LMB (Lower Mekong Basin) has also resulted in changes to tributary hydrology (ICEM, 2010).

- **Population growth and regional/national demographic changes:** the region is currently going through a huge growth period in terms of economy and population. The impacts of these on the natural and agricultural environments will be significant.

Qualitative Review of Potential Sites

An initial qualitative review of potential sites for implementation of the Ecosystem and Community Adaptation field activities was also undertaken at the core team meeting. A preliminary list of 28 possible sites were identified based on availability of data, ecosystem health, replicability, enabling environment, and active engagement by an implementing partner that can serve as a platform and be built upon through Task 3 of Mekong ARCC. The number of potential sites will be paired down to 8-12 sites through the scientific review detailed above.

Baseline Development

Mekong ARCC brought together its team of more than twenty national and international scientific and socio-economic experts in Vientiane, Lao PDR from May 7-10 to develop the baseline for a ten-month Climate Change Adaptation and Impact Study of the Lower LMB. A further nine representatives of the MRC also participated in the scoping session. The purpose of the meeting was to document current knowledge and projected climate impacts on commercial and traditional crops, fisheries and aquaculture, livestock, and ecosystems in the LMB, and to develop a common understanding of the methodology that is being employed in the study. This meeting resulted in establishment of a template and approach for conducting the baseline study; increased understand of status, trends and drivers of agriculture, fisheries and aquaculture, traditional and wild crops, and NTFPs; and identification of linkages between sectors and natural systems.

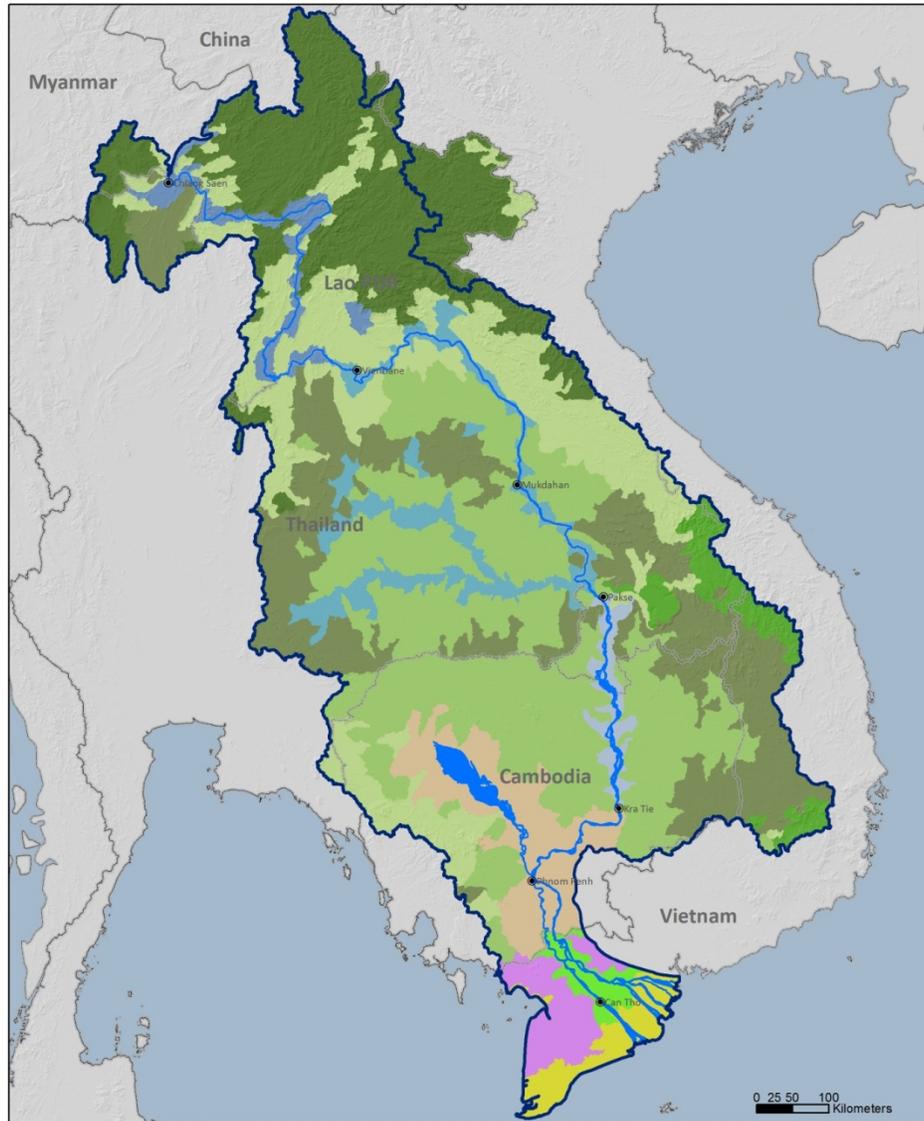
Undertake Zoning and Trend Analysis

The Task 2 team developed a new zoning for the Lower Mekong Basin based on a concept of distinctive areas in terms of ecosystems and agriculture and fisheries. The zones form the analytical foundation for the climate change assessments and adaptation responses. FAO has developed agriculture zones for the region but those do not take into account original and existing ecosystems. WWF and other have developed ecological regions but those do not consider agriculture or the relationships of local livelihoods to natural systems. They reflect original ecosystems and do not take into account changes through use.

The Task 2 team analyzed FAO's agriculture regions and WWF's ecozones and the layers of information which define them. They used the ecozones as a foundation for the study then with guidance from the FAO regions and expert knowledge on fisheries, agriculture and ecosystems of the basin adjusted the ecozones to develop 12 agro-ecological zones, which build on distinctive ecosystems, agricultural patterns of use and fisheries attributes (see Map below). This is the first time in the LMB that zones have been defined based on natural systems including original vegetation cover and man-made agricultural systems. It provides a framework for

assessing the relationships between the agricultural activities and linked natural systems dependencies which change with seasons and climate.

MAP 1: ECOZONES OF THE LOWER MEKONG BASIN



ECOZONES IN THE LOWER MEKONG BASIN

- National Border
- LMB boundary
- Water body
- High-elevation moist broadleaf forest Annamites
- High-elevation moist broadleaf forest North Indochina
- Mid-elevation dry broadleaf forest
- Low-elevation dry broadleaf forest
- Low-elevation moist broadleaf forest
- Upper floodplain wetland, lake (Chiang Saen to Vientiane)
- Mid floodplain, wetland, lake (Vientiane to Pakse)
- Lower floodplain, wetland, lake (Pakse to Kratie)
- Tonle Sap swamp forest & lower floodplain (Kratie to delta)
- Alluvial freshwater floodplain
- Low lying acidic area
- Delta mangroves and saline water



Data Source: ICEM 2012, WWF 2002-2006, MRC GIS Database

The Task 2 Study team began collecting data necessary to prepare detailed descriptions for the agro-ecological zones. The zone descriptions are being analyzed according to data sourced from provinces and districts government that are located within boundaries of each zone. A general description of each agro-ecosystem zone is being prepared based on the following information being collected:

- Soil
- Temp
- Rainfall
- Slope
- Elevation
- Area of PAs
- Wetland area
- Irrigated area
- Length of irrigation canals
- Number and density of villages
- Length of roads
- Population and poverty figures

The objective is to build detailed profiles of each zone using the administrative boundaries within them to describe socio-economic factors. The biophysical, climate and infrastructure characteristics of each zone have been described. The team is in the process of gathering sector data on zones and preparing baseline descriptions including trend analysis of the natural systems, fisheries and aquaculture, agriculture and socio-economics of each zone.

Identify Future Climate Conditions and Threats

Assessment of future climate change projections focused on downscaling future temperature and rainfall for the Mekong Basin, development of a CC parameter database and updating of the 1D hydrological model. Data from 6 GCMs was downscaled and processed, while the list of quantifiable climate threat parameters underwent peer review. Development of a 1D hydrological model for the basin at 1km grid resolution was completed, verified, and calibrated. A LUSSET application module to be built into the 1D model is under design as the vehicle for assessing land use suitability throughout the region under various climate regimes. Development of an AQUACROP application module also for integration with the 1D model was completed, verified, and calibrated for basin-wide modelling for use in assessing the impacts of climate change on the yields of individual crops.

Organize a Kick-Off Workshop for Government Officials from the Environment Offices of the Four Lower Mekong Basin Countries

A Mekong ARCC kick-off workshop was in the planning stages for early May. However, following a discussion in April with the Mekong River Commission's Climate Change Adaptation Initiative (CCAI) about collaboration between the programs, it was determined contributing to and co-sponsoring a MRC's Climate Scenarios workshop would be a more strategic approach to reaching the officials and other key stakeholders critical to Mekong ARCC's study outreach and dissemination strategy.

The Climate Scenarios workshop was scheduled by the MRC for June 11-12 in Ho Chi Minh City, Vietnam. However, the MRC was unable to gain approval from its member countries in time to convene the June workshop. The event has been delayed indefinitely, which has consequently meant that Mekong ARCC will not have the opportunity to formally kick off the project prior to the Climate Adaptation and Impact Study baseline results workshop in the 4th quarter of CY 2012.

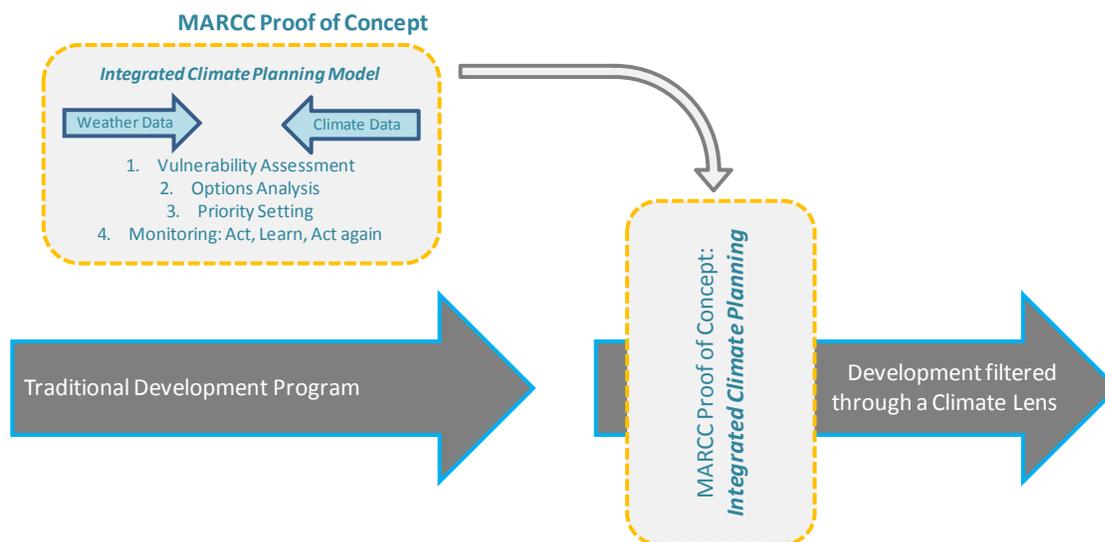
Task 3 – Pilot Integrated Adaptation Projects

While Task 3 activities did not formally kick off in Year One, the team spent considerable effort a) relationship building and surveying on-going adaptation activities in the LMB and b) refining our *Integrated Climate Planning* proof of concept.

Relationship Building – In parallel to the Study, the COP and DCOP began scoping range of prospective sites and partners working in these areas and catalogued a list of ongoing and planned climate adaptation programs in the LMB. In Bangkok, meetings were conducted with the WWF Greater Mekong Project Director, World Education’s Laos Country Coordinator, AEconsult (which works on community infrastructure projects in Cambodia), Raitong Organic Farm in North East Thailand, Rockefeller Foundation, TEI, APDC, Oxfam U.K. and Oxfam Thailand. The COP and DCOP also travelled to Hanoi, Vietnam where they met with Oxfam, CARE, Fauna and Flora International (FFI), International Center for Tropical Agriculture (CIAT), and International Livestock Research Institute (ILRI). Mekong ARCC was challenged in outreach to groups operating in Cambodia given delays in the enabling environment and working agreement between the RDMA and USAID/Cambodia missions.

Refining the *Integrated Climate Planning* Proof of Concept –The Mekong ARCC team determined that creating and testing a new adaptation program model that is simple to apply, easily replicable, and applicable across *all* sectors would be an innovation in for adaptation programming implementers. While traditional ‘predict and provide’ development focuses on technical solutions to perceived threats, our new concept uses an ‘act, learn, act again’ mentality that incorporates the fluidity of weather and climate information in to an ongoing decision making process. We consider it a ‘lite touch’ model because it is not a program in and of itself, but rather a packaged template that can be overlaid on top of traditional development programs (see Figure 1). This feature is critical in that it does not suggest adaptation is fundamentally a new paradigm, but rather, it is a ‘climate lens’ to apply to ongoing development programming. The *Integrated Climate Planning* package helps communities and decision makers connect historical and current weather patterns with future climate scenarios through geospatial maps and narrative future framing exercises. As this method simply folds in to customary community planning processes, the ‘climate lens’ is a practical way of incorporating the best available climate science with local decision making – a simple yet innovative value add that has the potential to bring clarity to the climate adaptation landscape and encourage the convergence of adaptation program design in second generation field programming.

FIGURE 1: PROOF OF CONCEPT DESIGN



As Task 3 ramps up in Year Two, testing the Mekong ARCC *Integrated Climate Planning* proof of concept will be a major focus for the project team.

Task 4 – Valuing Ecosystem Service in Economic Planning for the LMB

Activities under Task 4 will begin alongside Task 3 field activities in Year Two.

Task 5 – Scaling up Successful Approaches

Activities under Task 5 are largely focused on working through regional platforms – namely the MRC CCAI project – to build their capacity and leverage their convening power to scale up Mekong ARCC best practices. We continue to see interest from the MRC and others to understand and use the results and tools generated by the Mekong ARCC Climate Change Adaptation and Impact Study. As we test the proof of concept for field programming (Task 3) we see great potential in these regional platforms carrying forward the *Integrated Climate Planning* model to support LMB governments in their efforts to secure international climate financing. Notable achievements in year one include:

Identify Government and Regional Partners to Support and Assist in Scaling Up Results of the Project

- As mentioned in Task 2 above, nine representatives of the MRC participated in the scoping session in Vientiane. A sidebar meeting was held between the Mekong ARCC COP and the Programme Coordinator for the MRC’s CCAI, Nguyen Huong Thuy Phan, to discuss steps towards collaboration between the two programs. It was agreed that a formal partnership

would occur organically as a result of collaboration on specific activities and convening of events.

- Dr. Jeremy-Carew Reid, Task 2 Team Leader, presented initial results on the Task 2 study for the WB/FAO experts meeting held in Bangkok in April. The workshop provided an opportunity to learn directly what experience FAO has in the use of their model for similar studies. The opportunity also provided the WB with an early glimpse on the potential outputs of the project that could be used for pre-feasibility studies or other investments in agriculture and ecosystem adaptation. This was the first major event Mekong ARCC participated in and helped raise the profile of the project.

- Mekong ARCC presented in Hanoi, Vietnam at the *2nd Global Conference on Agriculture, Food Security and Climate Change* sponsored by the Ministry of Agriculture and Rural Development of Vietnam, the Ministry of Economic Affairs, Agriculture and Innovation of the Netherlands, FAO, and The World Bank. The presentation, entitled "Climate Impacts in the Lower Mekong: Implications for the Private Sector," was given as part of the larger session on the Role of the Private Sector in Climate Smart Agriculture. Utilizing data collected for the Mekong ARCC's Climate Change Impact and Adaptation Study, the presentation showed how changes in temperature and rainfall by 2030 will push the boundaries of crops climate tolerance and land suitability in the transboundary Sesan River basin for key agricultural inputs such as cassava, coffee, rice and rubber. These climate shifts will have significant impacts on the ability of natural resource and commodity dependent companies to meet production targets. The presentation broadly demonstrated that the projections the Mekong ARCC Climate Study is generating can be critical inputs for private sector strategic planning and future regional investments. Conference organizers intend to link the results from the workshop to a variety of international processes, in particular to the Rio +20 follow-up process and partnerships, the work of the Committee on World Food Security (CFS), as well as the ongoing climate change negotiations under the UNFCCC.

- Met with CEO of the MRC on February 8th to discuss possible collaboration. A follow up meeting was conducted with members from the MRC's Climate Change Adaptation Initiative in Vientiane where concrete areas of partnership were identified. Among the CCAI's goals are to assist MRC member countries with technical assistance related to climate risk. Potential areas of collaboration identified at the meeting included:
 1. Contribution to MRC Climate Scenarios development for the four member countries based on Mekong ARCC Climate Study (Task 2) This MRC process will develop a climate road map for the governments that incorporates technical, scientific and political information. The MRC's goal is to gain member country approval of this plan by 2013. For Mekong ARCC's climate study to be considered and factored into this MRC regional blueprint, which will serve as a basis for regional government planning, is highly desirable and the type of important influence that was envisioned for the study in the original project design;
 2. Inclusion of findings from Mekong ARCC's tasks and review of reports generated by the Mekong Panel on Climate Change. The MPCC, which is made up of experts from the

member countries, is a regional equivalent of the IPCC, with a scope focusing on climate change adaptation and water resources management in the Mekong River Basin, and as is viewed by the MRC as a mechanism for strengthening regional capacity, credibility and dissemination of regional achievements in relation to climate change and adaptation for the Mekong River Basin.

3. Supporting the Climate Change and Adaptation Monitoring System, through which the CCAI is developing a baseline and detailed methodologies for monitoring hydrological conditions and vulnerability at different area throughout the MRB.
4. Co-sponsoring an annual regional forum planned for April 2013 that will assist the CCAI in gathering input necessary to draft a Regional Adaptation Action Plan and Strategy for the MRC. This 2nd Annual MRC-CCAI forum has an additional focus on fostering collaboration, exchange, and network building between the roughly 40 community pilot projects concentrating on climate change adaptation in the Mekong Basin.

3.3 Implementation challenges.

- A waiver was requested was requested from USAID in order to source the services of ICEM on the Task 2 Climate Change Adaptation and Impact Study from Hong Kong, where they are internationally registered. The waiver was granted in March of 2012, which delayed the initiation of the Task 2 Study by roughly six months.
- Efforts to implement adaptation initiatives with communities in Cambodia were complicated by the USAID Cambodia Mission's request that the RDMA not directly undertake any field activities in the country. The Mekong ARCC scope of work requires that ecosystem and community-based initiatives are carried out in each of the four Lower Mekong countries, so this request represents a significant challenge to the ability of the project to meet deliverables as stated in the contract, and will likely require a contract modification. The Mekong ARCC team is exploring alternative ways address climate change impacts on communities in Cambodia, such as by adding value to existing adaptation projects of regional donors. Efforts to strengthen community resilience to climate change in Cambodia are viewed as particularly important as the Climate Study indicates that some of the greatest shifts in temperature and rainfall projected for the Basin will occur in the country, which also contains some of the Lower Mekong's poorest populations.
- A Mekong ARCC kick-off workshop was in the planning stages for early May. Following a discussion with the CCAI team about collaboration between the programs it was determined that contributing to and co-sponsoring a MRC's Climate Scenarios workshop, which was to take place in Ho Chi Minh City, Vietnam in April, would be a more strategic approach to reaching the officials and other key stakeholders critical to Mekong ARCC's study outreach and dissemination strategy. However, the MRC's workshop was delayed and then postponed indefinitely, which left Mekong ARCC without a workshop at which to formally kick the project off either through an MRC event or on its own.

- The mid-term workshop was planned to take place in Hanoi, Vietnam at the end of September 2012. Preparations were moving towards completion when the USAID Mission in Vietnam recommended that the workshop be co-organized with the Vietnam Ministry of Natural Resources and Environment (MONRE). While this suggestion strengthened the legitimacy of the workshop and ensured better participation, it did require that the workshop be postponed one month until early November so that could the Mission and project could undertake outreach to MONRE to gain their agreement on co-organizing, and input into workshop preparation.

3.4 PMP Update

DAI received USAID approval for the project PMP in February 2012 after making revisions on the initial submission based on USAID comment. The PMP included eleven (11) indicators to support reporting on four intermediate results for USAID/Asia. The indicators selected were a mix of standard and custom, and included the mandatory standard indicator for all USAID climate change adaptation programs.

As the majority of targets will be met during Years 2-5 of the project, this year DAI focused on the design of monitoring systems, guidelines, and tools to be used by project staff and implementing partners. Technical assistance was provided by WRI to help conceptualize the Mekong ARCC theory of change and tailor indicators to facilitate accurate relaying of the impact the project will have on increasing the adaptive capacity and resilience of rural communities.

The Mekong ARCC DCOP, local M&E Specialist and US-based M&E Advisor actively participated in USAID/Asia's Data Quality Assessment (DQA) in the months of July through September. All three members of the Mekong ARCC team met with the DQA team for interviews and review of the project's M&E systems and collected data to date. As a result of the DQA meetings and in discussion with the COR, DAI will submit a revised PMP for the project in early FY2013 that better reflects the reporting requirements and indicators relevant for Mekong ARCC.

4. STAKEHOLDER PARTICIPATION AND INVOLVEMENT

- Continuous efforts were made throughout the year to introduce the program and learn about ongoing adaptation initiatives in the region. In Bangkok meetings were conducted with the WWF Greater Mekong Project Director, World Education's Laos Country Coordinator, AEconsult (which works on community infrastructure projects in Cambodia), Raitong Organic Farm, Oxfam U.K. and the Oxfam Thailand Country Director and Climate Change lead. The COP and DCOP also travelled to Hanoi, Vietnam where they met with Oxfam, CARE, Fauna and Flora International (FFI), International Center for Tropical Agriculture (CIAT), and International Livestock Research Institute (ILRI).

- Met with CEO of the MRC on February 8th to discuss possible collaboration. A follow up meeting was conducted with members from the MRC's Climate Change Adaptation Initiative (CCAI) in Vientiane where concrete areas of partnership were identified.
- Met with USAID/Vietnam and USAID/Cambodia Missions in January and provided each with a briefing to introduce the project objectives and activities and to explore areas of potential collaboration with existing and future bilateral portfolios. Follow up meeting was arranged with USAID Vietnam in September to discuss collaboration on Climate Study Interim Workshop and clarify future activities planned for Vietnam.
- The Mekong ARCC COR, A-COR and COP meet with the US Embassy in Laos PDR to provide a briefing on the project and solicit initial input into possible local partners. The US Ambassador to Lao, PDR and Deputy Chief of Mission were participants in the meeting to discuss the project. A meeting was also held with the Lao Ministry of Environment which provided a verbal commitment to support the project and its activities in Lao. A diplomatic note was prepared and submitted to the Government of Laos in coordination with the US Embassy in September.

5. MANAGEMENT AND ADMINISTRATIVE ISSUES

This section highlights key management and administrative accomplishments for Year One of the program.

Start Up

Mobilization of Key Personnel and Local Staffing

DAI mobilized the two long term key personnel, Chief of Party and Deputy Chief of Party, within 3 weeks of signing the contract with USAID/Asia. Additional short term assistance was also mobilized within the first two months of project start date in order to assist with administrative set up and technical deliverables, including the initial project five-year work plan and PMP. Beginning in December, DAI began hiring of local staff and completed hiring of the seven-person local support and technical team by May 2012.

Office Set Up

Office space was identified in December and build out of the space completed by mid-January. The Mekong ARCC team began working with a fully functioning office by the end of January. This included IT systems and bank accounts.

Legal Status

DAI (Thailand) Ltd. was established by DAI to facilitate the immediate start-up and legal security of contracts awarded to DAI with a base of operation in Thailand. This umbrella registration enabled the Mekong ARCC team to hire local employees, obtain appropriate work documents for expatriates, open bank accounts, and sign legal agreements within weeks after start up. As a result, Mekong ARCC team was able to focus on proceeding with the technical

requirements of the project without the distraction of legal status. With the support of USAID/Asia, DAI pursued sponsorship of the Mekong ARCC project with the Ministry of Environment and Natural Resources. Sponsorship by the Ministry will enable the two expatriate key personnel to change their legal status however will not impact the day-to-day operations of the project.

Subcontracts

DAI obtained approval from USAID/Asia and fully executed subcontracts with partners International Center for Environmental Management (ICEM) and World Resources Institute (WRI) within six months of award. Delays in signing both subcontracts were due to final discussions on budget allocations and differences in various costs since the time of proposal submission.

Coordination with USAID, USG partners, and Donor Communities

Coordination with other USAID-funded projects and those of other donors has been a priority for the Mekong ARCC team. Regular participation in REO partners meetings, as well as multiple meetings initiated by Mekong ARCC team members with donors and leading NGOs within the region has enabled the project to develop a robust inventory of all key USG and Non-USG partner contacts and activities related to climate change adaptation in Asia. Coordination efforts range from the sharing of operational information to participation in regional workshops.

Environmental Compliance

The M&E Specialist attended the USAID/RDMA hosted “Environmental Compliance and Environmentally Sound Design and Management” workshop for partners in May 2012. Based on guidance received during this workshop, DAI submitted our environmental monitoring and mitigation plan (EMMP) to USAID for approval at the end of June 2012.

6. LESSON LEARNED

1. An important lesson learned in year one relates to the need to incorporate flexibility into project implementation. A great deal of interest has been generated by the Task 2 Climate Study and a number of regional organizations have expressed interest in using this data and potentially working with the program, which would generate tremendous leverage for the project and USAID. These institutions include the ADB GMS, World Bank, ASEAN and MRC. While engagement with these types of regional platform partners is encouraged in the Mekong ARCC Scope of Work, in order to work with them some control has to be relinquished and a bit of the focus taken off of carrying out the full suite of climate planning activities in the field. Instead a more opportunistic approach is required, and one in which it is harder to predict exactly which activities the project will carry out in what places. This has been incorporated into a re-balancing of field implementation activities over the life of the project. Whereas initially it was intended for all funds for field activities would be put out to implementing groups through subcontracts awarded in year two, the project now plans to continue with this

procurement process but to hold some funds back for support of regional platforms, particularly the MRC.

2. Further to the point above, in relinquishing some control through partnerships with regional platform partners and governments, the project cannot always carry out activities according to the schedule it independently plans. For example, two workshops were scheduled to be undertaken in year one that were delayed as a result of the desire to coordinate important actors. One with the MRC, which has been postponed indefinitely, and another with the government of Vietnam, which was delayed for one month. The lesson for the project here is to ensure that events planned jointly are ones where there is complementarity in reaching project objectives, but that the project isn't dependent on these events happening according to a specific schedule in order to meet project deliverables.
3. A final and related lesson deals with the nature of partnership with regional platforms in which the Mekong ARCC wishes to engage. Each of these institutions has a structure approach and means to carry out activities that is different than Mekong ARCC's. As such partnerships with these groups needs to happen organically and based on mutual interest. With the MRC, for example, discussions have focused on concrete steps that Mekong ARCC and CCAI can take together, not on first signing a formal agreement laying out areas of partnership. Given the challenges of coordination, a feeling out period is required to identify where overlap truly exists and how to most effectively operate together in these areas. It is anticipated that an agreement will derive from this organic process, but not until real concrete steps toward collaboration are taken first.

7. KEY ACTIVITIES PLANNED FOR YEAR TWO

- Baseline Study Results presented to regional experts for input—November 2012
- Geographies finalized for ecosystem and community adaptation activities and presented to USAID for approval—November 2012
- Call for proposals released for ecosystem and community based adaptation initiatives — December 2012
- Penultimate Study Results Presented to regional experts for input—1st quarter of CY 2012
- Award Subcontracts to implementing groups —1st quarter of CY 2012
- Kick off of field initiatives —2nd quarter of CY 2012

ANNEX A: PERFORMANCE MONITORING PLAN—PROGRESS SUMMARY

TABLE 2: PMP INDICATOR PROGRESS - USAID STANDARD INDICATORS AND PROJECT CUSTOM INDICATORS

Improved Response to Environmental Challenges in Asia											
Indicator	Data Source	Baseline data		FY 2012		Quarterly Status – FY 2012				Annual Performance Achieved to Date (in %)	Comment
		Year	Value	Annual Cumulative Planned target	Annual Cumulative Actual	Q1	Q2	Q3	Q4		
Intermediate Result (IR): Enabling Conditions Improved											
Number of laws, policies, strategies, plans, agreements, or regulations addressing climate change adaptation proposed, adopted, or implemented as a result of USG assistance	DAI	2012	N/A	0	0	0	0	0	0	n/a	
Intermediate Result (IR): Human and Institutional Capacity											
Person hours of training completed in climate change supported by USG assistance	DAI	2012	N/A	0	0	0	0	0	0	n/a	
Number of stakeholders with increased capacity to adapt to the impacts of climate variability and change as a result of USG assistance	DAI	2012	N/A	0	0	0	0	0	0	n/a	

Percentage change of child malnutrition rates in vulnerable households	DAI	2012	N/A	0	0	0	0	0	0	n/a	
Number of pilot project activities designed and implemented by communities to reduce gender-specific vulnerability to climate change	DAI	2012	N/A	0	0	0	0	0	0	n/a	
Intermediate Result (IR): Model Actions Demonstrate											
Number of climate change adaptation tools, technologies, methodologies, and best practices developed or tested in the field for broad dissemination	DAI	2012	N/A	4	1	0	0	1	0	25%	Delay in starting Task 2 Study resulted in only development of study methodology
Number of community level plans implemented	DAI	2012	N/A	0	0	0	0	0	0	n/a	
Number of community-based M&E systems tracking progress on climate adaptation plans	DAI	2012	N/A	0	0	0	0	0	0	n/a	
Number of institutions with improved capacity to address climate change issues as a result of USG assistance	DAI	2012	N/A	8	0	0	0	0	0	n/a	Delay in starting Task 2 Study resulted in not meeting target of

											exposing institutions to new methodology for downscaling.
Intermediate Result (IR): Regional Networks and Institutions Strengthened to Replicate and Sustain Innovation											
Number or regional platforms created or strengthened	DAI	2012	N/A	0	0	0	0	0	0	n/a	
Number of web users acquiring information from the Mekong ARCC website	DAI	2012	N/A	Visits: 400 Hits: 10,000 Downloads: 0	0	0	0	0	0	n/a	Website not launched until end of FY2012. Insufficient time to collect data.