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CLIMATE CHANGE RESILIENT DEVELOPMENT

YEAR TWO WORK PLAN FINAL

January 2013

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CLIMATE CHANGE RESILIENT DEVELOPMENT

YEAR TWO WORK PLAN FINAL

IQC Contract No. AID-EPP-I-00-04-00024

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January 2013

DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government

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ACRONYMS AND SPECIAL TERMS

| | |
|----------|--|
| AAG | Association of American Geographers |
| ACMAD | African Centre of Meteorological Application for Development (). |
| ADB | Asian Development Bank |
| AgMIP | Agricultural Model Intercomparison and Improvement Project |
| AGRHYMET | Centre Regional de Formation et d'Application en Agrométéorologie et Hydrologie Opérationnelle |
| ALM | Adaption Learning Mechanism |
| AP | Adaptation Partnership |
| AR5 | Fifth Assessment Report |
| AREFS | Asia Region Environmental Field Support Project |
| ATP | Asesorías Técnicas y Profesionales |
| CCAFS | Climate Change, Agriculture and Food Security |
| CCRD | Climate Change Resilient Development (short title for Task Order) |
| CCSR | Center for Climate Systems Research's |
| CEQ | Council on Environmental Quality |
| CG | Coordinating Group |
| CGIAR | Consultative Group on International Agricultural Research |
| CILSS | Comité permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel |
| CLIN | Contract Line Item Number |
| CMIP5 | Coupled Model Intercomparison Project Phase 5 |
| CMP | Common Midpoint |
| COP | Chief of Party |
| CoP | Community of Practice |
| COP-17 | UNFCCC 17 th Conference of Parties, Durban, South Africa |
| COR | Contracting Officer's Representative |
| CRC | Coastal Resources Center (University of Rhode Island) |
| CRUS | Climate-Resilient Urban Services program |
| CSP | Climate Services Partnership |
| DAC | Durban Adaptation Charter |
| DCOP | Deputy Chief of Party |
| DfID | Department for International Development |
| DNPWC | Department of National Park and Wildlife Conservation |
| DRM | disaster risk management |
| DRR | Disaster Risk Reduction – |

| | |
|---------|--|
| DSSAT | Decision Support System for Agrotechnology Transfer |
| E.O. | Executive Order |
| EGAT | Bureau for Economic Growth, Agriculture and Trade |
| EGU | European Geosciences Union |
| ELI | Environmental Law Institute |
| ENDA | Environmental Development Action in the third world |
| ESC | ASEAN Environmentally Sustainable Cities |
| ESP | Office of Environment and Science Policy |
| EWS | Early warning system |
| FAO | Food and Agriculture Organization of the United Nations |
| GCC | Global Climate Change |
| GEF | Global Environment Facility |
| GenDev | Office of Gender Equality and Women's Empowerment |
| GFCS | Global Framework for Climate Services |
| GLOFs | Glacial lake outburst floods |
| GPR | Ground penetrating radar |
| GUC | Grant Under Contract |
| HMGWP | High Mountain Glacial Watershed Program |
| ICCS | International Conference on Climate Services |
| ICF | ICF Incorporated, LLC |
| ICIMOD | International Centre for Integrated Mountain Development |
| ICRISAT | International Crops Research Institute for the Semi-Arid Tropics |
| ICT | Information and communications technology |
| IEDRO | International Environmental Data Rescue Organization |
| IER | Institut d'Economie Rurale |
| IPCC | Intergovernmental Panel on Climate Change |
| IQC | Indefinite Quantities Contract |
| IRG | International Resources Group |
| IRI | International Research Institute for Climate and Society |
| IWRM | Integrated water resources management |
| JPC | Joint Planning Cell |
| KACC | Khumbu Alpine Conservation Committee |
| KM | Knowledge Management |
| LG | Local Governments |
| LOE | Level of Effort |
| M&E | Monitoring and evaluation |

| | |
|--------|---|
| MCP | Model Cities Programmed |
| MIT | Massachusetts Institute of Technology |
| NAP | National Adaptation Plan |
| NAPA | National Adaptation Programme of Action |
| NGO | Non-governmental organization |
| NGS | National Geographic Society |
| NOAA | National Oceanic and Atmospheric Administration |
| NSF | National Science Foundation |
| OMB | Office of Management and Budget |
| PLACE | Prosperity, Livelihoods and Conserving Ecosystems IQC |
| PMP | Performance Management Plan |
| POC | Point of Contact |
| PPCR | Pilot Program for Climate Resilience |
| PVO | Private Volunteer Organizations |
| RCCC | Red Cross Climate Center |
| RCP | Representative Concentration Pathways |
| RFAs | Requests for applications |
| RFTOP | Request for Task Order Proposals |
| SIWW | Singapore International Water Week |
| SMEs | Small and medium-sized enterprises |
| SNIP | National Public Investment System (Sistema Nacional de Inversión Pública) |
| SOW | Scope of work |
| SPCC | Sagarmatha Pollution Control Committee |
| TA | Technical assistance |
| TMI | The Mountain Institute |
| UNDP | United Nations Development Programme |
| UNFCCC | United Nations Framework Convention on Climate Change |
| USAID | United States Agency for International Development |
| USC | University of South Carolina |
| USG | U.S. Government |
| UT | University of Texas at Austin |
| UWI | University of the West Indies |
| V&A | Vulnerability and adaptation |
| WASH | Water, sanitation and hygiene |
| WMO | World Meteorological Organization |

PROJECT TEAM AND CONTACT INFORMATION

Project Team

International Resources Group (Prime Contractor) – Washington, DC

Private Sector Partners:

ICF Incorporated, LLC – Fairfax, VA

Stratus Consulting – Boulder, Colorado

The Manoff Group – Washington, DC

Cascadia Consulting Group – Seattle, WA

Manassas Travel – Salt Lake City, Utah

Universities, Research Institutes, and NGOs:

Environmental Law Institute – Washington, DC

Coastal Resources Center (University of Rhode Island) – Kingston, RI

Michigan State University – East Lansing, MI

International Research Institute for Climate and Society (Columbia University) – Palisades, NY

The Mountain Institute – Washington, DC

University of Hawaii Sea Grant College Program – Manoa, HI

University of Texas at Austin – Austin, TX

Contact Information

USAID CCRD Contracting Officer's Technical Representatives (CORs):

Co-COR – Ken Baum: kbaum@usaid.gov

Co-COR – John Furlow: jfurlow@usaid.gov

CCRD Management Team:

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Deputy Chief of Party – Peter Schultz, ICF Incorporated, LLC: pschultz@icfi.com

Operations Manager – Deborah Tepley: deborah.tepley@engilitycorp.com

Grants Manager – Lana Lightle: lane.lightle@engilitycorp.com

Project Administrator – Mukul Sharma: mukul.sharma@engilitycorp.com

CCRD Office:

IRG, 1211 Connecticut Avenue, NW, Suite 700 Washington, DC 20036

INTRODUCTION

On August 5, 2011, the United States Agency for International Development (USAID) awarded International Resources Group (IRG)¹ a Task Order under the Integrated Water and Coastal Resources Management Indefinite Quantities Contract (Water II IQC), titled “Increasing the Global Climate Change Team’s Technical Support Capacity to Global Climate Change, Adaptation, and Development Issues: The Nexus between Water Resources and Climate Change” (IQC Contract No. AID-EPP-I-00-04-00024). By agreement with the Contracting Officer’s Representative (COR), the Task Order is referred to as Climate Change Resilient Development or simply, CCRD. The CCRD consortium has completed activities for Year One. As specified in the CCRD contract, IRG has prepared a draft Year Two Work Plan. This work plan is structured similarly to the Year One Work Plan and includes a discussion of the strategic vision for CCRD in support of USAID’s Climate Change Strategy and elaboration of the three CCRD objectives. The presentation of activities and tasks is organized into three parts:

1. Year One progress – Description of deliverables drafted and/or finalized
2. Priority activities – Description of tasks and subtasks proposed for the first five months of Year Two (through December 2012) and summary tables describing team composition, milestones and deliverables
3. Future activities – In discussions with USAID and the CCRD Senior Advisory Committee, a list of potential Year Two activities was developed. Given the rolling nature of the work plan, these potential activities could be added to the Year Two Work Plan, as directed by the USAID COR or considered in the first Option Year, if it is authorized by USAID. The list of future activities is provided in Annex 1.

STRATEGIC VISION FOR CCRD

USAID programs seek to help developing countries achieve their national economic and sector goals through a range of proactive programs featuring investments in infrastructure and technology, capacity building and institutional strengthening, and policy reform. The design of all USAID programs and projects follows a logical process, even if slightly different words are used to describe the steps. First, there must be a clear articulation of the program’s objectives. These objectives provide the benchmark against which activities are assessed in the design process and monitored and evaluated during implementation. Second, it is important to understand existing constraints or barriers that can attenuate the potential benefits of the program; an understanding of them will help USAID design measures to address or minimize their potential negative impact on program or project success. Third, programs and projects are designed, taking into account the information from the first two steps, followed by implementation, monitoring, and evaluation. Long-term programs and projects can be managed adaptively with program elements adjusted on the basis of evaluation.

The centerpiece of CCRD is new guidance on mainstreaming climate change concerns into the design and implementation of development programs and projects. This approach represents the logical convergence and merging of climate adaptation planning with development program and project problem diagnosis and design. In 2007, USAID’s Global Climate Change (GCC) Office released guidance on the assessment of climate vulnerability and the identification, evaluation, selection, implementation, and evaluation of adaptations (referred to as the Vulnerability and adaptation – V&A – approach) at the project level. As USAID and its partners tested the V&A approach, it became apparent that: (1) problem diagnosis was limited to a narrow focus on a vulnerability assessment of climate “stressors” and (2) adaptation design to reduce climate vulnerability had two fundamental limitations. First, by emphasizing the screening and assessment of

¹ As of July 18, 2012, IRG is a fully-owned subsidiary of Engility Corporation and will be referred to as IRG

climate vulnerability, the V&A approach ignored the role that non-climate stressors can play in determining the potential success of adaptation programs and projects. Second, the V&A approach did not adequately account for financial, technical, organizational, and capacity constraints. At both the sector and project levels, adaptation programming competes with other development investments affecting capacity building, policy reforms, and technology adoption.

Thus, the new guidance for successfully mainstreaming climate change seeks to encourage USAID Bureaus and Missions to assess climate stressors jointly with other development constraints and barriers during program design activities. Consequently, mainstreaming guidance will propose several incremental changes to the design process for development programs and projects, including but not limited to:

1. Identifying climate stressors that can be expected to occur in the timeframe of the strategy, plan, program or project
2. Assessing vulnerability of climate stressors to people, their livelihoods, natural resources, and infrastructure
3. Considering a broad range of program or project activities that will address non-climate and/or climate stressors
4. Recognizing that it will be difficult to attribute program or project performance to individual adaptations or development measures once they are bundled and implemented in an integrated way

By incorporating incremental changes in program design, USAID will be better able to achieve improved development outcomes by increasing project and program outcomes and resilience to climate change impacts. CCRD is positioned to support USAID Bureaus and Missions to make these changes through the provision of general and sector-level mainstreaming guidance, the development of a variety of tools and knowledge to facilitate use of the new guidance, and technical assistance and capacity building as appropriate. Second, in support of the GCC Office, CCRD will coordinate with other U.S. Government (USG) (e.g., Department of State, National Oceanic and Atmospheric Administration – NOAA) agencies to promote innovations in mainstreaming of climate adaptation. Third, in collaboration with the GCC Office, CCRD will identify and respond to emerging climate change issues and provide knowledge management assistance for design, planning, and implementation of climate resilient development programming. Exhibit 1 on the next page describes the strategic framework for CCRD and links long-term strategic objectives of the GCC Office to CCRD's project goals, objectives, and activities.

The CCRD strategic vision also provides the benchmark for evaluating new program areas and tasks for inclusion in the Work Plan. A concerted effort will be made to ensure that all new activities and tasks as well as small grant solicitations are both consistent with the mainstreaming framework and promote climate resilient development.

WORK PLAN APPROACH

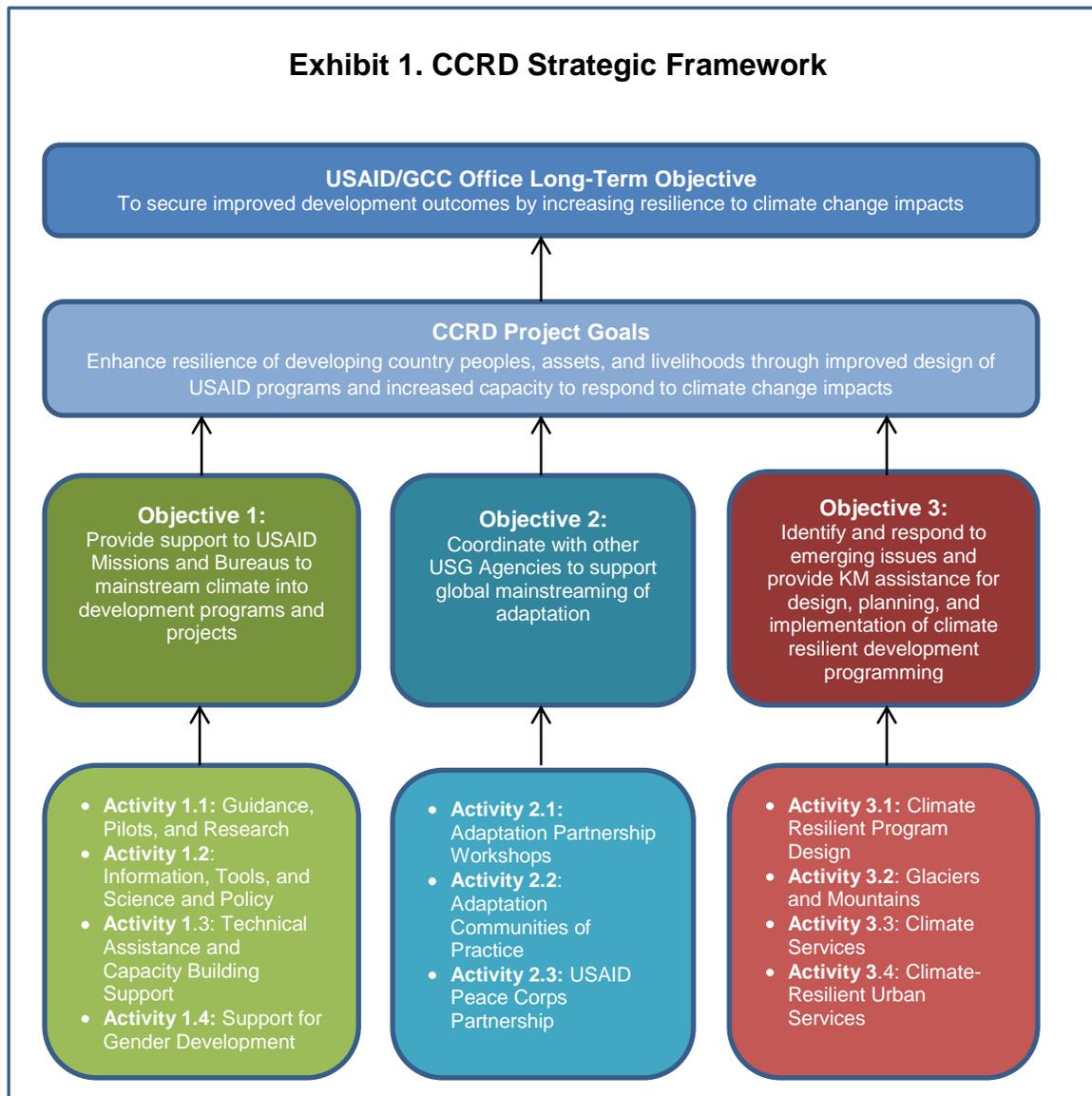
The remainder of the revised Year Two Work Plan is organized into four sections. The next section describes the tasks required for project management. The remaining three sections describe activities and tasks designed to address the objectives enumerated in Exhibit 1. A timeline for Year Two and a level of effort (LOE) chart are provided in Annexes 2 and 3. A draft Year Two Budget will be provided as a separate document.

To facilitate financial tracking of CCRD expenditures, project management and activities are assigned Contract Line Item Numbers (CLINs) and account for expenditures by source of funding (e.g., core funding and buy-ins). IRG has set up 10-digit accounting codes. The first four digits (5010) refer to the Task Order number IRG has assigned for its internal accounting purposes. The next three digits refer to the source of funding. "001" is used to designate core funding, "002" is used to designate the first buy-in from the US Department of State to support the Adaptation Partnership, and "003" is used to designate the second buy-in from USAID's Office of Gender Equality and Women's Empowerment (GenDev). Subsequent buy-ins will

be assigned numbers of 004, 005, etc. The last three digits of the accounting code are used to designate CLINs, starting with “000” for CLIN 1. For example, 5010.001.000 designates CLIN 1 activities funded by core funding, and 5010.002.004 designates CLIN 7 activities funded by the State Department buy-in.

Work Plan activities are organized according to six activities corresponding to CLINs approved by the COR, listed below:

- Project Management, Planning, and Evaluation – CLIN 1 (5010.001.000)
- Activity 1.1: – Guidance, Pilots, and Research – CLIN 2 (5010.001.001) and CLIN 4 (5010.001.003)
- Activity 1.2: Information, Tools, and Science and Technology – CLIN 3 (5010.001.002)
- Activity 1.3: Technical Assistance and Capacity Building Support – CLIN 6 (5010.001.005)
- Activity 1.4: Technical Assistance to the Office of Gender Equality and Women’s Empowerment – CLIN 8 (5010.003.006)
- Activities 2.1 and 2.2: Adaptation Partnership (AP) – CLIN 7 and CLIN 5 (5010.002.004 and 5010.001.004)
- Activity 2.3: USAID/Peace Corps Partnership – CLIN 5 (5010.001.004)
- Activities 3.1, 3.2, 3.3, and 3.4 – Emerging Issues – CLINs 5 and 7 (5010.001.004 and 5010.002.004)



PROJECT MANAGEMENT, PLANNING, AND EVALUATION

This activity covers all project management, planning, and evaluation tasks related to implementation of the Task Order. It also includes tasks related to strategic planning, internal and external communications, knowledge management, and implementation monitoring, evaluation, and reporting.

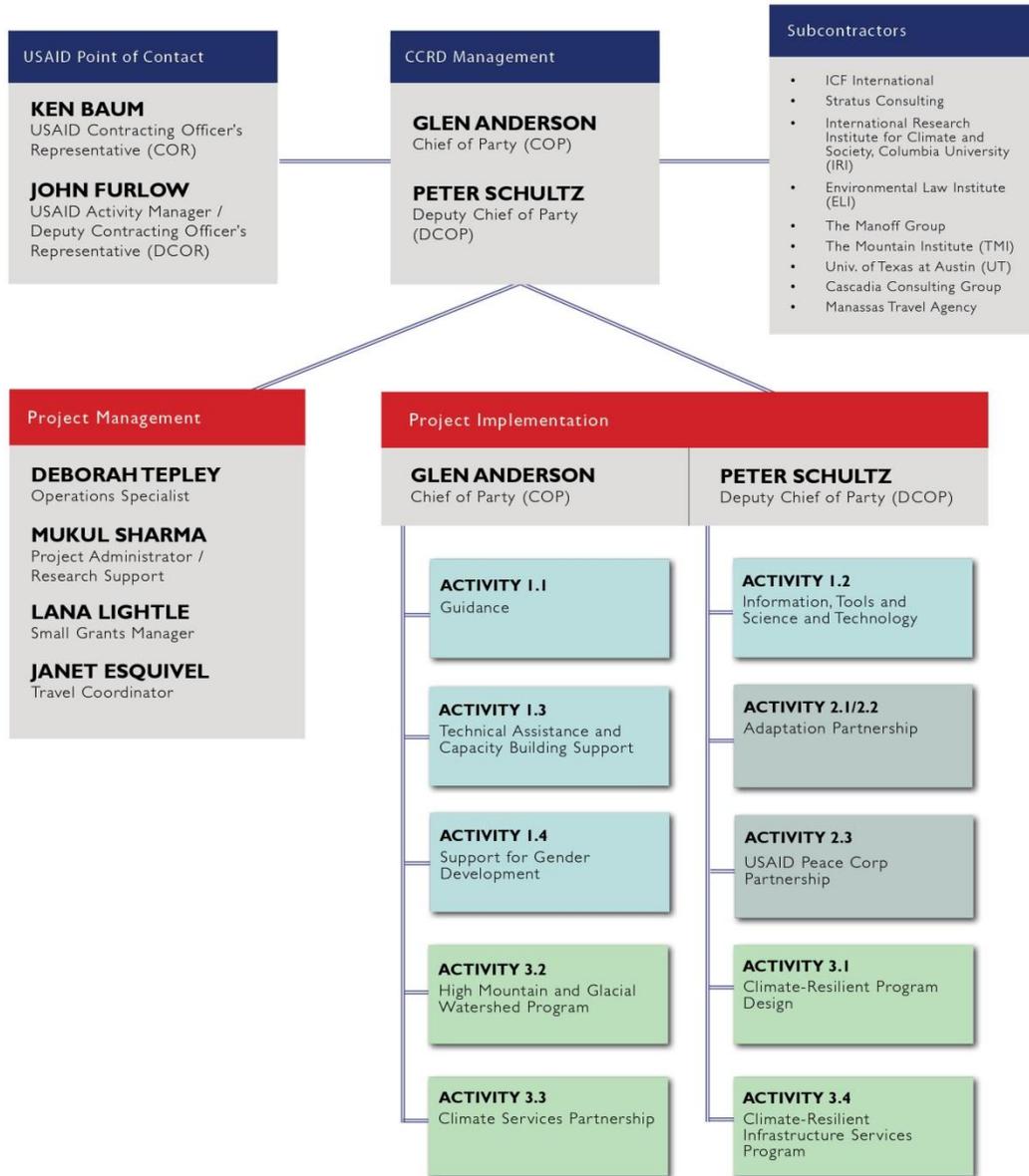
In addition to the project management tasks described in this section, CCRD implementation activities are proposed for three objectives, eight activities, and 24 tasks. To ensure effective oversight, review, and coordination of activities and tasks, CCRD has divided responsibility for oversight between the Chief of Party (COP) and Deputy Chief of Party (DCOP) and designated coordinators for each implementation activity and for several of the project management tasks. In addition, USAID has identified points of contact (POCs) for each activity. Exhibit 2 on the next two pages summarizes CCRD organizational structure and the assignment of responsibilities.

TASK PM-I: DEVELOP YEAR TWO WORK PLAN

During the CCRD Senior Advisory Committee meeting in April 2012, Year One progress was reviewed and the committee and USAID identified a number of ideas for Year Two activities. This was followed by a work planning exercise with USAID to set priorities for Year Two. CCRD will prepare a draft Year Two Work Plan for submission to the COR for review. The draft covers the first five months of Year Two. As in Year One, new activities and tasks may be added to the Work Plan on a rolling basis.

| Task PM-I Summary | |
|-------------------|--|
| Staff: | Glen Anderson (COP), IRG, and Peter Schultz (DCOP), ICF |
| Schedule: | June-August 2012; updates on as-needed basis |
| Milestones: | Draft Year Two Work Plan prepared; final Year Two Work Plan submitted; updates prepared (ongoing) |
| Deliverables: | <ul style="list-style-type: none">• Draft Year Two Work Plan• Final Year Two Work Plan• Year Two Work Plan Updates |

Exhibit 2. Organizational Chart



PROJECT MANAGEMENT

GLEN ANDERSON

| | |
|--|--|
| WORK PLAN | G. ANDERSON / KEN BAUM |
| PMP | G. ANDERSON / K. BAUM |
| STRATEGIC PLANNING / SAC | G. ANDERSON / JOHN FURLOW |
| REPORTING | DEBORAH TEPLEY / K. BAUM |
| COMMUNICATIONS, OUTREACH, AND COMMUNITIES OF PRACTICE (CoPs) | ROSAMUND MISCHJE JOHN / JENNY FRANKEL-REED |
| POC FOR SUBCONTRACTORS/CONSULTANTS | D. TEPLEY / K. BAUM |
| SMALL GRANTS | LANA LIGHTLE / K. BAUM |

PROJECT IMPLEMENTATION

GLEN ANDERSON / PETER SCHULTZ

| | | | |
|--|-----------------------------------|--|------------------------|
| ACTIVITY 1.1: GUIDANCE | G. ANDERSON / J. FRANKEL-REED | | |
| 1.1: GUIDANCE, BRIEFS, AND ANNEXES | YOON KIM / J. FRANKEL-REED | 1.1: CASE STUDIES | G. ANDERSON |
| REVISE V&A MANUAL | Y. KIM / J. FRANKEL-REED | CASE STUDIES TO DEMONSTRATE THE MAINSTREAMING GUIDANCE | G. ANDERSON |
| WATER ANNEX | BOB RAUCHER / J. FRANKEL-REED | WASH CASE STUDY | J. TROELL |
| COASTAL AND MARINE ANNEX | Y. KIM / JONATHAN COOK | | |
| DIFFERENTIATED VULNERABILITIES ANNEX | R. MISCHJE JOHN / ANDRE MERSHON | 1.1: NEW DIRECTIONS IN PILOTS AND RESEARCH | P. SCHULTZ / J. FURLOW |
| GOVERNANCE ANNEX | JESSICA TROELL / J. COOK | 1.1: WORKSHOPS | P. SCHULTZ / J. FURLOW |
| DEVELOP LESSONS LEARNED ON MAINSTREAMING CLIMATE ADAPTATION | MIKE SAVONIS / J. FRANKEL-REED | | |
| INFRASTRUCTURE LESSONS LEARNED PILOT | M. SAVONIS / K. BAUM | | |
| YEAR 2: KM / ROLLOUT OF NEW GUIDANCE | A. MERSHON | | |
| YEAR 2: V&A 201 TRAINING | A. MERSHON | | |
| YEAR 2: DRR CLIMATE GUIDANCE BRIEF | NORA FERM | | |
| YEAR 2: LEDS GUIDANCE BRIEF | ASHLEY ALLEN | | |
| YEAR 2: SECURITY/CONFLICT GUIDANCE BRIEF | J. FURLOW | | |
| YEAR 2: URBAN/INFRASTRUCTURE GUIDANCE BRIEF | K. BAUM / N. FERM | | |
| YEAR 2: RISK MANAGEMENT (INCLUDING DRR) GUIDANCE BRIEF | N. FERM | | |
| YEAR 2: HEALTH GUIDANCE BRIEF | J. FRANKEL-REED | | |
| YEAR 2: PROJECT DESIGN & MANAGEMENT (INCLUDING FINANCING AND M&E) GUIDANCE BRIEF | J. COOK | | |
| ACTIVITY 1.2: INFORMATION, TOOLS AND SCI AND TECH | | | |
| UNDERSTAND USAID BUREAU AND MISSION NEEDS FOR CC ADAPTATION TOOLS | P. SCHULTZ / J. FRANKEL-REED | | |
| MAINTAIN GCC OFFICE HELP DESK | P. SCHULTZ / J. FRANKEL-REED | | |
| UNDP ALM WEBSITE | C. MACK / A. MERSHON | | |
| | R. MISCHJE JOHN / J. FRANKEL-REED | | |
| ACTIVITY 1.3: TECHNICAL ASSISTANCE AND CAPACITY BUILDING SUPPORT | | | |
| PROVIDE CAPACITY BUILDING SUPPORT ON MAINSTREAMING V&A | G. ANDERSON / A. MERSHON | | |
| SUPPORT DEVELOPMENT OF USAID'S FEDERAL AGENCY CLIMATE CHANGE PLAN | JOANNE POTTER / N. FERM | | |
| PROVIDE SUPPORT FOR USAID INTEGRATION PILOT IN KAZAKHSTAN | G. ANDERSON / J. FRANKEL-REED | | |
| ACTIVITY 1.4: SUPPORT FOR GENDER DEVELOPMENT | | | |
| TECHNICAL ASSISTANCE TO THE OFFICE OF GENDER EQUALITY AND WOMEN'S EMPOWERMENT | IRI / NATALIE ELWELL & A. MERSHON | | |
| ACTIVITY 2.1/2.2: ADAPTATION PARTNERSHIP | P. SCHULTZ | 2.2: ADAPTATION PARTNERSHIP CoP | R. MISCHJE JOHN |
| 2.1: ADAPTATION PARTNERSHIP | R. MISCHJE JOHN | FACILITATE ADAPTATION PARTNERSHIP CoP | R. MISCHJE JOHN |
| CONDUCT ADAPTATION PARTNERSHIP WORKSHOPS | R. MISCHJE JOHN | DEVELOP AP MATERIALS | D. TEPLEY / N. FERM |
| CLIMATE CHANGE AND SECURITY WORKSHOP | R. MISCHJE JOHN | | |

J. FRANKEL-REED

| | | | |
|--|--|--|--|
| ACTIVITY 3.1: CLIMATE RESILIENT PROGRAM DESIGN | | | |
| SUPPORT PREPARATION OF NATIONAL ADAPTATION PLANS (NAPS) | P. SCHULTZ | | |
| DEVELOP AND PILOT FAST TRACK IMPLEMENTATION CONCEPT | Y. KIM | | |
| | P. SCHULTZ | | |
| ACTIVITY 3.2: HIGH MOUNTAIN AND GLACIAL WATERSHED PROGRAM | | | |
| 3.2: HIGH MOUNTAIN AND GLACIAL WATERSHEDS | G. ANDERSON | | |
| DEVELOP THE GLOBAL HIGH MOUNTAIN GLACIAL LAKE PARTNERSHIP CoP | MEGHAN HARTMAN | | |
| DESIGN AND CONDUCT THE CLIMBER-SCIENTIST SMALL GRANT COMPETITION | CoP SECRETARIAT / THE MOUNTAIN INSTITUTE / THE UNIVERSITY OF TEXAS AT AUSTIN | | |
| ESTABLISH THE CLIMBER-SCIENTIST SMALL GRANTS COMPETITION | CoP SECRETARIAT - TMI/UT | | |
| IMPLEMENT CoP PILOT PROJECTS AND RESEARCH | TMI/UT | | |
| NEPAL RECONNAISSANCE | TMI/UT | | |
| PERU RISK PERCEPTION ASSESSMENT | TMI/UT | | |
| CoP WORKSHOP PLANNING | TMI/UT | | |
| PREPARATION OF MAINSTREAMING PAPER | M. HARTMAN | | |
| ACTIVITY 3.3: CLIMATE SERVICES PARTNERSHIP | | | |
| 3.3: CLIMATE SERVICES | G. ANDERSON | | |
| COORDINATE ACTIVITIES OF THE CLIMATE SERVICES PARTNERSHIP | FERNANDA ZERMOGLIO | | |
| COMPILE AND DISSEMINATE CURRENT CLIMATE SERVICES KNOWLEDGE | S. ZEBIAK | | |
| CONDUCT CASE STUDIES AND ASSESSMENTS OF CLIMATE SERVICES | INTERNATIONAL RESEARCH INSTITUTE FOR CLIMATE AND SOCIETY STAFF | | |
| ECONOMIC VALUATION OF CLIMATE SERVICES | IRI STAFF | | |
| CLIMATE INFORMATION GUIDE BOOK | G. ANDERSON | | |
| PILOT NATIONAL-LEVEL CLIMATE SERVICES ANALYSIS | IRI STAFF | | |
| DEVELOP CLIMATE SERVICES PRODUCT FOR AGRICULTURAL SECTOR | S. ZEBIAK/IRI | | |
| CLIMATE SERVICES TECHNICAL BACKSTOPPING OF DEVELOPMENT PROGRAM | S. ZEBIAK/IRI | | |
| ACTIVITY 3.4: CLIMATE-RESILIENT INFRASTRUCTURE SERVICES PROGRAM | | | |
| IDENTIFICATION OF PILOT CITIES | P. SCHULTZ | | |
| PROVIDE CRUS SUPPORT TO PILOT CITIES TO ACCELERATE CLIMATE RISK MANAGEMENT | J. POTTER | | |
| DESIGN AND IMPLEMENT A SMALL GRANTS PROGRAM TO SUPPORT LOCAL FAST TRACK IMPLEMENTATION | J. POTTER | | |
| FACILITATE GLOBAL CITY-TO-CITY INFORMATION EXCHANGE TO MULTIPLY SUCCESSFUL CLIMATE RISK MANAGEMENT | J. POTTER | | |
| EVALUATE CRIS ACTIVATES AND RECOMMEND NEXT STEPS | J. POTTER | | |

J. FURLOW

N. FERM

TASK PM-2: UPDATE AND IMPLEMENT PERFORMANCE MANAGEMENT PLAN (PMP)

The Performance Management Plan is an important tool for assessing and reporting progress in achieving the goals of the Task Order, and was developed in parallel with the Year One Work Plan to ensure that implementation milestones and targets were articulated and incorporated into the PMP. The PMP will be revised to ensure that it adequately provides for the monitoring and evaluation of all tasks and sub-tasks included in the Year Two Work Plan.

The updates to the PMP will include qualitative analyses that indicate the effect our activities are having in relation to the intended goals of each CCRD task as well as in relation to the broader needs that go beyond the scope or timescale of CCRD.

| Task PM-2 Summary | |
|-------------------|--|
| Task Lead: | Glen Anderson |
| Schedule: | Update prepared and submitted with draft Year Two Work Plan; reporting on a quarterly basis (aligned to fiscal year) |
| Milestones: | Revised PMP submitted; additional mid-year updates prepared as needed; PMP reports prepared (quarterly) |
| Deliverables: | <ul style="list-style-type: none"> • PMP revision for Year Two • PMP updates • Quarterly and Annual PMP reports |

TASK PM-3: STRATEGIC & IMPLEMENTATION PLANNING

As opportunities for new initiatives, activities and tasks arise, CCRD will form a committee to work on a concept note, convene strategic planning discussions with USAID, and develop scopes of work for new activities as needed. In Year One, ICF and the International Research Institute for Climate and Society (IRI) developed concept papers on opportunities for collaboration between CCRD and the Global Health Bureau on climate adaptation and health. For Year Two, one additional concept paper is planned that focuses on urban infrastructure

| Task PM-3 Summary | |
|-------------------|--|
| Task Leads: | Glen Anderson, Peter Schultz |
| Schedule: | Concept papers on urban infrastructure (September 2012) |
| Milestones: | Submission of concept paper(s) to USAID |
| Deliverables: | <ul style="list-style-type: none"> • Concept paper(s) on urban infrastructure |

TASK PM-4: CONDUCT ADVISORY COMMITTEE MEETINGS

Key personnel and senior advisors will meet on a quarterly basis and as needed to provide input to help guide the project's future directions, address implementation issues, and/or respond to new requests from USAID. All of these meetings each year will be face-to-face and are tentatively scheduled for October, January, April, and June/July. The participants in these meetings will include:

- Key Personnel: Glen Anderson, COP; Peter Schultz, DCOP; and Bob Raucher, Senior Water and Climate Specialist

- Advisory Committee: Yoon Kim, IRG; Anne Choate, ICF; Joel Smith, Stratus Consulting; Steve Zebiak, International Research Institute for Climate and Society; and Jessica Troell, Environmental Law Institute (ELI)

IRG will inform the COR and GCC Office staff of the proposed topics to be discussed during each meeting and invite USAID to participate if there is interest.

| Task PM-4 Summary | |
|--------------------------|---|
| Task Lead: | Glen Anderson, Peter Schultz |
| Schedule: | Quarterly (October 2012, January 2013, April 2013, June/July 2013) |
| Milestones: | Meetings convened and summaries prepared |
| Deliverables: | <ul style="list-style-type: none"> • Meeting presentations • Summaries of advisory committee meetings |

TASK PM-5: REPORTING

IRG will prepare quarterly and annual reports to summarize implementation progress and project expenditures incurred during the reporting period. Per agreement with the COR, these reports will be aligned with USAID’s fiscal year rather than the project year.. All reports will be submitted electronically to the COR by the tenth business day following the end of the reporting period. Quarterly progress reports will summarize progress towards accomplishment of the benchmarks, expected outcomes, and objectives of the Statement of Work.

The quarterly reports will: (1) give an update of progress made towards fulfillment of the project’s results; (2) identify implementation issues, obstacles encountered, and possible delays, if any, in fulfillment of activities included in the Work Plan and/or achievement of targets set forth in the PMP; (3) set forth proposed changes, if any, to the Work Plan; and (4) contain a forecast of activities for the quarterly period immediately following the period being reported.

Quarterly financial reports will contain a breakdown of project expenditures by CLIN. PMP reports and Grants Under Contract (GUC) Program reports will be appended to Quarterly Reports. The Annual Report will be prepared in lieu of a 4th Quarter Progress Report, but will address the four points described in the paragraph above.

| Task PM-5 Summary | |
|--------------------------|--|
| Task Lead: | Glen Anderson, Deborah Tepley (Operations Specialist), IRG |
| Schedule: | Ongoing on a quarterly basis, aligned to USAID’s fiscal year |
| Milestones: | Quarterly and annual reports prepared and submitted |
| Deliverables: | <ul style="list-style-type: none"> • Quarterly Progress Reports • Quarterly Financial Reports • Annual Report |

TASK PM-6: DEVELOP & DISSEMINATE CCRD KNOWLEDGE MANAGEMENT (KM) PRODUCTS

Knowledge sharing and effective communication between CCRD and the USAID GCC Office is integral to the success of the project. Equally important is effective and efficient knowledge-sharing and communication between the wider USAID community, other USG partners, development practitioners, policymakers, and community stakeholders to support climate change adaptation and secure better development results. In Year

One, CCRD developed a Communications Plan, redesigned the Adaptation Partnership website, designed interactive sites for the High Mountain Glacial Watershed Partnership Community of Practice (CoP) and the Climate Services Partnership CoP, began work on the Adaptation Learning Mechanism website redesign, and developed a design for the CCRD website.

The Central focus of CCRD is to support Missions and development practitioners as they address climate concerns in their development programs and projects. CCRD does this through development of guidance and tools, training, and workshops. The second project objective is the promotion of innovations in mainstreaming of climate change adaptation to USAID and other USG audiences. The third project objective is identifying and responding to emerging climate change issues and providing assistance to USAID staff during the design, planning, and implementation of climate resilient development programming.

| What? | Who? |
|---|--------------|
| Mainstreaming climate change guidance | USAID staff |
| Innovations in mainstreaming of climate adaptation | USG agencies |
| Climate resilient development programming information | USAID staff |

Knowledge management (KM) activities and products will be developed and implemented to support each of the three project objectives, and will be designed following four main principles:

- **Necessary/Demand Driven:** The CCRD KM activities should provide resources/activities/knowledge based on the needs of the target audience.
- **Accessible:** The CCRD KM activities should be accessible on a just-in-time basis.
- **Authoritative, Definitive, and Relevant:** The CCRD KM activities should provide comprehensive information and knowledge that is relevant to USAID staff.
- **Inclusive:** The CCRD KM activities should accommodate participation by all target audience members and ensure that it reflects the contributions of audience members.

The CCRD project website will provide the technical platform on which knowledge products and activities will be hosted, and will be complimented by outreach and engagement efforts in order to connect with new audiences and partners, and publicize project products and research. Online tools such as webinars, speaker’s corners, and discussion forums will be used to share information about CCRD’s work as well as to engage the adaptation community in sharing information and experiences. Additionally, some suggested activities and products will be delivered via third party applications that are integrated into the website, such as AdobeConnect, online survey, and email newsletter software.

Since a major focus of the project is the development of general and sector-specific mainstreaming climate change guidance, and building Mission and Bureau capacity to implement the guidance through training, tools, and technical assistance, the CCRD website will focus on the following:

- Disseminate information to a broad, geographically diverse audience
- Facilitate collaboration and peer-to-peer learning between USAID colleagues
- Capture good practices, lessons learned, tools, templates, and experiences
- Provide a “feedback” loop as the guidance is adopted and applied
- Provide a platform that can facilitate focused, thematic group collaboration

- Support continuous learning and supplemental training activities
- Link key adaptation resources and activities being developed across USAID
- Ensure responsiveness to audience needs

Additional KM support will be provided through the Adaption Learning Mechanism (ALM) website, and the Adaptation Partnership website and Communities of Practice. All three activities, ALM, AP and AP CoPs, will provide opportunities to exchange information and knowledge with practitioners from the broader climate change adaptation community and leverage the KM efforts of partner organizations, academic institutions, and project stakeholders. Activities include:

- Review and upgrade ALM website to improve functionality and usability and narrow the site's focus on the activities with the most value-added
- Contribute new content to ALM and incorporate the information on the site into USAID GCC trainings
- Continue to support Communities of Practice by providing strategic guidance and facilitation support through the CoP websites

The suite of KM tools and activities listed below will be implemented based on the specific objective of a project task or sub-task, and will be tailored to meet the needs of that specific target audience. These activities can be hosted on the CCRD website, AP CoPs, and/or ALM. The tools and activities may include:

- **Working Groups, Learning Networks and/or Communities of Practice:** The website can support thematic, sector, region, and country groups and facilitate tailored knowledge generation and sharing. Working groups can be formed around a specific, time-bound goal, such as the drafting of guidance or policy; Learning Networks can be formed to facilitate continuous learning and exchange between a training cohort or staff sub-set (e.g. DLIs); CoPs can be formed to facilitate collaboration, exchange, and problem solving between practitioners working in on a specific issue.
- **Expanded/alternative modes of training delivery and capacity building:** Classroom and in-person training is limited in terms of the number of people it can reach and the amount of information that can be conveyed. The CCRD website can supplement and expand instructor-led deliveries through online products and activities that will be developed to complement all of our sector-specific guidance and annexes:
 - a. Online audio slideshows – prerequisites, updaters modules, overview modules, etc.
 - b. Webinars – instructor-led, virtual training sessions
 - c. Office Hours – instructor-led training can be supported by follow-up sessions with small and medium-sized enterprises (SMEs) during which participants can pose questions about implementation of knowledge learned
- **Online collaboration technologies and activities:** The website will be built to support a variety of collaboration and communication activities, which can be used to facilitate peer-to-peer interaction, push information to site members, provide on-demand answers and information, and discuss and debate new or evolving topics and issues:
 - a. Online discussions – Time-bound, asynchronous online discussions moderated by an SME and focused on a specific issue or topic
 - b. Blog – Personal, informal, subjective, and critical. Blogs are an avenue for experts or those with a specific point of view to provide commentary on a topic or issue. Blogs can be used

effectively to tease out or elevate an issue/topic that may have been broached, but not fully explored, elsewhere (e.g. during a training course or an online discussion)

- c. Help/advisory service – Provide support to site members looking for specific information; service will facilitate information/knowledge sharing and generation. Needs to be facilitated by a “librarian” who can effectively direct advisee to appropriate resources and SMEs who can provide answers.
 - d. Frequently Asked Questions – Collection of curated questions and answers organized by topic/issues and generalized for all site users. FAQs can be categorized as needed (topic, sector, region, etc.) and should be constantly updated and revised
- **Knowledge products and engagement/outreach activities**
 - a. Email Newsletter
 - b. Calls to action – Solicit members to submit case studies or templates to be posted online, highlighted in the newsletter, or incorporated into training
 - c. Podcasts, audio screencasts, videos – Capture live presentations, record expert interviews, etc.
 - d. Media placement
 - e. Social media (Twitter, Facebook)
 - **In-person events: Seminars, workshops, brown bag sessions, etc.:**
 - a. Identify opportunities to incorporate information about CCRD KM services/activities in relevant trainings, workshops, etc.
 - b. Identify opportunities for CCRD to host brown bag/information sessions on project activities and/or opportunities for CCRD to present project activities at other events. These events should be assessed for capture opportunities – recording presentation, event summaries and report-outs, interviews with presenters, etc. IRG currently hosts bi-monthly Community Adaptation meetings. Community Adaptation Meetings bring together the DC-based adaptation community to present and discuss projects and issues, and share experiences related to climate change adaptation. The meetings are open to anyone interested in adaptation work in the developing world, including NGOs, contractors, and academics.

| Task PM-6 Summary | |
|--------------------------|---|
| Task Lead: | • Rosamund Mische John, IRG: Communications, outreach, and KM product dissemination |
| Schedule: | Continuous |
| Milestones: | CCRD KM products drafted, reviewed by USAID, and disseminated |
| Deliverables: | • Communications, outreach and KM products |

TASK PM-7: IMPLEMENT GRANTS UNDER CONTRACT PROGRAM

In Year One, CCRD developed the Grants Under Contract Manual and initiated two small grant solicitations: the climber-scientist grants to support the High Mountain Glacial Watershed Program (HMGWP) (Component 3.2) and small grants to support capacity building in Central America related to climate change and agriculture. The climber-scientist grants were reviewed and awarded in Year One, while the Central America grants will be reviewed and awarded in the first quarter of Year Two.

In Year Two, IRG will manage Year One small grant implementation and develop new small grant solicitations. As described in the CCRD Small Grants Manual, the project cycle for each solicitation involves the preparation and issuance of requests for applications (RFAs), review and selection of small grant

proposals, and award, implementation, monitoring and evaluation of small grants. Ms. Lana Lightle, CCRD Small Grants Manager, will coordinate the preparation and solicitation of RFAs, compile small grant applications, and organize the review of proposals by the technical review panel. A selection meeting will be convened to discuss applications and recommend award. A decision memo and all supporting material will be submitted to the COR for his approval. Upon COR consent and clearance, IRG will negotiate grant agreements with recipients, supervise and monitor grants, and review recipients' final report and all deliverables specified in the grant agreement. As part of the quarterly and annual reports, IRG will provide a summary of GUC activities during the reporting period.

A number of ideas for Year Two small grant solicitations have been discussed with USAID and CCRD partners. These include:

1. Research on climate change topics related to vulnerability and impacts and adaptation assessment
2. NGO grants to test mainstreaming guidance, initiated with training and side-by-side mentoring prior to the solicitation, with follow-on workshop to discuss implementation results; write-shops to propose pilots of the V&A guidance (this may include grants to support Peace Corps communities in selected developing countries)
3. Grants to build on Climate Services Partnership (CSP) case studies and deepen the analysis of the effectiveness and benefits of climate services in developing countries
4. Grants to support initiation of new climate service products
5. Scholarships for developing country students to prepare studies, papers, etc. This could also include supporting master's students with internship funding and/or conducting master's projects/studies
6. Grants to support adaptation innovations

| Task PM-7 Summary | |
|--------------------------|--|
| Task Lead: | Lana Lightle, IRG (Grants Manager) |
| Schedule: | Rolling – solicitations organized on an as-needed basis |
| Milestones: | RFAs issued; selection meetings convened; small grants awarded, implemented, and completed |
| Deliverables: | <ul style="list-style-type: none"> • RFA solicitations • Decision Memos • Small Grant deliverables and reports • Inputs to CCRD quarterly and annual reports |

OBJECTIVE 1: SUPPORT FOR USAID MISSIONS AND BUREAUS

In support of Objective 1, CCRD will develop guidance on mainstreaming and will identify, develop, and/or tailor tools to enable USAID Missions and Bureaus to more effectively plan, design, and implement climate resilient development programs and access project tools. In addition, CCRD will respond to requests from USAID Bureaus and Missions to provide technical assistance related to assessment of climate impacts and vulnerability, support prioritization activities, and help build staff and partner organizational and technical capacity in all facets of climate resilient program and project planning, design, and implementation. Tasks to support Objective 1 are organized under three activities: guidance, information, tools, science and technology, and technical assistance and capacity building support.

ACTIVITY 1.1 GUIDANCE, PILOTS, AND RESEARCH

The USAID GCC Office has pioneered climate adaptation guidance featuring the vulnerability and adaptation approach. Guidance manuals were prepared in 2007 (general V&A guidance focused on project-level adaptation) and 2009 (V&A guidance tailored to coastal climate concerns). In Year One, CCRD revised the V&A guidance to emphasize mainstreaming of climate concerns into development planning at multiple scales, with emphasis on development of new strategies, plans, or projects. In addition, a water and climate annex was prepared and additional annexes were drafted. In Year Two, CCRD will develop a companion guidance document focused on applying the mainstreaming approach to existing strategies, plans, and projects. Also, the three annexes in draft will be revised based on comments from USAID, CCRD staff, and outside reviewers.

TASK 1.1.1: DEVELOP ADDITIONAL MAINSTREAMING GUIDANCE

Year One Progress and Results: The mainstreaming guidance for new strategies, plans, and projects will be completed (along with companion guidance for USAID development planners prepared by USAID GCC Office). Some supporting material, including a technical appendix on vulnerability assessments and practical how-to checklists, will be included in the binder with the guidance and annexes.

Year Two: There will be four priorities for work related to the mainstreaming guidance:

1. Finalize the mainstreaming guidance. The GCC Office has sent the draft guidance and an outline of the technical vulnerability appendix to reviewers in E3 and Regional Bureaus. Once comments are received, CCRD will revise the guidance to reflect comments and submit to USAID for final review.
2. Prepare draft and final versions of the technical vulnerability appendix. Once CCRD receives comments on the outline, a first draft will be prepared for GCC Office review and revised.
3. KM on the new guidance. We will disseminate guidance awareness and KM products, identify opportunities to organize sessions at international workshops, prepare short papers and/or journal articles, and develop outreach materials on the guidance. With the GCC Office's support, we will explore the opportunity to host a workshop to discuss mainstreaming methodology and practice with other donors and international practitioners.
4. V&A 201 training/workshops. The purpose of this effort would be to develop a more advanced version of the Agency's adaptation course for practitioners. CCRD will be looking for opportunities for training/workshops and field testing of the mainstreaming guidance and may link field testing to a small grant solicitation.

| Task I.1.1 Summary | |
|--------------------|--|
| Task Lead: | <ul style="list-style-type: none"> • Yoon Kim, IRG |
| Schedule: | August - December 2012 |
| Milestones: | <ul style="list-style-type: none"> • KM products drafted, finalized and disseminated; proposals for workshops sessions prepared and submitted; concept for international mainstreaming workshop developed • V&A training course developed and tested • V&A workshops organized and convened |
| Deliverables: | <ul style="list-style-type: none"> • KM materials including journal articles • Session proposals • Workshop proposal • V&A training/workshop materials |

TASK I.1.2: DEVELOP CLIMATE GUIDANCE BRIEFS AND ANNEXES

Year One Progress and Results: The Water, Sanitation, and Hygiene (WASH) and Health Climate Guidance Briefs were completed. These briefs were prepared by USAID and CCRD is reviewing them, adding a section on climate services and preparing production versions. The Water Annex and 10 Water Adaptation Actions will be drafted and distributed to USAID reviewers. The coastal/marine, governance, and differential vulnerable annexes will be under development. The Infrastructure Factsheets will be completed and electronic and print copies produced.

Year Two: CCRD will revise and finalize the Water Annex, and prepare draft and final versions of the three annexes that were under development in Year One: coastal/marine issues, differential vulnerability, and governance.

A number of topics for additional annexes were identified during the work planning process. The process for making a final decision on annexes will be based on consultations by the COR and GCC Office staff with other Bureaus and Missions to assess demand in topics. However, to guide these consultations, the following tentative schedule for the preparation of annexes was elaborated by CCRD and USAID:

- Low emission development strategies and security/conflict (in coordination with the Africa Bureau)- these would be drafted and finalized in Year Two
- Urban/infrastructure, Risk Management (including Disaster Risk Reduction – DRR), Health, Project design and management guidance, including financing and monitoring and evaluation (M&E) – These would be started in Year Two and completed in the first option year
- Agriculture/Food Security, Energy, Economic Growth and Trade, and Tourism – These would be started in the first option year and completed by the end of the second option year.

| Task I.1.2 Summary | |
|--------------------|---|
| Task Leads: | <ul style="list-style-type: none"> • Water Annex – Bob Raucher, Stratus Consulting • Coastal and marine Annex – Yoon Kim, IRG • Differential vulnerability Annex – Rosamund Mische John, IRG • Governance Annex – Jessica Troell, ELI • New annexes – TBD |
| Schedule: | August 2012 – January 2013 |
| Milestones: | Outlines prepared and vetted; external meeting convened to review draft guidance briefs and annexes, guidance briefs and annexes revised and prepared in publication quality versions |
| Deliverables: | <ul style="list-style-type: none"> • Outlines for guidance briefs and annexes • Final version of the Water Annex • Draft and final versions of the Coastal and Marine Annex, the Differential Vulnerability Annex, and the Governance Annex • Summary of external meetings to review guidance briefs and annexes • Publication quality versions of the guidance briefs and annexes |

TASK I.1.3: DEVELOP LESSONS LEARNED ON MAINSTREAMING CLIMATE ADAPTATION

Year One Progress and Results: Lessons learned on infrastructure and climate change was drafted in Year One. This report was a pilot to help CCRD and USAID review one possible template for future lessons learned reports.

Year Two: CCRD will review comments on the infrastructure and climate change lessons learned report, and revise and finalize the report. CCRD will develop a template for future lessons learned reports. CCRD management will review ideas for lessons learned and good practices papers from CCRD partners and propose to COR and DCOR. Some ideas for papers include risks management, financing, mainstreaming climate into CDCSs, and private sector good practices and lessons learned.

| Task I.1.3 | |
|---------------|--|
| Task Lead: | <ul style="list-style-type: none"> • Lessons Learned reports – CCRD staff and consultants |
| Schedule: | Year Two |
| Milestones: | Lessons Learned proposals reviewed; Lessons Learned reports drafted, reviewed and revised |
| Deliverables: | <ul style="list-style-type: none"> • Final version of the infrastructure and climate change Lessons Learned report • Draft and final Lessons Learned reports |

TASK I.1.4: PREPARE CASE STUDIES TO DEMONSTRATE THE MAINSTREAMING GUIDANCE

Year One Progress and Results: The Philippines WASH and water security case study in Iloilo began in July 2012 with meetings in Manila with USAID and Philippine national level counterparts. The team will conduct fieldwork in Iloilo, including production of one or two videos.

Year Two: The Philippines WASH case study will be completed in the second quarter of Year Two along with one or two videos. Priority will be given to new case studies that support the mainstreaming guidance, climate guidance briefs, and annexes. During the work planning process, there was strong support for case studies to accompany the Health and DRR Climate Guidance Briefs, as well as for infrastructure. In addition,

there was interest in private sector adaptation. Case studies should also focus attention on cross-cutting issues of differential vulnerability and governance wherever appropriate. Proposals for new case studies will be prepared and provide a description of the case, linkages to USAID guidance, and context for and benefits of the case. Decisions on new case studies will be taken in consultation with the COR and GCC Office.

| Task 1.1.4 Summary | |
|--------------------|--|
| Task Leads: | <ul style="list-style-type: none"> WASH – Jessica Troell (ELI) and Joel Smith (Stratus Consulting) New case studies – TBD |
| Schedule: | Year Two |
| Milestones: | Case study proposals prepared, vetted and selected; case studies conducted; draft case study reports prepared, presented to local partners; final version prepared in response to comments from local partners, COR, GCC Office, and other USAID |
| Deliverables: | <ul style="list-style-type: none"> Draft and final Philippines WASH case study Proposals for new case studies Draft and final versions of new case studies |

TASK 1.1.5: NEW DIRECTIONS IN PILOTS AND RESEARCH

In the Roadmap for Implementation in the USAID Climate Change & Development Strategy, two of the critical steps suggested to promote integrated approaches are pilots and climate change and development research. In support of pilots, USAID has conducted a competitive process among field missions to proposed integration pilots. In addition to the Strategy’s discussion of the importance of research, the RFTOP for CCRD identifies research to inform adaptation programming as one of the three priority areas including, illustratively, “background, white, or research papers.” Subtasks for pilots and research under CCRD are described below.

Subtask 1.1.5.1 Exploratory small grants and pilots to demonstrate the mainstreaming guidance

Small grant programs and pilots may be developed to support nascent CCRD program concepts or to explore implementation of existing activities or approaches (e.g., the V&A guide and the Vulnerability Assessment appendix). The impetus for a new small grant program or pilot may arise from a variety of sources including the papers described below (subtask 1.1.5.2) and the GCC team, among others. Small grant programs or pilots that are directly associated with a central CCRD program element (e.g., high mountains, urban, etc.) will be administered through that CCRD element, not this one.

In Year Two and beyond, an increasing emphasis will be placed on building from the work established in Year One, including the V&A guidance (and its annexes and appendices) as well as existing and newly developed training materials. In some cases, disbursement of small grant funding will be done incrementally through a process in which funding is contingent upon demonstrated use of CCRD’s approaches (e.g., guidance, training) in earlier stages of the grant project.

The inception of a new small grant program or pilot, or the extension of an existing one will generally include the following stages:

- Development of a brief concept note. The concept note will describe the purpose and scope of the activity, including linkage to CCRD’s objectives. Exploratory pilots are encouraged to draw on the breadth of experience across CCRD.
- Review / approval of the approach. The concept notes will generally be reviewed by the COP, DCOP, and one member of the GCC team. In some cases, CCRD member(s) responsible for

generating the note may be asked to make revisions and to resubmit in order to better meet USAID’s needs.

- Implementation of the small grant program or pilot.
 - In the case of a pilot program, the developer(s) of the concept note will typically be responsible for managing execution of the pilot. Care should be taken during the course of the pilot to document the approach and its effectiveness, including factors that contributed to or detracted from the success, and ways in which subsequent pilots could be improved. A draft report will be submitted to the COP/DCOP shortly after completion of the pilot.
 - Stages in a small grant program will include:
 - Development of the solicitation. Technical descriptions will be developed by the individual(s) responsible for the concept note. Lana Lightle will be responsible for translating the technical input into a draft solicitation. The draft will be reviewed by a GCC team member and revised as necessary.
 - Issuance of the solicitation. Ms. Lightle will be responsible for issuance of the solicitation through appropriate outlets and receiving and administratively processing the proposals.
 - Review of proposals. The aforementioned technical lead(s), the COP and/or DCOP, and a GCC team member will be responsible for review of the proposals and making recommendations to the co-CORs for approval.
 - Administration of the grants. Ms. Lightle will be responsible for most aspects of grant administration, including funding disbursements and routine reporting.

| Task 1.1.5.1 Summary | |
|-----------------------------|--|
| Task Leads: | Peter Schultz, Lana Lightle |
| Schedule: | TBD |
| Milestones: | Concept notes submitted; funding disbursed; report drafted, revised, finalized |
| Deliverables: | <ul style="list-style-type: none"> • Concept notes • Final reports |

Subtask 1.1.5.2 Prepare background, white, and research papers

Background, white, and research papers describing a range of concepts will help to serve as an idea generation “engine” for nearly all technical aspects of CCRD. These papers could:

- *Describe innovative approaches that may be explored further within CCRD.* These papers would describe the context, proposed methodology, and potential payoffs from the new line of pursuit.
- *Articulate ideas or concepts that have the potential to expand knowledge* of the climate adaptation community. Although these papers may involve some research, they should be practically oriented and may also include descriptions of new methodologies or approaches.

The papers may accomplish both of these objectives. The development of background, white, and research papers will be both demand- and supply-driven. CCRD will respond to requests from USAID for papers, determine appropriate authors, and provide a proposal covering authors, terms of reference, level of effort, and timeline.

Second, members of the CCRD consortium will be able to propose topics for background, white, and research papers. CCRD will provide guidance for the preparation of proposals, criteria that will be used in screening proposals, and information on the selection process covering the initial review by the CCRD management team, feedback on the proposals (especially if revisions would strengthen the proposals), followed by decision for the COR, Deputy COR, and other GCC Office staff asked on an as needed basis to review the proposals by the COR and Deputy COR.

1. The following process will be used to solicit ideas and to initiate work on papers. Submit rough ideas (~1 paragraph). Solicitation of brief, one-paragraph descriptions of ideas from all CCRD team members three times per year. ICF manages initial evaluation and forwards recommendations to COP and USAID for approval.
2. Write the papers; review the papers; discuss next steps. CCRD partners will write the approved papers. If applicable, writers will be paired with a USAID-counterpart, who will review their paper at various stages of preparation. Final papers will be reviewed by the core team and others identified by the core team. Following this review, the core group will discuss next steps, including the potential for implementation of the paper's concepts into CCRD's work program and/or other uses.

At a minimum, prospectuses will include a problem statement, objective(s) of the paper, anticipated benefits to USAID of the paper, an annotated outline, list of authors, timeline, and level of effort requested to complete the work. All papers should anticipate three reviews: internal review by CCRD staff of the first draft, review of second draft by CCRD and USAID, and review of final draft by CCRD and USAID.

In some cases the prospectuses or papers may lead to pilots, workshops, grant solicitations, or other activities. Funding for follow-on work will be covered by other parts of the program.

Illustrative topics for these papers include the following:

- Climate adaptation financing
- Climate resilient LEDS
- Assessing vulnerability of energy systems to climate change
- Fast-track implementation
- Vulnerability and risk assessment tools
- Climate information for data sparse regions
- Supporting decision-maker-led climate services
- Using GIS in the V&A process
- Vulnerability and risk assessment tools
- Measuring and accounting for co-benefits of adaptation
- Methods for evaluating adaptations and conducting cross-comparisons between adaptations and development policies
- Incorporating adaptation into agricultural extension services
- Tackling implementation constraints
- Identifying damage functions to facilitate risk assessment
- Planning for climate resilient post-disaster reconstruction
- Use of new media for climate change adaptation
- Competitions for adaptation innovations
- Conflict resolution as an adaptation component

- Private sector investments to promote adaptation
- Ecological production functions for the quantification and valuation of ecosystem services
- Ecosystem-based approaches for managing climate risks
- Impact of climate change on worker health and productivity
- Assessing costs and effectiveness of adaptation options at the project level
- Accounting for socio-economic drivers in understanding the context for climate vulnerability
- Using the Demographic Health Surveys for climate resilient development

| Task I.1.5.2 Summary | |
|-----------------------------|--|
| Task Lead: | Peter Schultz |
| Schedule: | <ul style="list-style-type: none"> • Round #1: <ul style="list-style-type: none"> ○ Solicitation for paper concepts issued (November 5, 2012) ○ Submission of one-paragraph concepts (November 19, 2012) ○ Papers solicited (December 21, 2012) ○ Papers submitted and reviewed (rolling: January-March, 2013) • Round #2: <ul style="list-style-type: none"> ○ Solicitation for paper concepts issued (March 2013) ○ Submission of one-paragraph concepts (March 2013) ○ Papers solicited (April 2013) ○ Papers submitted and reviewed (rolling: May-July 2013) • Round #3 (Year 3): <ul style="list-style-type: none"> ○ Solicitation for paper concepts issued (July 2013) ○ Submission of one-paragraph concepts (July 2013) |
| Milestones: | Brief concept statements submitted; prospectuses submitted; papers drafted, revised, and finalized |
| Deliverables: | <ul style="list-style-type: none"> • Background, white, and research papers |

TASK I.1.6: WORKSHOPS

As the body of work from CCRD grows, there is an increasing need to effectively communicate this knowledge. Workshops can help to serve this purpose. They can also provide a better understanding of needs and demand to help shape future work by CCRD. There are a number of other reasons to undertake a series of workshops in Year Two and beyond, as outlined in the illustrative examples below. Each workshop should result in a report that articulates the state of knowledge and, in most cases, that outlines potential future areas of pursuit. Decisions on which if any of these workshops to pursue will be made by the GCC team through consultations with CCRD’s leadership.

USAID Adaptation Workshop. The purpose of this type of workshop is to promote knowledge-sharing and coordination on climate adaptation across the entire Agency (or parts of the Agency). There is an enormous potential to increase the effectiveness of the Agency’s climate adaptation work through in-person cross-fertilization of ideas among Agency Bureau and Mission staff and implementers. This workshop could also be a major opportunity for “listening” sessions so that CCRD could understand needs from the field. In addition, CCRD’s primary products could be featured at the workshop, with discussion of their potential for broad implementation. If successful, this type of workshop could be periodically repeated. Participants may include USAID staff and consultants from USAID’s projects and activities in the pillar Bureaus, regional Bureaus and Missions, and bilateral Missions.

Grantee Workshops. The purpose of such workshops would be to promote knowledge-sharing among CCRD grantees, to help infuse the CCRD V&A approach into their work (as appropriate), and to inform future CCRD work. Workshops near the outset of each grant program would be helpful in promoting a knowledge-sharing community that can be tapped during the course of the grants. By convening workshops near the outset, we would also have the potential to help infuse aspects of the V&A approach into the grantee’s work. Workshops convened mid-course and near the end of the grants would be useful for sharing and synthesizing lessons learned and for indicating potential future courses of action by CCRD.

Thematic Workshops. The purpose of these workshops would be to explore particular themes of concern to CCRD that are being addressed both inside and outside USAID, to promote knowledge on these topics, and to articulate good practices in these areas. The rapid pace of work on adaptation both inside and outside USAID has brought about a proliferation of frameworks, approaches, and new ideas. In many cases, multiple frameworks are being applied in the same locations or for the same sectors. This includes a variety of approaches for vulnerability assessment, adaptation implementation, financing, M&E, etc. For example, USAID, the World Bank, DfID, and a large number of other funders have each developed their own vulnerability assessment approaches. This proliferation is breaking new ground; however, it is also a potential source of confusion for stakeholders and beneficiary governments. Workshops that are focused on key aspects of climate adaptation could help to promote sharing of ideas, resources, and best practices, and, in some cases, harmonization of efforts to promote convergent – rather than divergent – evolution.

Training Workshops. The purpose of these workshops would be to train Mission staff and existing and potential future implementers on a wide range of topics related to climate resilient development. In some cases, a “train the trainers” approach may be used, followed by a small grant process wherein the newly trained trainers can put to use the capability they have developed.

Attendance at Non-CCRD Workshops. There is a wide variety of workshops held each year on topics related to climate resilient development that do not fall neatly within CCRD’s main programs of work. Participation in some of these workshops could be beneficial to the GCC team by helping to promote awareness of CCRD’s activities and resources, by building partnerships, and by informing CCRD’s future work.

| Task 1.1.6 Summary | |
|--------------------|--|
| Task Leads: | TBD |
| Schedule: | TBD |
| Milestones: | Workshop concept note delivered; workshop approved; workshop agenda finalized; invitations extended; workshop event; workshop report delivered |
| Deliverables: | <ul style="list-style-type: none"> • Concept notes • Final reports |

ACTIVITY 1.2 INFORMATION, TOOLS, AND SCIENCE AND TECHNOLOGY

This activity focused on supporting adaptation assessment and planning capacity by understanding the needs that Bureaus and Missions have for tools to identify and address possible project vulnerabilities and risks posed by climate change impacts. It was initiated in Year One through two key tasks: (1) understanding

USAID Bureau and Mission needs for climate change adaptation tools and (2) maintaining the GCC Office’s help desk.

We define “climate tools” quite broadly as knowledge² products that can guide climate risk screening, assessment, and management at organizational levels ranging from individual projects to regional and sectoral programs to whole-agency planning. We define “toolkits” as aggregations of tools. These tools may be manifested in a range of media including print, websites, social media, training, and CDs, and they may include disciplines as diverse as (but not limited to) communication, physical climate, vulnerability assessment, climate impacts, risk management, M&E, decision analytics, financing, communicating/educating stakeholders, and governance.

TASK 1.2.1: UNDERSTAND USAID BUREAU AND MISSION NEEDS FOR CLIMATE CHANGE ADAPTATION TOOLS

Year One Progress and Results: Interviews with USAID staff in Washington were completed and a summary report on interviews prepared. A draft action plan was prepared on how CCRD can support Bureau and Mission staff in providing climate adaptation tools.

Year Two: No activities planned.

TASK 1.2.2: MAINTAIN THE GCC OFFICE HELP DESK

Year One Progress and Results: Models of Help Desk structures were surveyed.

Year Two: CCRD will prepare a Help Desk implementation plan that will describe organization of the Help Desk, process and protocol for reviewing requests, suggestions for a list of FAQs and other useful information for users of the Help Desk. In addition, the implementation plan will provide options for launching the Help Desk, including the use of a webinar/online discussion to announce the activation of the site and familiarize USAID staff with the process for submitting requests and obtaining information. Once the implementation plan is reviewed and revised, CCRD will organize the launch and set up Help Desk operations.

CONDUCT PREPARATORY WORK

In order to facilitate an efficient process, this activity will require a certain amount of preparatory work, including administrative activities and the development of a question response template, a CCRD Team matrix, and detailed response directions.

- CCRD will work with the GCC Office to understand existing Help Desk processes and requirements. Among other administrative activities, this will include setting up an efficient process for receiving inquiries submitted on the Help Desk and gaining access to any necessary internal systems.
- We will develop detailed triage and response directions, which will include instructions for the point person, respondent, and reviewer. The directions will provide recommendations for a general response framework, present examples, highlight certain instances when the GCC Office or Bureaus should be consulted, and include any other important information that might be needed.
- CCRD will develop a CCRD Team matrix. Using the decision and tool typologies described above we will develop a matrix of categories that capture the range of questions which may be asked through the Help Desk (e.g., sectoral, regional, types of information). We will then identify specific CCRD Team members that would be best suited to answer questions within each category (e.g.,

² Here, “knowledge” refers to the interpretation or characterization of raw or primary data and information.

general water sector-focused questions could be addressed to Robert Raucher, riverine ecosystem services to Elizabeth Strange, water and justice questions to Jessica Troell, etc.).

- Based on previous Help Desk responses, as well as response instructions, we will develop a question/response template. The template will likely include the following types of fields: *Inquiry Information*, including date submitted, name of submitter, position information, the inquiry, etc.; *Respondent Information*, including assigned CCRD Team member, date of request, response to inquiry, etc.; and *Reviewer Information*, including CCRD reviewer, GCC reviewer (if applicable), date received, date delivered, etc.

MAINTAINING THE HELP DESK

CCRD will maintain the help desk under the following guiding principles:

- Help Desk inquiries will be answered in a timely manner; responses will generally be provided within one day for routine questions. For more involved questions requiring staff research, CCRD will respond to the inquiry with an estimate of the time required to answer the question.
- The process used to maintain the Help Desk will be designed to be simple, efficient, and effective.
- Help Desk responses will: be answered by category-specific experts, provide the inquirer with accurate and appropriately comprehensive information, direct the inquirer to supplemental resources (as needed), and provide instructions for asking follow-up questions.
- A senior CCRD Team member will always review Help Desk responses and, as needed, consult a GCC Office member.
- Inquiries and responses will be tracked through SharePoint.
- Inquiries will be used to more thoroughly understand the needs of USAID Bureaus and Missions.

We tentatively propose the following general process. As inquiries are submitted to the GCC Office’s intranet Help Desk, a message will be automatically sent to a CCRD point person and a designated back-up. The point person will send a confirmation of receipt to the inquirer, provide an estimated response time, and, if needed, ask for more information. The point person will analyze the question and use CCRD member matrix to assign the question to the most appropriate CCRD Team member depending on the subject matter. The point person will also determine whether they are able to review the response or whether the response should be assigned to a different reviewer. The point person will then send a request to the identified respondent and, if needed, reviewer. At this time the point person will ask about availability and make adjustments to the assignments as needed. Once the request has been accepted, the respondent will provide a response within one to three days of receipt and pass the response on to the reviewer. The reviewer will assess the response, ensure all the necessary tracking information is present, and either provide feedback to the respondent or submit the response to the help desk. A more comprehensive and context-specific process will be developed as part of the preparatory work.

| Task 1.2.2 Summary | |
|--------------------|--|
| Task Lead: | CCRD Staff |
| Schedule: | Year Two |
| Milestones: | Implementation plan reviewed and revised; response instruction vetted by COR; CCRD Team matrix vetted by COR; question response template vetted by COR; fully functioning Help Desk |
| Deliverables: | <ul style="list-style-type: none"> • Draft and final implementation plan • Draft and final response instructions • Draft and final CCRD Team matrix • Draft and final question response template |

TASK 1.2.3: SUPPORT THE UNITED NATIONS DEVELOPMENT PROGRAMME ADAPTATION LEARNING MECHANISM WEBSITE

Year One Progress and Results: Conducted meetings with United Nations Development Programme (UNDP) and the UNDP’s website development vendor to discuss giving CCRD administrative privileges, and desired improvements for website. Obtained agreement from UNDP and USAID on a path forward for site redesign.

Year Two: CCRD will work with the UNDP website development vendor to redesign the site. CCRD will be given Administrative privileges to upload content to the ALM site, allowing USAID to more easily contribute material to the site. CCRD will also work with UNDP to prepare outreach material to popularize the ALM website.

| Task 1.2.3 Summary | |
|---------------------------|---|
| Task Lead: | Rosamund Mische John |
| Schedule: | August 2012 – July 2013 |
| Milestones: | ALM website upgraded; Content for ALM vetted by COR and GCC Office; Content uploaded to ALM website |
| Deliverables: | <ul style="list-style-type: none"> • Draft and final ALM site design • Draft and final ALM content • Report on ALM website upgrade |

ACTIVITY 1.3 TECHNICAL ASSISTANCE AND CAPACITY BUILDING SUPPORT

This activity includes tasks, as requested, to support USAID Bureaus, regional and bilateral Missions, and USG, non-governmental organization (NGO), research, and private sector partners in developing countries. Illustrative tasks that may be undertaken include preparation of background papers on priority vulnerabilities and adaptation options, vulnerability assessments, sector studies, analyses of existing USAID portfolios, side-by-side assistance to national and sub-national adaptation planning efforts, and training and other capacity building.

TASK 1.3.1: PROVIDE CAPACITY BUILDING SUPPORT ON MAINSTREAMING V&A

Strategic Objective 2 from the USAID Climate Change & Development Strategy is to “increase resilience of people, places, and livelihoods through investments in adaptation” (2012). A critical aspect of enhancing resilience to climate change and of achieving all three Intermediate Results under Strategic Objective 2 – to improve access to science and analysis for decision-making (2.1), establish effective governance systems (2.2), and identify and take actions that increase climate resilience (2.3) – is strengthening adaptive capacity. This in turn requires building the capacity of USAID as well as of developing country partners to better understand and address climate change impacts in support of climate resilient development.

Capacity has many dimensions, including personnel and financial resources, information, technology, and knowledge. Depending on the type of capacity that is being targeted, different types of activities are required. In Year Two, CCRD’s capacity building efforts will focus on improving knowledge through technical assistance, training, and other capacity building activities.

Subtask 1.3.1.1 Provide technical assistance to support implementation of the mainstreaming guidance and supporting briefs and annexes.

Year One Progress and Results: CCRD provided technical assistance to the USAID Mission in Benin as part of a TDY team to assess vulnerability of education infrastructure and identify options for addressing climate concerns.

Year Two: CCRD will respond to requests for capacity building and technical assistance support. Depending on demand, CCRD may provide technical assistance (TA) support to USAID Missions receiving 2012 integration pilot awards.

Also, depending on demand, CCRD will provide side-by-side mentoring of Bureau/Mission staffs on the application of the mainstreaming guidance to various plans, programs, and projects. Participants in these mentoring sessions would work with mentors on a variety of work products such as CDCS, program design, portfolio/project review; project/program start-up. CCRD will require some assistance from the GCC Office. This support would need to be tailored to Mission requests with assistance from the GCC Office.

Training modules may be developed for missions and partners (in coordination with the GCC Training Task Order. However, as the GCC Office is responsible for training Mission staff, CCRD would likely provide training to USAID Missions' partners. If there is demand, CCRD will develop web-based training modules to cover methodological issues such as identification of climate change risks.

Subtask 1.3.1.2 Design and implement training on the mainstreaming guidance and supporting briefs and annexes.

Training will complement a range of other activities undertaken under CCRD. For instance, it can be used to facilitate application of the new mainstreaming approach, strengthen the effectiveness of small grants, or enhance the sustainability of activities undertaken on emerging issues, including promoting fast track adaptation implementation.

CCRD has already begun to conduct training to support its existing activities. For instance, to complement the work under the High Mountain Glacial Watershed Program, CCRD has already conducted an adaptation training-of-trainers in Nepal, with another training planned in Peru for Year Two. As CCRD further develops its training component in Year Two, it will seek to build on existing training activities within USAID, with a focus on deepening adaptation-related knowledge in core project areas. In particular, it will coordinate with the Global Climate Change Training Project, which is tasked with providing foundational training to USAID staff to support all three Strategic Objectives in the Climate Change & Development Strategy.

Illustrative training topics include:

- V&A 201
- V&A 101 for Peace Corps
- Climate Resilient Development
- Developing National Adaptation Plans
- Climate Resilient, Low Emission Development
- Climate Financing
- Understanding and Using Climate Information
- Adaptation and Governance
- Adaptation and Water Resources
- Glacial Lakes and Adaptation to Climate Variability and Change
- Adaptation and Disaster Risk Reduction
- Adaptation and Coastal Zones
- Adaptation and the Urban Sector
- Adaptation and Health

Subtask 1.3.1.3 Niger and Burkina Faso Desk Study

Prepare a background research paper on V&A considerations for Niger and Burkina Faso.

As requested by USAID, CCRD prepared a background research paper on major vulnerability and adaptation considerations for Niger and Burkina Faso. This research is informing the ongoing Joint Planning Cell (JPC) process for the Sahel, through which USAID is developing strategies and programs to increase the resilience of poor populations in marginal agricultural and agropastoral zones in both countries.

The team prepared a summary of the existing literature to inform initial decision making and lay the groundwork for a longer and deeper analysis. Research was collected and summarized the climate change trends and projections relevant for Niger and Burkina Faso; described the key climate change vulnerabilities and adaptation challenges; identified national priorities; and presented and justified recommendations for sectors, key adaptation entry points, and actors that should be the focus of a more in-depth assessment process.

The desktop study included research on the following “sectors”: agriculture and food security; natural resources management; water and WASH; health and nutrition; disaster risk management (DRM); rural infrastructure; the application of existing infrastructure for climate and early warning information to the above sectors.

The study also considered the resources and inputs that are critical for these sectors and for the country’s development priorities. The analysis identified key actors working on climate change at the national, sub-national, and West Africa regional level (such as CILSS (Comité permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel), CCAFS, AGRHYMET (Centre Regional de Formation et d'Application en Agrométéorologie et Hydrologie Opérationnelle), ACMAD (African Centre of Meteorological Application for Development), and ENDA (Environmental Development Action in the third world) who could be engaged as part of larger resilience efforts.

| Subtask 1.3.1.3 Summary | |
|--------------------------------|--|
| Task Lead: | Peter Schultz |
| Schedule: | November 19, 2012 |
| Milestones: | Background research papers complete |
| Deliverables: | <ul style="list-style-type: none">• Burkina Faso Summary Background Paper• Niger Summary Background Paper |

TASK 1.3.2: CONDUCT PERU CLIMATE CHANGE VULNERABILITY AND ADAPTATION DESKTOP STUDY

Year One Progress and Results: Completed

TASK 1.3.3: SUPPORT DEVELOPMENT OF USAID’S FEDERAL AGENCY CLIMATE CHANGE ADAPTATION PLAN

Year One Progress and Results: Completed

Year Two: USAID is required to develop an agency climate change adaptation plan under Executive Order (E.O.) 13514, Federal Leadership in Environmental, Energy, and Economic Performance. The E.O. requires each agency to evaluate climate change risks and vulnerabilities in order to manage both the short and long-term effects of climate change on the agency’s mission and operations. The FY 2013 plan, which was

submitted to the Council on Environmental Quality (CEQ) and Office of Management and Budget (OMB) in June 2012, must be updated on an annual basis. The COR may request CCRD to undertake the following activities in order to finalize the FY 2013 and/or FY 2014 Adaptation Plans.

FY 2013 Adaptation Plan. The following activities may be required to finalize the FY 2013 Adaptation Plan.

- **Country and regional program vulnerability assessment:** In Year One, a brief assessment of climate risks and opportunities was conducted for 25 USAID Missions in countries and regions where USAID has significant investments. In Year Two, CCRD will compile comments, make revisions, copy edit, and finalize the country vulnerability profiles.
- **Response to public comment.** Following release of the USAID Adaptation Plan for public comment, CCRD will support USAID as requested to compile public comments. If requested, CCRD will also prepare the USAID response to comments.

2014 Adaptation Plan. The following activities may be required to complete the FY 2014 Adaptation Plan.

- **Develop FY 2014 Plan.** If requested by the COR, CCRD will assist the GCC Office in preparing the annual update of USAID’s Federal Agency Climate Change Adaptation Plan for CEQ. This may require CCRD to conduct background research in order to identify activities that USAID has completed, those they have not completed, as well as those they wish to include in the FY 2014 Plan.
- **Provide Additional Support.** CCRD will provide additional support to the GCC Office as needed. This may include attending and/or coordinating meetings, providing technical assistance, conducting research, or coordinating the response of public comments, among others.

| Task I.3.3 Summary | |
|--------------------|---|
| Task Lead: | Joanne Potter, ICF |
| Schedule: | August 2012– June 2013 |
| Milestones: | Completion of Country Vulnerability Profiles, Response to public comments submitted, Drafts of USAID’s Climate Change Adaptation Plan update for 2014 submitted for review; Final draft of USAID Adaptation Plan for 2014 submitted |
| Deliverables: | <ul style="list-style-type: none"> • Final draft of County Vulnerability Profiles • 1st draft and final responses to public comments • 1st and 2nd drafts of USAID Adaptation Plan for 2014 • Final draft of USAID Adaptation Plan for 2014 |

TASK I.3.4: PROVIDE SUPPORT FOR USAID INTEGRATION PILOT IN KAZAKHSTAN

Year One Progress and Results: UNDP submitted a proposal to collaborate with USAID/Central Asian Republics on an Integration Pilot in June 2012, titled “Improving the Climate Resiliency of Kazakhstan Wheat and Central Asian Food Security.”

- **Year Two:** CCRD will support implementation of the Integration Pilot. Support will include: (1) strengthening the delivery of weather and climate information and forecasts, conducting stakeholder workshops to assess perceptions of climate change and identify options for addressing climate vulnerability, and preparing a prognosis of the wheat sector in Central Asia and likely impact of climate change on wheat production and food security.

| Task 1.3.4 Summary | |
|--------------------|--|
| Task Lead: | Glen Anderson |
| Schedule: | Year Two |
| Milestones: | Background papers prepared; TDY mission conducted in concert with Pilot start-up; stakeholder workshops organized and convened; roundtable on climate information and forecasting organized and convened, scopes of work for technical assistance on climate information and forecasting developed and implemented |
| Deliverables: | <ul style="list-style-type: none"> • Background paper on modeling of climate impacts on wheat in Central Asia • Profile on Kazakhstan wheat sector • Trip report on TDY mission to Almaty, Kazakhstan • Stakeholder workshop materials and summary report • Roundtable materials and summary report • Scopes of work for technical assistance on climate information and forecasting |

ACTIVITY 1.4 SUPPORT FOR GENDER DEVELOPMENT

TASK 1.4.1: TECHNICAL ASSISTANCE TO THE OFFICE OF GENDER EQUALITY AND WOMEN'S EMPOWERMENT

Year Two: The impacts of global climate change on people's lives are variable, depending on where affected populations live and what they do for a living. Addressing these variable impacts in development programming requires understanding the complex interplay of environment and society in particular places, especially the natural environment and gender. The majority of livelihoods in USAID partner countries are heavily dependent on the natural environment, and therefore sensitive to shifts in weather and climate. Thus, the impacts of climate change often directly translate into livelihoods impacts. Further, livelihoods are often highly gendered, for example with men and women farming distinct crops, or adopting distinct roles with regard to marketing the fruits of household labor. Understanding the range of vulnerabilities experienced in USAID partner countries begins with a gender-sensitive approach to the ways in which men and women experience different impacts from climate change. However, this approach must also address the variable impacts of climate change among men and women of different social and economic strata (this challenge will be diagrammed in the paper). Without careful consideration of these different vulnerabilities, we risk homogenizing different vulnerabilities within communities and households. Focusing on broad community or household-level analyses of vulnerability risks overlooking the specific needs of particular social groups, especially the most vulnerable. If development interventions are to be effective, they must include strategies to manage these impacts and plans to adapt to future effects of climate change that take into account these different vulnerabilities.

While this is an easy point to make in the abstract, putting these broad observations into practice at the program or project level is considerably more challenging. The goal of the paper is to facilitate the practical use of these observations in two manners. First, it will draw upon concrete field experiences to spur thinking on gender and climate change in a practical manner, for example by demonstrating how particular climate impacts produce differentiated outcomes among men and women in different parts of the world, and how taking a gendered view of climate change impacts can improve the reach and effectiveness of development interventions. The paper will specifically highlight the importance of understanding and addressing gendered intra-household climate change vulnerability, impacts and adaptive capacity to address both current and future challenges climate change poses to the achievement of development goals. Second, it will provide broad recommendations on design processes, illustrating ways in which gender considerations might be introduced to increase the effectiveness of GCC programming without prescribing universal fixes for these challenges.

The contemporary literature on gender, development, and climate change tends to consider vulnerability through an oversimplified "men and women" approach that examines the different needs of men and women

broadly, or as a “women’s issue.” This report will serve to fill a knowledge gap at USAID, helping USAID to more fully consider this intersection not just as a “women’s issue,” or as one that pits women against men, but as the source of complex challenges that play out in important, different ways both across and within genders, even at the scale of the household or community. By drawing on evidence from sub-Saharan Africa or other agricultural regions in developing countries, this report will provide empirical evidence for this claim from three different contexts, pointing to the importance of locally-specific, gendered framings of vulnerability to climate change as foundational to addressing development challenges across the continent, both now and in the future. Finally, this report will draw on the general lessons from these empirical examples to suggest productive approaches to the assessment of gendered vulnerabilities to climate change in the context of development projects. This report will make an evidence-based case for improving the effectiveness of aid by taking a nuanced look at the role of how gender impacts climate change vulnerability and adaptation, and emphasizing the need to bring project design and M&E to the sub-household level to better understand development challenges and program efficacy, establishing USAID as an intellectual leader in the intersection of gender and adaptation.

| Task 1.4.1 Summary | |
|---------------------------|--|
| Task Lead: | Ed Carr, University of South Carolina (USC) |
| Schedule: | Year Two |
| Milestones: | Literature review prepared; report drafted and finalized |
| Deliverables: | <ul style="list-style-type: none"> • Literature review summarizing existing literature on gender, adaptation, and development, presenting both gaps and opportunities • Draft report • Final report |

OBJECTIVE 2: COORDINATE WITH OTHER USG AGENCIES TO SUPPORT MAINSTREAMING

The Adaptation Partnership was created by the Governments of Costa Rica, Spain, and the United States following the United Nations Framework Convention on Climate Change (UNFCCC) Conference of Parties in Copenhagen, Denmark. The three founding countries have been joined by more than 20 countries to support a series of workshops for donors, developing country governments, NGOs, and international practitioners. In addition to workshops on a range of adaptation issues, the Adaptation Partnership supports follow-on research and pilots and facilitates communities of practice among workshop participants. CCRD received a buy-in from the U.S. Department of State in Year One to support Adaptation Partnership workshops and other activities. CCRD’s roles for different Adaptation Partnership activities depend on the proposed role for USAID in planning and convening workshops. Follow-on activities are recommended by workshop participants; decisions on these activities are coordinated with workshop participants and donors and scaled according to the resources available through the State buy-in and co-financing from other donors.

ACTIVITY 2.1 ADAPTATION PARTNERSHIP WORKSHOPS

TASK 2.1.1: CONDUCT ADAPTATION PARTNERSHIP WORKSHOPS

Year One Progress and Results: CCRD provided technical and/or logistical support for Adaptation Partnership workshops in Nepal, South Africa, Costa Rica, Bonn, and Bangkok during Year One. CCRD

also worked with the Woodrow Wilson International Center for Scholars to plan the workshop on climate and security for November 2012.

Activities to be continued in Year Two: CCRD finalized the workshop summary for the Building Urban Climate Change Resilience in Asia workshop that was held in Bangkok at the end of project Year One. In November 2012, the workshop on Climate Change Adaptation and Peacebuilding in Africa workshop was held in Washington, DC.

The Adaptation Partnership currently is expected to come to an end in December 2012. New Adaptation Partnership workshops will only be planned if the Partnership is renewed; there may be requests for Adaptation Partnership-style workshops. For example, follow-up workshops in 2013 were discussed by participants in the Bonn M&E workshop and the Washington, DC Climate Change Adaptation and Peacebuilding workshop, which would like to hold a workshop in Addis Ababa in the first half of 2013. CCRD will engage in the planning of such workshops on the direction of the COR and GCC Office.

| Task 2.1.1 Summary | |
|--------------------|--|
| Task Leads: | Rosamund Mische John |
| Schedule: | August – December 2012 |
| Milestones: | Logistics and planning for Adaptation Partnership workshops supported; workshops convened; workshop summaries and other deliverables prepared |
| Deliverables: | <ul style="list-style-type: none"> • Workshop agenda, invitations, participant list • Workshop presentations • Workshop summary |

ACTIVITY 2.2 ADAPTATION PARTNERSHIP COMMUNITIES OF PRACTICE

TASK 2.2.1: FACILITATE ADAPTATION PARTNERSHIP COMMUNITIES OF PRACTICE

Year One Progress and Results: Communities of practice were organized for the High Mountain Glacial Watershed Program, the Climate Services Partnership, and Central American Agriculture (following the Costa Rica workshop).

Year Two: Communities of practice might be organized following the Bangkok and Washington, DC Adaptation Partnership workshops if there is significant demand among participants. Organization of a CoP will involve adding the CoP to the Adaptation Partnership website along with registration information, uploading content of interest to the CoP, and organizing online discussions and webinars.

In addition to the establishment of CoPs, other types of follow-on activities may be identified during Adaptation Partnership workshops. Participants in the M&E workshop in Bonn in May 2012 proposed two follow-on activities in addition to the workshop noted in Task 2.1.1: (1) development of a repository of M&E indicators, frameworks, and approaches; and (2) support for the development of a common set of portfolio-level indicators that would be applicable across donors. Participants at the Climate Change Adaptation and Peacebuilding in Africa workshop in Washington, DC are already making plans to hold a follow-on workshop and develop a plan for how best to bring together adaptation and peacebuilding best practices to the enhancement of both fields of practice. All suggestions for follow-on activities in Year Two will be presented to the COR and GCC Office. As appropriate, they will seek State Department concurrence to move forward on Adaptation Partnership follow-on activities.

| Task 2.2.1 Summary | |
|--------------------|---|
| Task Lead: | Rosamund Mische John |
| Schedule: | Year Two |
| Milestones: | CoP websites designed; websites operationalized |
| Deliverables: | <ul style="list-style-type: none"> Website designs |

TASK 2.2.2: DEVELOP ADAPTATION PARTNERSHIP MATERIALS

Year One Progress and Results: CCRD prepared Adaptation Materials for the UNFCCC Conference of Parties in Durban, South Africa in December 2011.

Year Two: CCRD will prepare materials on Adaptation Partnership activities during 2012 for the UNFCCC Conference of Parties in Doha, Qatar in November 2012. These materials may include workshop summaries and presentations, reports on CoPs, and other Adaptation Partnership activities. CCRD will work with the GCC Office and State Department on the production of these materials (most likely uploaded onto thumb drives).

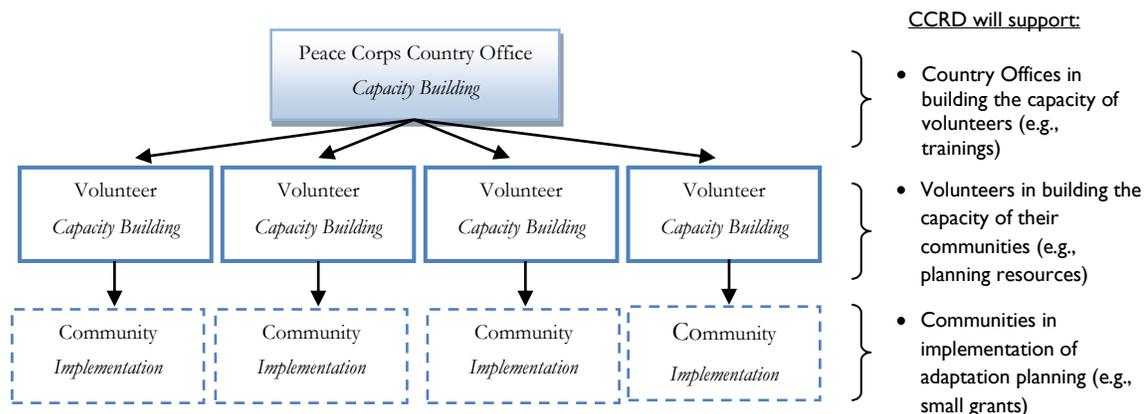
| Task 2.2.2 Summary | |
|--------------------|---|
| Task Lead: | Adaptation Partnership materials for COP-18 – Deborah Tepley |
| Schedule: | Adaptation Partnership materials (October – November 2012) |
| Milestones: | Outreach materials prepare and provided on thumb drives with Adaptation Partnership logo |
| Deliverables: | <ul style="list-style-type: none"> Adaptation Partnership materials for COP-18 |

ACTIVITY 2.3 USAID/PEACE CORPS PARTNERSHIP

TASK 2.3.1: DEVELOP USAID/PEACE CORPS PARTNERSHIP ON CLIMATE CHANGE ADAPTATION

Year Two: Explore ways CCRD can develop a partnership on climate change adaptation between USAID and the Peace Corps. The main objective of this task is to develop a partnership that will facilitate widespread dissemination of climate change adaptation knowledge and testing of the V&A assessment and implementation approaches at the community- and organizational-level by capitalizing on the global reach, breadth, and capacity of the Peace Corps. It will provide an important entrée for CCRD to analyze the effectiveness of its V&A framework within a network that is largely focused on implementation at the local scale, which is something that tends to be lacking in a majority of adaptation work. Other benefits of this task are listed below.

The basic approach is demonstrated in the diagram below. Building the capacity of Peace Corps volunteers within country offices to mainstream climate considerations into their assignments and/or other elements of their communities/organizations (e.g., agriculture, water, sanitation, or infrastructure resources) will, in turn, build the capacity of communities/organizations to mainstream climate into future projects and facilitate duplicative implementation of adaptation.



Design model for dissemination. CCRD will work with Peace Corps headquarters and interested country offices to identify ways to solidify and support a partnership on climate change adaptation between USAID and the Peace Corps. This will include assessing effective ways to build capacity; determining mechanisms to support implementation of adaptation in partner communities, organizations, and projects; and identifying appropriate entry points within the Peace Corps for climate change adaptation.

- *Capacity Building.* Capacity building of Peace Corps headquarters, country offices, volunteers, and partner communities/organizations will be conducted in order to ensure that these stakeholders have an understanding of climate change impacts, vulnerabilities, and know-how for mainstreaming climate considerations into development initiatives. Training modules may be developed to support capacity building. CCRD will work with the Peace Corps to determine the most appropriate trainings for volunteers; these may include adaptation 101/201, mainstreaming V&A, fast-track implementation, or more country-focused trainings on location-specific climate risks or sectoral adaptation (e.g., focused on water, coastal, infrastructure, agriculture, gender, governance, etc.). CCRD will also work with volunteers to determine the most effective means of building capacity for communities. If needed, CCRD will support the development of resources that volunteers may need (e.g., workbooks or information collection, guides to writing small grants proposals). Capacity building may also involve in-country support for conducting V&A or fast track implementation, as well as proposal writing for small grants.
- *Implementation of Adaptation Planning.* In order to ensure communities experience the benefits of adaptation planning, it is important to get to implementation. Volunteers will test the V&A approach at the community-level (in circumstances where the threats are real and potential solutions are relatively well-established, a diagnosis may be streamlined by using the fast-track version of the V&A approach). CCRD will explore the use of a small grants program to support communities in which the Peace Corps is working to implement small-scale adaptation actions. The small grants program may also include stipulations, such as country- or sector-specific CoPs to facilitate information-sharing; development of case studies; or long-term monitoring and evaluation to track progress, vulnerability reduction, and the benefits of adaptation.
- *Entry Points.* It is important that USAID understand the most appropriate entry points for adaptation. This includes both capacity building and implementation of adaptation. CCRD will seek to identify the most appropriate entry points for capacity building (e.g., US-based orientation training, in-country orientation training, or in-country annual trainings) and determine the most effective way to deliver the trainings (e.g., in-person, webinar, web-based, etc.). Appropriate entry points for

implementation will also be assessed (e.g., using a more detailed V&A approach or a streamlined fast-track version of the V&A approach and small grants).

Identify pilot country and test model. CCRD will work with Peace Corps headquarters and country offices to select a pilot country to test the model. (Note: The Benin country director has already shown an interest in a partnership on adaptation with USAID.) It is expected that CCRD will be involved in the testing and implementation of the model from the outset. We will also help to develop a sustainability plan to ensure that the program will continue in the absence of CCRD resources.

Benefits of task:

- Established partnership on climate change adaptation between USAID and Peace Corps
- Model for other potential partnerships with USAID and Peace Corps (e.g., LEADS)
- Widespread dissemination of climate change adaptation knowledge
- Avenue for local-scale implementation and testing of the V&A framework
- More communities/organizations resilient to climate change impacts
- Short-term capacity building leads to long-term action for both volunteers and communities/organizations (help mitigate the gap in capacity when volunteers leave)
- Collection of climate change adaptation case studies from around the world

| Task 2.3.1 | |
|-------------------|---|
| Task Lead: | Charlotte Mack (ICF International) |
| Schedule: | Ongoing |
| Milestones: | Quarterly reports, design the USAID/Peace Corps Partnership on Climate Change Adaptation, identify pilot Peace Corps Country Office, test the partnership implementation plan with designated pilot |
| Deliverables: | Quarterly reports, design and develop Implementation Plan for a USAID/Peace Corps Partnership on Climate Change Adaptation |

| Task 2.3.1 Summary of CCRD Team Roles | |
|--|---|
| CCRD Team Member | Technical Support Role |
| ICF International | Task lead for planning, management, coordination, and implementation |
| IRG/Engility | Task planning and implementation support;* lead for small grants program |
| IRI | Task planning and implementation support* (specifically related to climate information) |
| Stratus | Task implementation support* (specifically related to water or sanitation) |
| ELI | Task implementation support* (specifically related to governance) |

*Task implementation may include development of training modules or other capacity building resources, supporting trainings, or assisting with technical assistance, among other activities.

OBJECTIVE 3: IDENTIFY AND RESPOND TO EMERGING ISSUES AND FILL GAPS

Activities in support of Objective 3 are designed to promote climate resilient development on a global scale. Ideally, they include tasks that add value to USAID programs but also respond to new opportunities or emerging issues in international practice of adaptation. In addition, these activities will typically utilize a teaming approach requiring co-financing from other donors and are expected to be beyond the manageable interests or resources of CCRD, acting alone. Three activities are proposed at this point in the Work Planning process. Activity 3.1 supports the demonstration of mainstreaming of adaptation on a national scale. This represents a large effort that CCRD would support along with other donors and/or regional development banks. Activities 3.2 and 3.3 are responsive to recommendations from the Adaptation Partnership workshops in Nepal and New York (as well as an earlier workshop in Dakar, Senegal) for follow-on work related to glaciers and mountains and the role of climate services in adaptation planning and implementation. Both of these topics have generated interest among practitioners, but are still at the initial stage of formulation. Whether they advance beyond the level of concept will depend on their perceived benefits to USAID, other USG and development partners, and on their attractiveness to other donors as a program area.

ACTIVITY 3.1 SUPPORT ADAPTATION PLANNING AND IMPLEMENTATION

This activity is focused on the support of adaptation planning and implementation at the national and sub-national levels. One thrust of this work is on national adaptation plans and demonstrating the benefits of the USAID mainstreaming climate into development planning. CCRD will continue to support the development of a policy framework in Jamaica designed to promote more climate resilient plans, programs, and projects in the context of Jamaica's national development plan – Vision 2030. This work will include preparation of a methodological note and lessons learned related to the mainstreaming approach. In addition, CCRD will elaborate and test the concept of fast track adaptation implementation, designed to help communities or countries move quickly to address high climate vulnerability/risk issues.

TASK 3.1.1: SUPPORT PREPARATION OF NATIONAL ADAPTATION PLANS (NAPs)

Year One Progress and Results: Field consultations and national-level workshop convened in Jamaica in support of the preparation of a policy framework to integrate climate change concerns into the national development strategy, Vision 2030.

Year Two: CCRD will finalize deliverables from the Jamaica Workshop, including the workshop report. The European Union has funded two consultants to lead work on the policy framework and CCRD will support this work and follow-on work related to implementation of the policy framework. Illustrative activities include:

- Review of drafts of the policy framework, inputs to the policy framework as requested
- Facilitation of donor coordination
- Harmonization of the vulnerability assessment (to be conducted by the USAID-funded Africa Regional Climate Change project) with the policy framework
- Capacity building and training in support of implementation of the policy framework

In addition, CCRD will prepare a note on methodology and lessons learned on the Jamaica approach and implications for mainstreaming and participatory processes for National Adaptation Plans.

| Task 3.1.1 Summary | |
|---------------------------|---|
| Task Lead: | Peter Schultz |
| Schedule: | Year Two |
| Milestones: | Finalize workshop report, provide comments and inputs on the policy framework, finalize note on methodology and lessons learned, and provide support in country consultations |
| Deliverables: | <ul style="list-style-type: none"> • Jamaica workshop report and supporting material • Comments and inputs on the policy framework • Note on methodology and lessons learned |

TASK 3.1.2: DEVELOP AND PILOT FAST TRACK IMPLEMENTATION CONCEPT

Year One Progress and Results: The fast track implementation concept was discussed at the April 2012 CCRD Senior Advisory Committee meeting and further work to develop task postponed to Year Two.

Year Two: The process of planning and implementing climate resilient development actions can be costly in terms of time and resource commitments, particularly if practitioners commit to a comprehensive vulnerability/risk assessment and extensive analysis of adaptation actions. However, there may be opportunities to quickly identify high risk/high vulnerability resources, sub-populations, and assets, conduct a rapid vulnerability assessment and identify adaptations that have attributes that would enable them to be implemented ahead of the longer adaptation process.

This task will involve sequential steps to provide the foundation for fast track implementation. Specifically, CCRD will:

- Prepare a short concept note describing the fast track assessment and implementation approach
- Revise the PowerPoint presentation prepared by ICF to include a case study to illustrate fast track implementation
- Develop a practical tool for assessing vulnerability for resources, subpopulations, and assets and test the tool using existing case studies
- Compile an inventory of adaptations suitable for fast track implementation in priority areas of water and agriculture
- Develop small grant solicitation to pilot fast track implementation approach, conduct solicitation, and award small grants

| Task 3.1.2 Summary | |
|---------------------------|---|
| Task Lead: | Peter Schultz |
| Schedule: | Year Two |
| Milestones: | Concept note and revised PPT prepared, fast track assessment tool developed and tested, inventory of adaptation options compiled, and fast track implementation grant solicitation developed and conducted |
| Deliverables: | <ul style="list-style-type: none"> • Concept note on fast track implementation • Revised PowerPoint on fast track implementation • Fact track assessment tool guidance • Memorandum on fast track implementation testing • Inventory of fast track adaptations • Fast track small grants solicitation • Small grant selection memo • Fast track implementation small grant agreements |

ACTIVITY 3.2 GLACIERS AND MOUNTAINS

The High Mountain Glacial Watershed Program (HMGWP) was initiated in March 2012, following the Adaptation Partnership Workshop and Research Expedition in Nepal in September 2011, as well as discussions with USAID of a concept paper prepared by The Mountain Institute (TMI) and the University of Texas at Austin (UT). The HMGWP contains elements to strengthen the scientific, social, and institutional capacity for climate change adaptation and resilient development, as well as disaster risk mitigation and management (especially for dangerous glacial lakes), in high mountain glaciated regions of Peru, Nepal, and elsewhere in the world. It will do this through: (i) advancing and building knowledge and capacity, adaptation planning, resilience building, and informing climate-smart development at local levels, particularly for mountain communities; (ii) building stronger institutions in developing countries, and fostering the next generation of mountain-scientists and development practitioners, through competitive small grants and mentoring; and (iii) building a global Community of Practice for high mountain glacial watershed research, adaptation, and climate-smart development as a platform to build capacity, undertake comparative research and development projects, and share knowledge and lessons learned.

2015 Vision of High Mountain Glacial Watershed Program: We have strengthened scientific, social, and institutional capacity for climate change adaptation and resilience in representative high mountain glacial watersheds around the world. At least two local-scale climate change adaptation plans are in place (e.g., a LAPA in Nepal), in line with CCRD's V&A guidance, based on full community participation, climate smart development, ecosystem-based adaptation approaches (EbA), risk mitigation, and disaster management planning. Development outcomes include, with key partners, the first community-based and participatory glacial lake outburst flood (GLOF) risk mitigation project to decrease vulnerability of major downstream communities. A vigorous high mountain glacial watershed community of practice, backstopped by a secretariat, is in place sharing knowledge internationally between high mountain scientists and practitioners, undertaking comparative research, implementing climate change adaptation projects, and influencing policy. We have fostered a new generation of mountain-scientists fluent in climate change and adaptation issues, research methods, integration of traditional knowledge, community engagement, and climate-smart development in high mountain glacial watersheds. We have raised awareness globally of the critical importance of high mountain glacial watersheds with donors, international agencies, and governments actively supporting climate change adaptation and resilience building in these regions.

TASK 3.2.1: DESIGN A HIGH MOUNTAIN GLACIAL WATERSHED PROGRAM

Year One Progress and Results: Completed. A concept paper for the HMGWP was developed covering the Community of Practice, knowledge management, research and pilot activities, guidance and capacity

building, and outreach and awareness. A detailed Statement of Work, timeline, and budget for the HMGWP, as well as subcontract agreements with IRG/Engility, were developed and finalized. One-page descriptions were developed for the HMGWP, a Climber-Scientist Competitive Solicitation under the CCRD Small Grants Program, and the HMGWP CoP. The 2011 Andean-Asian Glacial Lake Expedition and Conference Proceedings were finalized and circulated to all CoP members. Also, during the inception phase (2011), fieldwork was undertaken in Nepal including a survey of Imja Lake along with community consultations in the Khumbu Valley.

Activities to be continued in Year Two: None

TASK 3.2.2: DEVELOP THE HIGH MOUNTAIN GLACIAL WATERSHED PROGRAM'S COMMUNITY OF PRACTICE

Year One Progress and Results:

- The Community of Practice was established and initial participants joined. A CoP manager (Katalyn Voss) was recruited and began work from the TMI office in Huaraz, Peru. Detailed implementation plans for its launch were developed during the course of fieldwork in Nepal in April-May 2012 by participating members of the CoP. Invitations were sent to over 100 potential candidates of which some 50 indicated interest in joining. CoP membership has since increased to 112. The CoP website was also established (www.adaptationpartnership.org/communities/high-mountain-glacial-watershed-program), and the first and second Quarterly Newsletters were prepared and distributed to CoP members and posted on the website, along with logs of the April-May and September-October Nepal field trips.
- Based on the recommendations of CoP members from the September 2012 Nepal expedition, a Climber-Scientist Small Grants, and associated institution building initiative was designed and launched. The small grant solicitation was finalized and distributed to CoP members, international mountain organizations, non-profit organizations, and others, and 34 proposals were received by June 22, 2012. TMI and UT reviewed the proposals, and recommendations were forwarded to the Evaluation Committee for final selection. Six individual grants of approximately \$25,000 each were selected from a pool of 15 proposals, and five institutional grants of up to \$100,000 were selected out of a pool of 19. The winning proposals were awarded and are now being implemented.

Year Two: This task will be carried out through two sub-tasks, with one focused on fully operationalizing the CoP and another on continuing the small grants program, as follows:

Community of Practice: A (senior) CoP coordinator will be engaged, establishing a secretariat, to provide coordination, facilitation, and outreach as well as to leverage other donors to support “community” identified priorities and projects. CoP membership criteria will be evaluated, and active recruitment undertaken to optimize the range of geographic and topical coverage (e.g., expertise in physical, engineering, biological, social, economic, and political sciences; development practice; education; donors, etc.). Steps will be taken to “right-size” the CoP to maximize its efficiency and effectiveness. KM products will be developed and shared (e.g., reports, presentations, and videos); and workshops, meetings, online discussions, and webinars will be conducted. The secretariat will also organize and identify opportunities for CoP members to participate in workshops, conferences, trainings, and field activities. The signature event of the year will be the **3rd International Workshop on Climate Change Adaptation and Risk Management in High Mountain Glacial Watersheds** to be held in Huaraz, Peru in July 2013.

Identification, design, and initiation of multi CoP member collaborative projects will be encouraged and supported in Year 2 (to the extent that funds and time allows). These may include: (i) drafting of multi-author articles for submission to peer-reviewed (high-impact factor) journals on topics of global concern (policy and/or practice) for high mountain watershed climate change adaptation and climate-smart development; (ii) global comparative work on climate-smart development and adaptation to enhance learning and practice through testing specific methodologies or approaches in multiple sites around the world (e.g., already underway for GLOF risk assessment and management); (iii) development of knowledge sharing

materials for such target audiences as mountain scientists, development practitioners, decision makers, local communities, students, and the general public; and (iv) formation and promotion of expert teams for high mountain issue problem assessments and solution advice to provide services where requested (e.g., for GLOFs). Time and funding permitting, field trips will be taken to specific countries to support CoP members, identify new members in key geographies, and undertake field reconnaissances to explore opportunities for high mountain watershed program expansion (leveraging funding where possible) and/or for collaboration with other projects being implemented by other institutions and networks.

Small Grants: The initial round of Climber-Scientist and Institutional Small Grants will be executed during Year Two. In addition, a new solicitation will be prepared and undertaken. This program will continue its broad focus on applied development research, on the ground, in high-mountain areas considering the physical and biological sciences, engineering, social sciences, economics, culture, education, communications, governance and policy. Its goal is to nurture a new generation of field scientists while strengthening the applied research capacity of local mountain organizations and generating knowledge of direct applicability to climate change adaptation and climate-smart development in high mountain areas. Grantees, as appropriate, will be assigned mentors either from TMI, UT, or other CoP members to provide guidance and monitoring. Additionally, plans will be developed for Year Three to provide both specific training to successful first round grantees (e.g., in V&A), as well as small pilot grants for adaptation projects identified through their research, on a competitive basis – for which we will also work to leverage funding from other donors.

Subtask 3.2.2.1 - Build and consolidate the HMGWP CoP

The CCRD will continue to develop and support the CoP, evaluating and implementing changes as needed. To facilitate this a CoP coordinator will be appointed, and a Steering Committee established with representation from various geographical areas and disciplines from within the membership. Planned work includes:

Coordinate the CoP, provide outreach services to members and other interested parties, and build an action oriented community:

Hire the CoP Coordinator.

Implement the Steering Committee, with meetings to be held quarterly (via phone conference, with one annual in-person meeting) to set the CoP's direction, review annual plans, establish membership criteria, and assess progress. The first in-person meeting will be at the 3rd annual international workshop on climate change adaptation in high mountain glacial watersheds (see below).

Review CoP membership (under CoP Steering Committee guidance) and recruit and maintain members considering geographical representativeness, thematic focus, and best size for effectiveness.

Maintain the HMGWP website with content including: links to CoP member sites and others of interest; précis on the work of CoP members; an online multimedia library (publications, guidelines, whitepapers, photos, video); a blog and social media for CoP and general high-mountain news, field work, and events; webinars; and other materials of relevance.

Prepare and distribute a quarterly electronic HMGWP Newsletter.

Mobilize support for the small grants program through CoP members and their associated donors (see subtask 3.2.2.2).

- Internal and external knowledge sharing and capacity building
 - Plan and carryout the **3rd International Workshop** on Climate Change Adaptation and Risk Management in High Mountain Glacial Watersheds in Huaraz, Peru in July 2013. Workshop planning will include preparation of the agenda, identifying the list of participants, logistical planning (outsourced to local firms in Lima and Huaraz), and producing workshop materials. The workshop proceedings will be produced (finalized in Q1 of Year Three) and the workshop will also provide a venue to discuss, plan, and advance the various communication and training products outlined below.

- Plan and implement innovative **webinars** for CoP members and others, with at least two undertaken during Year Two, and schedule in place for additional webinars in Year Three. These will be key tools to link the Climber-Scientist grantees to local adaptation planning in Nepal and Peru, and other HMGWP sites in the works that need scientific information to orient decision makers. Illustrative/potential topics (to be demand driven by CoP members) include:
 - Repeat photography and oral history as monitoring tools to inform adaptation planning.
 - Rapid techniques (e.g. bathymetric surveys, ground penetrating radar surveys (GPR), etc.) for assessing disaster risk from GLOFs.
 - Modeling and predicting GLOF events.
 - Early learning from the Khumbu and Cordillera Blanca for climate change adaptation and disaster risk management and mitigation.
 - Monitoring ecological and vegetative changes due to climate variability in high mountains as a tool to enhance Ecosystem-based Adaptation.
 - Promoting climate sensitive social and economic resilience in high mountain communities.
- Produce **fact sheets and policy briefs** (2-4 sides) for the CCRD series (printed and web available) on issues, methodologies, and approaches for enhancing understanding and building climate change adaptation and resilience in high mountain glacial watersheds. Minimum eight to be produced (2 in Year Two, 6 in Year Three). While actual topics will be demand driven and CoP member generated, illustrative/potential topics include:
 - Overview of social, ecological, and physical impacts of climate change on high mountain glacial watersheds.
 - Glacial lake monitoring and risk assessment.
 - Glacial lake outburst flood risk mitigation: assessing options (water work engineering, relocation, etc.), stakeholder-engagement, financial alternatives to support solutions, etc.
 - High mountain climate services.
 - Assessment, monitoring, and management options for glacial recession impacts on water supply and quality.
 - Assessment, monitoring, and management options to reduce landslide risks in high mountains.
 - High mountain glacial watershed governance options: new needs, new approaches.
 - Multi-stakeholder engagement techniques for high mountain glacial watersheds.
 - Ecosystem-based Adaptation monitoring and management options for high mountain glacial watersheds.
 - Review of economic options for supporting climate change adaptation, resilience, and risk mitigation: payment for watershed services, high mountain carbon finance (e.g., Páramo, peat swamps, etc.), energy (hydropower) infrastructure, environment and climate change trust funds, and other financing facilities.
- Prepare a **multi-author manuscript** for submission (in Year Three) to a peer-reviewed (high-impact factor) journal on high mountain watershed climate change adaptation and climate-smart development. During Year Two, hold CoP E-conference to refine topic and authorship, and prepare first draft. This paper would ideally have as many CoP members as authors as possible.
- Prepare plan and undertake initial outreach for developing **mountain curricula** materials to use in university courses in Nepal, Peru, and Central Asia. Much of the curricula can be derived and adapted from the upcoming 2013 publication of TMI and partner's *"Mountains: Human and Physical Dimensions"* textbook. However, experience has shown that successful acceptance and implementation of such curricula requires a demand-drive approach engaging local professors, and university systems. Buy-in will require early participation in the development process and local applicability. The "professors" will need to "want" the modules, help define the content, and insure that this is a contribution to them and their faculties. CoP members from developing country universities will be key for forging the links to local universities and professors.

- Preparation of the modules will start in Year Three, for completion in Year Four/Five. Outreach in Peru will include initial contacts for possible development of similar high-school curricula.
- Continue identification, preparation, and release of **major web/print publications** of utility to the CoP and other relevant stakeholders (in multiple languages as appropriate). Publications already in preparation include (region specific publications are listed in other tasks below):
 - *Glacial Lake Management Handbook* (translated from Spanish) (Year Two completion)
 - *High Mountain Glacial Watershed Guidance Paper* (Year Two completion)
 - *Handbook for Implementing Climate Change Adaptation Community Consultations*, (with comparative case studies from Nepal and Peru, to be published in English, Spanish, and Nepali) (Year Three/Four Completion).
 - CoP **comparative applied research and development** initiatives. During Year Two, we will work with CoP members to identify topics (demand driven) that would benefit from a global/multi-site comparative approach to test hypotheses, methodologies, and solutions for climate change adaptation, risk management, and climate-smart and resilient development in high mountain glacial watersheds. Our work on GLOF risk assessment and mitigation is already taking this approach, from which lessons will be learned for application in new initiatives. We further anticipate opportunities to extend this approach for developing local adaptation action plans (and similar instruments) for high mountain glacial watersheds which we are initiating this year in Nepal and Peru. In Year Two we will explore funding options from CCRD (pilot work) and various donors to support projects identified in Year Three.
 - Establish **expert problem solving teams** from the CoP membership to advise and assess on issues related to high mountain climate change adaptation, risk management, and climate-smart development. Such a team, effectively, already exists for GLOF Rapid Reconnaissance and Modeling (see Subtask 3.2.3.2), but other teams could be established according to needs identified from V&A analyses and local adaptation management planning using a demand-drive approach. The CoP secretariat will be responsible for forming and promoting such teams to potential users (e.g., countries, regions, communities) and facilitating contracting arrangements.
 - Broaden CoP outreach, and coordination with other networks, organizations, and potential donors.
 - Undertake reconnaissance trip in March 2013 to Tajikistan to (i) explore options to strengthen CoP members in the region and to undertake climate change adaptation and resilience building activities in the future in the Pamirs (e.g., Year Three and on); and (ii) assess prospects and, if feasible, advance plans for the 4th international workshop on Climate Change Adaptation and Risk Management in High Mountain Glacial Watersheds to be tentatively held in Tajikistan in the summer of 2014. Meet with key stakeholders and potential partners in Tajikistan including the Tajik Government, Aga Khan Foundation (potential provider for workshop logistics), universities, and local NGOs.
 - Participate in Mountain Partnership meeting, March 2013 (tentative), in Turkey. Hosted at the FAO, the Mountain Partnership convenes representatives from 50 countries and some 150 civil society, research and other institutions to advance Sustainable Mountain Development. This is key for the HMGWP/CoP to articulate, share with, and influence the larger sustainable mountain development community including international organizations, donors (e.g., Switzerland, Italy), governments, civil society, institutes, research centers, universities, etc. (support for 2 participants).
 - Participate in key international, regional and national conferences and workshops to represent the HMGWP and the CoP; share knowledge (physical, biological, engineering, social, economic, governance, etc.), development practice, and lessons-learned to broad scientific, technical, policy, and public audiences of relevance to high mountain glacial watersheds; and maximize opportunities to bring in fresh learning, new collaborators, coordination, and donors. Participants and venues will be chosen strategically to maximize new key audiences, cost effectiveness, and utility: optimizing both representation, and opportunities for learning and sharing for developing country/emerging high-mountain scientists. We will facilitate application

to the CCRD for attendance support (travel, per diem, registration fees) for CoP members not from TMI/UT. An initial prospective list for TMI participation is provided below (some Year Two, some Year Three):

- Association of American Geographers (AAG) Annual Meeting, Los Angeles, April 9-13 2013. Attended by several other CoP members. (Support for one participant).

We will further capitalize on opportunities for organizing and/or participating in other events as they materialize. Potential venues in the Washington, DC area include the National Geographic Society, Woodrow Wilson Center, and the Department of State.

| Subtask 3.2.2.1 Summary | |
|-------------------------|--|
| Task Lead: | Secretariat – TMI/UT |
| Schedule: | Year Two |
| Milestones: | <ul style="list-style-type: none"> • CoP Coordinator hired and Steering Committee established • Online webinars planned and convened • Publications • 3rd international workshop planned and convened • 4th international workshop reconnaissance trip completed |
| Deliverables: | <ul style="list-style-type: none"> • Online HMGWP Community Newsletters • Steering committee meeting (conference call) reports • Webinars (two) • 3rd High-Mountain Conference proceedings (draft, final in Q1 Year Three) • Inception plan for 4th international workshop • Fact sheets (two) • Glacial Lake Management Handbook (English) • Plan for CoP multi-author review journal article • Plan for creating a high mountain climate change adaptation college curricula, with key stakeholders, for developing country universities • Report identifying potential topics and sites for comparative applied research and development by CoP members • Report on CoP engagement with donors and other development actors, including host governments. |

Subtask 3.2.2.2 – “Climber-Scientist” small grants program

The HMGWP, via the CoP Secretariat, will support the following:

Using a participatory process, CoP members will develop a framework for priority research topics, as well as the kinds of institutional linkages needed for enabling and sustaining follow on development action (e.g., with local universities and/or climate change adaptation initiatives), to guide further small grants solicitations.

Assist with technical monitoring of small grant progress and provide technical assistance and mentoring to recipients as requested by grantees or CCRD management.

Meet with grantees and review progress.

Convene in-country meetings with grant recipients to facilitate sharing of approaches and lessons learned, and invite them to participate in the 3rd International Workshop.

Develop and issue Round 2 of the Small Grants solicitation.

Review Round 2 proposal submissions (through an expert CoP panel) and recommend highest ranked projects for funding.

Assist Round 2 grant recipients as needed.

Train grantees in CCRD’s work, provide guidance material, and assist in fundraising and implementation of pilot programs. This will need to be worked out once the second solicitation is finalized, and the reviews of the received proposal are complete.

| Task 3.2.2.2 Summary | |
|-----------------------------|--|
| Task Lead: | Management of small grants – Lana Lightle |
| Schedule: | Year Two |
| Milestones: | Small grants research priorities and framework developed, implemented, monitored, and evaluated |
| Deliverables: | <ul style="list-style-type: none"> • Deliverables for each small grant • Reports on climber-scientist small grants • Assessments of initial individual small grants • Design of competitive solicitation for follow-on pilot adaptation projects for Year 1 grantees |

TASK 3.2.3: DESIGN AND CONDUCT THE CLIMBER-SCIENTIST COMPETITIVE SOLICITATION

Year One Progress and Results: The HMGWP inception field survey in Nepal was completed in August/September of 2011. Further Nepal reconnaissances were undertaken by HMGWP staff and CoP members in April/May 2012 of the Thulagi Glacial Lake, the Dudh Pokhari Lake in the Hinku Valley, and the Tama Pokhari Lake -- a site of a GLOF event in 1998. An additional site visit (w/ Engility's M. Hartman and Harvard's Stephanie Spray) to the Imja Valley was made to assess climate and non-climate stressors, and design the follow-on community consultations, which were undertaken in September 2012. Also, in the (northern hemisphere) autumn of 2012 GPR and bathymetric surveys were undertaken of Imja Lake along with other glacier assessment and monitoring work. We also supported additional risk assessment and mitigation work under USAID’s Adapt-Asia Program. The team further coordinated with UNDP on an Imja Lake GLOF Risk Reduction project (Global Environment Facility [GEF] financing pending), for which the HMGWP led community capacity building components. Results were presented on mainstreaming glacial lake risk management at the Singapore International Water Week and Durban Climate Change COP, as well as at various venues in the USA including the State Department, Wilson Center, and 2012 National Geographic Society’s Annual Explorers Symposium. Presentations were given, videos screened, publications distributed, and new co-funding opportunities investigated.

Year Two: Year Two activities will focus on broadly supporting high-mountain glacial landscape and watershed climate change adaptation, resilience building, and climate-smart development. The focal work area will continue to be the Khumbu Valley because of the magnitude of the challenges it faces (e.g., from an Imja Lake GLOF event), its economic importance to Nepal, the vulnerability of the rural population in the area, and downstream communities dependent on the services it provides. This work is described in two subtasks below covering (i) designing, partnering, and initiating a Local Adaptation Plan for Action (LAPA) for the Khumbu Valley; and (ii) continued GLOF reconnaissance, risk modeling, and community-based risk mitigation.

Box 1 – Coordination with parallel TMI climate change adaptation related work in Nepal.

To provide context, we will be coordinating and sharing lessons learned with other parallel TMI- and partner- led climate change adaptation related activities being undertaken in Nepal during Year Two. These are supported by various donors and agencies including BMU/Germany, the World Food Program, and Wildlife Works Carbon LLC – as a public-private partnership. This is in addition to broader coordination with other projects, development agencies, stakeholders, and the GON. These non-directly CCRD supported activities include:

- A climate change adaptation project to create economic, ecological and disaster resilience in two impoverished watersheds in Humla District, mid-western Nepal. Amongst activities, we are linking up- and downstream communities to enable coordinated planning and action.
- Climate-smart food security support in western Nepal.
- Climate-smart sustainable agriculture and non-timber forest products, cultivation, and marketing focused on medicinal and aromatic plants (augmenting cash incomes of otherwise impoverished households as much as six-fold).
- A market-based REDD+ pilot project in high mountain forests in far eastern Nepal.
- Advancing Ecosystem-based Adaptation through conservation and restoration of alpine ecosystems – reducing landslide risk and buffering water flow – in various sites.
- Climate change related risk mitigation (e.g., from GLOF threats) for important cultural sites. Pilot project to protect an 11th Century Monastery threatened by recurrent flooding from a poorly understood glacial lake. This provides a learning opportunity at the nexus of climate change impacts and cultural heritage preservation.

Subtask 3.2.3.1 Local Adaptation Plan for Action for the Khumbu Valley

As a complement to its NAPA planning process (National Adaptation Programme of Action), under the UNFCCC, Nepal has developed a national framework for Local Adaptation Plans for Action (LAPA) to integrate climate change adaptation into local development planning and climate-smart development. The aim is to (i) enable communities to understand the consequences of climate change and partner with them in determining adaptation priorities, (ii) implement flexible climate-resilient adaptation (land and resource use) plans, and (iii) inform and catalyze integrated approaches (e.g., for climate-smart development) between sectors and stakeholders, reinforcing the sustainability of the project. Nepal expects that the LAPAs will provide a mechanism to mainstream adaptation in the development agenda of local government bodies. The Government of Nepal's (GON) guidelines state that these processes should address such elements as:

- Promoting community-based adaptation through integrated management of agriculture, water, forests, and biodiversity.
- Building and enhancing adaptive capacity of vulnerable communities through improved systems and access to services for agricultural development.
- Community-based disaster management for facilitating climate adaptation.
- GLOF monitoring and disaster risk reduction.
- Forest and ecosystem management in supporting climate-led adaptation innovations.
- Adapting to climate challenges in public health.
- Ecosystem management for climate adaptation (e.g., Ecosystem based Adaptation).
- Empowering vulnerable communities through sustainable management of water resource and clean energy supply.
- Promoting climate-smart urban settlements.

The GON's seven-step process to produce a LAPA is as follows:

1. Community climate change sensitization (inherent to all steps)
2. Climate vulnerability and adaptation assessment
3. Prioritization of adaptation options
4. Developing and formulating the LAPA

5. Integrating the LAPA into and with other planning processes
6. Implementing the LAPA
7. Assessing progress and learning (inherent to all steps)

During Year Two the HMGWP will expand our linkages with local communities and civil society organizations, as well as with local and national government agencies and entities (e.g., Department of National Park and Wildlife Conservation - DNPWC, Buffer Zone Management Committee, Sagarmatha Pollution Control Committee – SPCC, etc.) as a means of enabling, supporting, and facilitating the production of a LAPA for the Khumbu. Guidelines, summation of initial work, and a plan for execution of the LAPA will be produced in early 2013, building on the information obtained during the September 2012 community consultations in Phakding, Namche, and Dingboche as well as several follow on meetings in Kathmandu. Given the need for broad stakeholder engagement, the annual socioeconomic cycle which means that full community participation is most feasible solely during the months of July and August, and need to get buy-in from regional projects, as well as kick-start implementation funding, we don't anticipate fully completing the LAPA for the Khumbu until late 2013 or early 2014. Where appropriate, CoP members, particularly young Ph.D.'s and local NGOs, will be contracted to assist with the LAPA development process, in partnership with TMI Nepal staff. This will further enable cross-site cross-region learning for the community of practice.

The facilitation of the LAPA production process will build on TMI's decades of work in the region, the 2012 community workshops, IRG/Engility's training of trainers' workshop in Kathmandu (which engaged local stakeholders in climate change adaptation and development activities and planning), plus various trainings of TMI staff in climate change principles and V&A methodologies. The CoP also offers expertise in local engagement and cross-cultural information exchange, such as local ecological knowledge and western science. It will further capitalize on progress by the HMGWP in advancing plans for adaptation and disaster management in the Khumbu, in partnership with the UNDP *Community-based Glacial Lake Outburst and Flood Risk Reduction in Nepal Project*, being undertaken in consultation with local stakeholders and which will be finalized during the January-July 2013 period. This will provide key knowledge to inform the LAPA development process.

During Year Two we will undertake the following to advance this subtask:

- Formalize community and other stakeholder partnerships to facilitate the production of the LAPA; also formalize necessary arrangements with the GON (and other entities); and coordinate LAPA priorities with those of other donors investing in the Khumbu region.
- Conduct and document nested LAPA meetings at the National Park, District Development Committees, and Regional Development Council levels.
- Prepare a plan of action to complete the LAPA, including identification of participants and responsibilities. Also, compile available supporting information required.
- If the LAPA process moves forward into implementation, undertake field surveys and community participation meetings

| Subtask 3.2.3.1 Summary | |
|-------------------------|--|
| Task Lead: | TMI/UT |
| Schedule: | Year Two |
| Milestones: | Khumbu Local Adaptation Plan for Action Underway |
| Deliverables: | <ul style="list-style-type: none"> • Khumbu Adaptation and Disaster Management Plans Draft Report • LAPA preparation plan • Agreements with key partners and the GON • Field trips and community meeting reports |

Subtask 3.2.3.2 – Khumbu Valley GLOF reconnaissance, risk modeling, and community-based risk management and mitigation

The HMGWP has distinguished itself through its design and formation of a GLOF Rapid Reconnaissance and Modeling Team capable of obtaining and analyzing glacial lake data of critical importance to outburst flood risk mitigation and management option assessments. This activity breaks with the conventional wisdom that field surveys of high altitude and remote glacial lakes are too challenging to undertake and engineering solutions for risk management infeasible. We are committed to providing research data and technical analysis to local communities to enable them, as the key stakeholders, to best contribute to on-going glacial lake management dialogues, field assessments, and mitigation actions. As lessons are learned, and through the CoP, we aim to be able to provide necessary GLOF reconnaissance expertise where and when needed.

During Year Two we will complete various publications and reports based on work undertaken in Year One. Additional fieldwork, community consultation, analysis, publications, etc. are awaiting the start-up of a new UNDP associated project on Community-based Outburst Flood and Flood Risk Reduction. The implementing agency for this project will be the Nepal Department of Hydrology and Meteorology (DHM), and it will be addressing Imja Lake risk assessment and mitigation. It is contingent on approval from the GEF and the GON, which we anticipate will require several more months. Discussions are advanced in terms of the HMGWP contributions to this work. However, the specifics of our involvement will have to await greater definition as this project starts up, as will further CCRD supported work on parallel GLOF related applied research, risk assessment and modeling, and community engagement. In the case of Imja Lake, we are eager to maintain momentum as our field data has revealed that it is more dangerous than previously expected, is continuing to grow, and identification and implementation of risk mitigation measures are complex and will take time to act on.

Year Two Activities will include:

Continue to collaborate, as requested and GEF funding contingent, with the UNDP Imja Lake GLOF Risk Reduction project. HMGWP contributions may include (Years Two and Three):

- Participating in the UNDP project inception workshop in Kathmandu, Nepal (January or February 2013).
- Full stakeholder (e.g., local communities, university departments, donors, government, international agencies, etc.) convening and coordination. This is critical for enabling the communication and collaboration needed for risk reduction to be successful.
- Instrumentation for lake/glacier monitoring: flow gauge, glacier mass balance/ablation stakes (to detect movement of glacier and terminal moraine), meteorological system, time-lapse cameras, remote sensing images, etc.
- Preparation of enhanced GLOF model with parameters for debris flow, moraine stability, breach formation, and avalanche wave set-up. (Needed for *Case Study: Glacial Lake Risk and Adaptation Options in the Mt. Everest Region of Nepal* and *Evolution of Imja Lake Mitigation Strategies*)
- Development of a glacial lake hydrology (water balance) model for Imja Lake (Needed for *Case Study: Glacial Lake Risk and Adaptation Options in the Mt. Everest Region of Nepal* and *Evolution of Imja Lake Mitigation Strategies*)
- Mini-hydropower socio-economic feasibility study for the communities of Pheriche, Dingboche, and Chukhung (with potential co-financing from NGS/Shell).

Continue community-based risk assessment and decision making for the Khumbu region:

- Acquire recent remote sensing data and develop detailed GIS database for Khumbu region for use in GLOF vulnerability analysis. (Needed for *Case Study: Glacial Lake Risk and Adaptation Options in the Mt. Everest Region of Nepal* and *Evolution of Imja Lake Mitigation Strategies*)
- Develop and analyze future scenarios of Imja Lake growth and GLOF potential. (Needed for *Case Study: Glacial Lake Risk and Adaptation Options in the Mt. Everest Region of Nepal* and *Evolution of Imja Lake Mitigation Strategies*)

- Incorporate scenarios into vulnerability analysis, as well as economic analysis of various risk reduction alternatives. (Needed for *Case Study: Glacial Lake Risk and Adaptation Options in the Mt. Everest Region of Nepal* and *Evolution of Imja Lake Mitigation Strategies*)
- Engage Khumbu communities in data gathering and risk indicator development. Carry out assessment computations and vulnerability mapping with community members so that results can be fully appreciated by local people. (Needed for *Case Study: Glacial Lake Risk and Adaptation Options in the Mt. Everest Region of Nepal* and *Evolution of Imja Lake Mitigation Strategies*)
- The Risk Assessment findings (undated with new bathymetric and ice thickness data from GPR) will be presented to the community, and feedback requested, starting with the Khumbu Alpine Conservation Committee (KACC) and extending to other groups such as the National Park and others. (Needed for *Case Study: Glacial Lake Risk and Adaptation Options in the Mt. Everest Region of Nepal* and *Evolution of Imja Lake Mitigation Strategies*)

Identify potential co-financing mechanisms for high priority projects.

Continue development of the publication (Year Three completion): *Case Study: Glacial Lake Risk and Adaptation Options in the Mt. Everest Region of Nepal* using results from the V&A training, community consultations, and glacial lake field studies and modeling results. This study will consider the economic benefits and costs of possible Imja Lake risk reduction alternatives.

Complete and distribute Imja Lake technical studies reports (to inform the UNDP Project and others interested in Imja Lake GLOF risk reduction)

- *Ground Penetrating Radar Survey for Risk Reduction*
- *Bathymetric Survey*
- *Evolution of Imja Lake Mitigation Strategies*.

| Subtask 3.2.3.2 Summary | |
|-------------------------|--|
| Task Lead: | TMI and UT |
| Schedule: | Year Two |
| Milestones: | UNDP/DHM Project coordinated with HMGWP activities; inputs prepared and submitted to UNDP |
| Deliverables: | <ul style="list-style-type: none"> • Presentations and reports completed • Inputs to UNDP Imja Lake Project (GEF funding, and their request, contingent): e.g., community meeting reports, instrumentation in place, micro-hydro socioeconomic study report, enhanced Imja Lake models, etc. (to be defined) |

TASK 3.2.4: IMPLEMENT COMMUNITY OF PRACTICE PILOT PROJECTS AND RESEARCH

Year One Progress and Results: A Scope of Work was developed for TMI's Andean Programs to finalize the *Glacial Lake Management Handbook* and *Glacial Lake Risk Perceptions Study*. In addition, GPR surveys were conducted at Palcacocha Lake, the emerging glacial lake at Arteson Glacier, and the quickly disappearing Pastoruri Glacier. Results of these surveys were provided to the downstream municipality of Catac to inform their adaptation and risk planning and management.

Year Two: Proposed work under this task in Year Two will be implemented in the Cordillera Blanca region of central Peru. We are proposing three subtasks: (i) planning and building scientific, social and institutional capacity for climate resilient development and risk management in a key high mountain watershed, (ii) evaluating climate change risks and vulnerability for a high-mountain urban area (the city of Huaraz), and (iii) pilot projects to understand, address, and mitigate glacial lake outburst flood risk and lake recession impacts.

Box 2 – Coordination with parallel TMI climate change adaptation related work underway in Peru.

To provide context, we will be coordinating and sharing lessons learned with other parallel TMI- and partner- led climate change adaptation related activities being undertaken in Peru during Year Two. This is in addition to broader coordination with other projects, development agencies, stakeholders, and the Government of Peru (GOP). Various agencies, including the Government of Finland, and private foundations support these and other activities; and other funding prospects are being developed.

On going work includes activities related to climate-smart governance (e.g., innovative municipal commonwealth approaches to integrate climate change capacity building, action, and investment over multiple jurisdictions in watersheds), sustainable livelihoods, conservation and restoration of alpine and páramo ecosystems, community-based applied citizen science, and institutional (grassroot NGOs) and individual capacity building.

Of potential direct complementarity to the work proposed in this work plan, TMI is also cooperating with Peru's Ministry of Environment and the Inter-American Development Bank (IDB) on developing plans to strengthen Peru's regional capacity to adapt to climate change. This cooperation is expected to translate into small grants to implement activities and mobilize political, economic, and technical support from GOP agencies in the region to implement the Quilcay (Palcacocha) Valley and Huaraz Local Adaptation Plan as a pilot case study for high mountain glacier watersheds in Peru.

These projects will provide opportunities to share learning, build broader knowledge, and benefit from efficiencies of scale with the Peru work of the HMGWP.

Subtask 3.2.4.1 - Building scientific, social, and institutional capacity for climate resilient glacial watershed management.

This subtask is focused on the Quilcay Valley located above the city of Huaraz, Ancash, Peru. It includes a variety of knowledge gathering, analysis, and capacity building activities related to the pilot implementation of Peru's National Disaster Risk Management System (SINAGERD) and Regional Climate Change Adaptation Strategy (similarities to the NAPA/LAPA approach in Nepal). The subtask is based on the principles that interventions to reduce climate change related risks in the Cordillera Blanca range require broad vulnerability and adaptation analysis, engaging and convening all relevant stakeholders. SINAGERD is a new normative framework that mandates municipal governments to design disaster risk prevention plans using a watershed approach (TMI has spearheaded commonwealths of municipalities to better enable such whole watershed coordination). Accordingly, Subtask 3.2.4.2 (see below), focused on the downstream city of Huaraz, is also closely integrated for watershed management and GLOF risk abatement approaches to be conducted with rural settlements. This subtask, while it is conducted in a pilot site, will yield innovative tools to support public investment and citizen participation in risk mitigation and integrated glacier watershed management relevant to the whole Cordillera Blanca and other mountain ranges of Peru and globally. A development outcome of the subtask will be the testing and establishment of a multi-agent platform for the design, funding and implementation of climate change adaptation strategies – not only of relevance to high mountain regions.

Activities will include:

- Assist and support local municipalities in the development of a climate change adaptation and risk reduction strategy and plan (to be completed in Year Three/Four) for the Quilcay Valley including GLOF risks, other natural disasters (e.g., landslides), changes in water supply and quality, Ecosystem-based Adaptation options, climate-smart agriculture and livestock management options, etc. as appropriate.
- Build understanding and map local community perceptions of risk and climate change. In Year Two, we will use database tools to map local knowledge and perceptions of climate change and risk in glacier watersheds. This will be integrated with a GIS database for use in GLOF risk and vulnerability assessment. Following on Year One work providing data for Palcacocha Lake to the Catac municipality, we will expand surveys to other sites like Pastoruri glacier and Santa Cruz Canyon, and also inform and consult with downstream communities. These will be useful for local decision

makers for planning adaptation strategies, and will be key to enabling local community effective participation in dialogues regarding risk mitigation and adaptation options.

- Train regional and local governments in the design of public investment projects (SNIP) to implement climate change adaptation and risk reduction activities (Technical support in cooperation with UT and small grant recipients).
- Support the network of community leaders to improve their understanding of risks and opportunities associated with glacial lakes and glacial watersheds and enhance their capacity to actively participate in regional and local government budgeting cycles to propose climate resilient development projects.
- Develop an awareness program with teachers on climate change adaptation and risk reduction in both city and rural schools.

| Subtask 3.2.4.1 Summary | |
|--------------------------------|--|
| Task Lead: | TMI/UT |
| Schedule: | Year Two |
| Milestones: | Research, knowledge management, capacity building, and planning activities related to climate change risks and adaptation in the Cordillera Blanca range |
| Deliverables: | <ul style="list-style-type: none"> • Community and Local government watershed management platform developed in Quilcay basin (Palcacocha) • Quilcay watershed and Huaraz city local climate change and risk of disaster management plan (underway) • Quilcay pilot: Designing a Public Investment Project for Quilcay Glacier watersheds management (natural hazard, water, energy and agricultural components). • Guidelines for public investment projects in integrated glacier watershed management • Teacher training program on high mountain glacier watersheds and climate change (tools and materials) implemented • Risk perceptions studies in Cordillera Blanca (Quilcay, Pastoruri, Santa Cruz) Urban risk planning for Huaraz city and its rural hinterland • GIS database on local perceptions of risk and climate change of Cordillera Blanca (data on Palcacocha, Catac, Santa Cruz) |

Subtask 3.2.4.2: Climate change adaptation, risk mitigation, and disaster management capacity building for the high mountain city of Huaraz, Peru

Urban Risk Planning: Huaraz – In close collaboration with the other subtasks in Peru, as well as CCRD’s new urban component, this activity will focus on evaluating risk and vulnerability in urban settings in the Rio Santa watershed as a consequence of changes in water resources from high mountain glacial watersheds and the Cordillera Blanca. This activity will be undertaken in collaboration with the municipality of Huaraz and the regional Civil Defense office. The city of Huaraz is located in the lower section of the Quilcay Valley and therefore this subtask centered on the city will be seamlessly integrated with the Quilcay Adaptation Plan (subtask 3.2.4.1). Work will incorporate the following activities to help the community to formulate climate resilient development plans, taking into account the complex dynamics between hydrology, economy, and energy in an urban setting that is under pressure from climate change:

- Evaluate natural hazards resulting from changing hydrology in the region, particularly threats from glacial lakes and specifically that of Lake Palcacocha (this work complements the glacial lake rapid reconnaissance and watershed management tasks).
- Evaluate the potential risks to water security and quality resulting from glacier recession. The water supply of the city depends on Palcacocha, with other sources of water in the Quilcay valley being below standard. Therefore, a GLOF, extreme rainfall events, and the recession of glaciers increasing

water acidity all threaten the water supply for this city of over 100,000 inhabitants. Accordingly, understanding water quality, and ecosystem dynamics that affect it, is critical to the city of Huaraz’s climate change adaptation strategy. This activity will be coordinated closely with Climber-Scientist grantee Raul Loayza.

- Evaluate the economic risk that results in urban migration to Huaraz due to limited agricultural opportunities in rural upland areas. Agricultural opportunities are declining for several reasons including: (i) the values of crops are decreasing (although home garden medicinal plant production is on the rise), (ii) weather pattern shifts have resulted in a decline in productivity, and (iii) economic opportunities are greater in Huaraz, resulting in less labor availability in the rural uplands. This urban migration is putting new stress on the rural economy of Quilcay Valley (male migration, less local labor and management available, stress on women education and increased female farm labor) and possible, but unknown, ecosystem impacts. Furthermore, there are broader social and cultural implications on this urban migration.
- Results from the evaluations listed above will be coupled with ongoing risk perception studies to evaluate the perspectives of both urban and rural communities with regards to these changes. The linkages between the natural hazard, energy, and economic risks will also be discussed.
- From the risk evaluations and the perception studies, an Urban Risk Planning Strategy will be developed for Huaraz in collaboration with key stakeholders in the region.

Given that we are initiating this task this year, most development products, plans, and outcomes will come in Project Years Three and Four.

| Subtask 3.2.4.2 Summary | |
|--------------------------------|--|
| Task Lead: | TMI/UT |
| Schedule: | Year Two |
| Milestones: | Research, knowledge management, capacity building, and planning activities related to climate change risks from processes in the Cordillera Blanca to the City of Huaraz |
| Deliverables: | <p><u>Risk Perception</u></p> <ul style="list-style-type: none"> • GLOF training module and awareness building materials developed • Network of community leaders and teachers established • GIS database established <p><u>Urban Mountains</u></p> <ul style="list-style-type: none"> • Urban mountain natural hazard, water, and risk evaluations conducted • Urban risk planning strategy developed and integrated with Quilcay Valley Adaptation Plan |

Subtask 3.2.4.3 Building scientific, social, and institutional capacity to mitigate risks of glacial lake recession and outburst floods

GLOF rapid reconnaissance and modeling will be undertaken in the Cordillera Blanca of Peru, in parallel with Subtask 3.2.3.2 in Nepal above. These activities will particularly focus on the watershed extending down from Arteson Glacier. A new and potentially dangerous glacial lake is forming at the base of this glacier with risk implications for the critically important Lake Parón further down in the watershed. The latter lake is the source of irrigation water for downstream farming communities who manage it to meet their needs. Lake Parón also provides critical dry season flow for the Cañon del Pato hydroelectric facility that generates about 5% of Peru’s electricity, and all of the electricity for the Rio Santa valley – including the city of Huaraz. We will also address climate change risk and adaptation issues related to the rapidly receding Pastoruri Glacier, which serves as a key water reservoir. Here, the Huascarán National Park and the municipality of Catac are collaborating (but need technical assistance) to develop understanding of the impact of receding glaciers on

water security for the municipality and the surrounding small villages. Rigorous estimates are lacking on this glacier's recession rate, its potential disappearance, and implications for local water supply.

In these contexts, we will focus on developing knowledge on the problems above, building local glacial lake monitoring and modeling capacity, and on transferring technologies. We will strengthen the Peruvian Glaciology Unit and National Park staff to perform field surveys, obtain and use GPR systems, and model dangerous glacial lakes and receding glaciers to identify, develop, and enhance engineering solutions for lake management, both at the sites mentioned above, and more generally in the region – particularly where populations are threatened. We will also bolster the capacity of regional and municipal governments.

Specific activities, in coordination with the Peruvian Glaciology Unit, National Park, municipalities, and communities, will include:

- Training and technology transfers for the Peruvian Glaciology Unit, National Park, and regional and municipal governments, working with the municipalities, along with communicating with stakeholders

- Undertake glacial lake rapid reconnaissances to build knowledge, establish baselines, and model future changes and risk factors for key glaciers and lakes (to estimate current and future seasonal water supply and GLOF risk). Specific information to be collected include: moraine and glacier composition and structure (using GPR), flow rates, ice velocity, lake bathymetric surveys, meteorological data, historic changes in glaciated extent/glacier surface area (e.g., from satellite imagery), etc.

 - Glaciers to be surveyed: Arteson, Pastoruri

 - Lakes to be surveyed: Artesoncocha Alta, Artesonraju (middle lake), and Lake Parón

- Undertake community consultation, risk perception survey, mitigation options assessment, and information sharing for the following sites;

 - Arteson Glacier watershed. Complementing the ongoing work of the CCRD Small Grant PI Adam French.

 - Pastoruri_Glacier-Catac area. There is an ongoing and intense activity by TMI-Peru involving the communities in a study of the perceptions of risk posed by receding glaciers in this area. The work that we propose will complement that work and provide additional technical inputs to the community process.

- Through integrating science and results of community consultation, develop model GLOF risk and mitigation options for the Arteson Glacier Lake complex (Upper Arteson Lake, Artesoncocha and Parón Lake).

- Through integrating science and results of community consultation, develop hydrologic model, incorporating glacial recession predictions, for the upper Pastoruri glacier watershed including the municipality of Catac. Information will be shared with the Huascarán National Park's new interpretation center at Catac to educate visitors on climate change and glacier recession (30,000 visitors per year at Pastoruri)

| Subtask 3.2.4.2 Summary | |
|--------------------------------|---|
| Task Lead: | TMI/UT |
| Schedule: | Year Two |
| Milestones: | GLOF models updated, Additional glacial lake reconnaissance work completed and data analyzed, GLOF and glacier model enhancements developed, GIS database developed |
| Deliverables: | <ul style="list-style-type: none"> • Enhanced GLOF models developed • GPR survey of Arteson Glacier • Bathymetric survey of Upper Arteson Lake • GLOF model of Upper Arteson Lake • Glacial lake hydrology (water balance) model for Upper Arteson Lake • GPR survey of Pastoruri glacier • Hydrologic model of basin originating at Pastoruri glacier • Technology transfers • Community consultation, risk assessment and options reports for the Arteson Glacier watershed and the Pastoruri Glacier-Catac area |

| Travel Summary | | | |
|-----------------------|--------------------|-----------------------------------|--|
| Dates | Destination | Travelers | Purpose |
| Jan 1 – 14 | Peru | Byers, McKinney, Rivas, Cuellar | HMGWP Peru July 2013 Workshop Planning and GIS database development |
| Jan 24-27 | Washington | McKinney | CCRD SAC meeting |
| Mar 5 – 19 | Tajikistan | McKinney, Byers, CoP coordinator? | Plan fourth international workshop on climate change, high mountains, and glacial lake hazards (to be held in summer 2014). Scoping for future work. |
| Apr 1 – Jul 21 | Peru | Voss | Plan third international workshop on climate change, high mountains, and glacial lake hazards (to be held in July 2013). Kate Voss will return from Peru to the US in December 2012 and return to Peru on April 1, 2013. |
| TBD April | Washington | McKinney, Byers, CoP coordinator? | CCRD SAC meeting |
| Jun 10 – Jul 21 | Peru | McKinney, Byers | Plan and implement third international workshop on climate change, high mountains and glacial lake hazards |
| Jun 23 – Jul 21 | Peru | Somos, Rounce, Cuellar, Chisolm | <ul style="list-style-type: none"> • Perform GPR survey of Arteson Glacier • Perform bathymetric survey of new lake (Artesoncocha Alta), Artesonraju (middle lake) and Lake Parón • Perform land survey of glacier and lake at Arteson • Measure flow rates • Perform GPR survey of Pastoruri glacier • Implement third international workshop on climate change, high mountains, and glacial lake hazards |
| July 22 - 27 | Washington | Voss | Train new TMI staff for HMGWP |
| TBD July/August | Nepal | Spoon, Taber | LAPA Khumbu Inception |

| | | | |
|------------|--------|-------------------------|--|
| TBD March? | Turkey | Taber, Byers | Mountain Partnership Meeting |
| TBD July | Peru | Taber, CoP coordinator? | 3 rd International Congress |

ACTIVITY 3.3 CLIMATE SERVICES

TASK 3.3.1: DESIGN AN ADAPTATION AND CLIMATE SERVICES PROGRAM

Year One Progress and Results: Completed

Year Two: None planned

TASK 3.3.2: COORDINATE ACTIVITIES OF THE CLIMATE SERVICES PARTNERSHIP

Year One Progress and Results: Ongoing; compile and review comments for Global Framework for Climate Services (GFCS) implementation plan by July 2012.

Year Two: Ongoing coordination, participation in ICCS 2 in Brussels.

Suggestions for new activities: Implement new partner engagement mechanism, including webinar series and additional topical teleconference exchanges. Facilitate establishment of processes for membership and working procedures of Partnership.

Under the leadership of Steve Zebiak, IRI will coordinate activities of the Climate Services Partnership (Secretariat and its Coordinating Group (CG)) and provide oversight and technical support for selected subtasks under CCRD Tasks 3.3.3, 3.3.4, and 3.3.6-3.3.9. The CSP is a platform to connect researchers, providers, users, and funders of climate services, focusing on knowledge exchange, collaboration, evaluation, good practices, and training and education to support the development of effective climate services worldwide, with emphasis on climate resilient development. Under the leadership of Steve Zebiak, IRI will coordinate activities of the Climate Services Partnership Secretariat and its CG and provide oversight and technical support for CSP inputs to selected CCRD subtasks.

Coordination will involve monthly conference calls with the CG, support to the planning of international/regional conferences, and addressing needs and concerns of CG members. The CSP Secretariat will help identify appropriate projects, develop connections, attract new parties and new funds to the Partnership, and raise the profile of the CSP. Additionally, the Secretariat will facilitate the establishment of more formalized membership and operating principles of CSP, consultations and reviews, seminars/webinars and other communications, a sustainability plan, and will work to support CSP regional hubs.

The CSP will be represented in a number of international meetings. At these meetings, CSP members will connect with new and current members; disseminate information about the Partnership and climate services; and learn more about appropriate projects. Meetings that have been targeted in Year Two to date include the American Geophysical Union annual meeting (San Francisco, California), Partner Dialog/WMO Congress for GFCS (Geneva, Switzerland), Climate Change, Agriculture and Food Security (CCAFS)/CSP workshop (Dakar, Senegal). Four additional international trips are anticipated (destinations to be determined).

IRI's role in Task 3.3.2 will include leading and facilitating the CSP platform, its further development, and programs.

| Task 3.3.2 Summary | |
|--------------------|--|
| Task Lead: | Steve Zebiak, IRI |
| Schedule: | Year Two |
| Milestones: | CG conference calls arranged; conference presentations prepared |
| Deliverables: | <ul style="list-style-type: none"> • Monthly CG conference call summaries • Monthly reports on CSP communications, outreach, and operations • Conference and workshop presentations and trip reports • Sustainability plan |

TASK 3.3.3: COMPILE AND DISSEMINATE CURRENT CLIMATE SERVICES KNOWLEDGE

Year One Progress and Results: CSP website up and running, members of Community of Practice registered, online searchable database designed and operational.

Year Two: CSP knowledge disseminated, online discussions and Webinars convened. Solicit feedback, and provide additions/improvements to website organization and functions.

Capturing and disseminating knowledge regarding current efforts allows the international community to learn from previous experience, avoid the duplication of efforts and focus on effective strategies. To facilitate dissemination of CSP knowledge, a CSP website and online knowledge management portal has been designed, and the initial platform has been launched, under CCRD support in Year One.

Subtask 3.3.3.1 CSP website

The CSP website will be developed so as to better serve the CSP mission and its membership.

Primary activities will include:

1. Continuing to build the repository of resources (including case studies, evaluations, guidance documents, training materials, webinars) and ensuring that this repository is easy to access and use.
2. Improving the functionality and design of the site.
3. Improving the online searchable database and its mapping feature, so as to better provide information on current climate service activities.
4. Creating features for membership participation in the website, including discussion for a.
5. Building specific pages for CSP activities, as appropriate.

Subtask 3.3.3.2 Online searchable database of current climate service activities

We will expand the capacity of the interactive map such that it becomes one of the core features of the site. The map should serve as a resource for them all and should give them perspective into who is behind what projects and where/when those projects are happening. The map should also serve as a launch point that directs site users to other pages throughout the portal.

Primary improvements will include:

1. Adding new projects, case studies, and evaluations, which are all distinguished from one another by resource type.

2. Making it easier for partners to add projects.
3. Geographically referencing projects to the specific region where they are active.
4. Addressing the challenge of presenting information about regional/global project challenge.
5. Distinguishing projects on the map by sector and/or by the type of institution that submitted the projects, filtering by the newest projects and longest-lived.
6. Adding a more sophisticated search mechanism that would allow site users to explore the projects/case studies/evaluations in more depth and eliminating the project list at the bottom of the map as well as the project landing pages, so that information was provided when users hovered over projects.

| Task 3.3.3 Summary | |
|--------------------|--|
| Task Lead: | Steve Zebiak, IRI |
| Schedule: | Year Two |
| Milestones: | Coordinate partner feedback on the website and online database, |
| Deliverables: | <ul style="list-style-type: none"> • Revised website • Revised searchable database |

TASK 3.3.4: CONDUCT CASE STUDIES AND ASSESSMENTS OF CLIMATE SERVICES

Year One Progress and Results: Case studies in draft or final versions; Mali Met assessment completed and assessment report in draft.

Year Two: Complete case studies, finalize Mali Met assessment. Undertake a detailed analysis of case study and evaluation findings; publish synthesis results. Conduct second tranche of more extensive case studies.

Suggestions for new activities: Pilot replication of good practices in new place or sector. Adapt evaluation approach to an emerging climate services activity (e.g., an IRI project in Southeast South America) where information can be gathered throughout project. Begin design of a practical guide for evaluation.

This task will cover further analysis of initial cases studies, as well as undertaking a set of “mid-level” case studies on the application of climate services in different sectors and countries, emphasizing user perspective.

We will produce a synthesis document of the Year One case studies undertaken by the CSP, and additionally material captured in ~60 case studies solicited by the GFCs. The findings will be presented at the upcoming World Meteorological Organization (WMO) Extraordinary Congress (October 2012), and a more detailed paper will be prepared for publication.

Initial review of the first case studies has revealed that, overall, the user voice is very weak, and the value of these case studies could be improved by obtaining more user perspective. Moreover, the community participating in Development Day at ICCS 2 expressed strong support for developing a methodology that would be intermediate between the level of analysis done for first round case studies, and that done for the full-scale assessment of the Mali Met Program example. Developing such analyses will help to inform CCRD partners on how much effort is needed to adequately evaluate projects without wasting resources.

Accordingly, up to a dozen climate services activities will be identified from among the existing case studies, and others we are aware of or identified by partners (emphasizing user perspective, institutional arrangements, and business models, including data policy). The Secretariat and IRI will work with the principals of the Mali program and partners to outline a methodology that could provide information good enough to satisfy minimum evaluation standards but that are still practical and affordable. We will identify NGOs or other institutions based in relevant regions to conduct the assessments, with an overview from the Secretariat, using the Small Grants Program of CCRD to support the effort. CSP would work with partners to develop the methodology, oversee the solicitation and selection of grantees, collect, and edit (as needed) the findings. Following this, the IRI will produce an analysis of what can be learned about minimum standards for evaluation (possibly completed after Year Two) that can be delivered as a CSP resource.

| Task 3.3.4 Summary | |
|---------------------------|--|
| Task Lead: | Steve Zebiak, IRI |
| Schedule: | Year Two |
| Milestones: | Analysis of existing case studies Coordinate the selection of 12 potential cases that could be developed into medium assessments Develop a methodology for medium assessments Develop the small grants solicitation and oversee the selection criteria/process |
| Deliverables: | <ul style="list-style-type: none"> • YR 1 case study synthesis document • Up to 12 medium assessments • Methodology for conducting medium assessments • Contributions to the small grants solicitation and selection process • Final Mali Met Assessment Report |

TASK 3.3.5: ECONOMIC VALUATION OF CLIMATE SERVICES

Year One Progress and Results: CCRD coordinated the activities of the CSP Working Group on the Valuation of Climate Services and prepared a matrix on climate services and user groups, conducted a literature review of more than 180 articles and reports, and prepared a draft paper on the literature review. Two working group meetings were convened and working group products were presented at the European Geosciences Union meeting and the second International Conference on Climate Services.

Year Two: The synthesis paper drawn from the literature review will be finalized and distributed for review by the Working Group. CCRD will develop a concept paper for a workshop designed to facilitate the preparation of a primer on the design of climate services valuation studies, to be co-organized by the WMO and the World Bank in late Spring 2013.

| Task 3.3.5 Summary | |
|--------------------|--|
| Task Lead: | Glen Anderson, IRG/Engility |
| Schedule: | Year Two |
| Milestones: | Synthesis paper reviewed and finalized; concept paper for primer and write workshop prepared; workshop materials prepared, workshop convened; primer prepared |
| Deliverables: | <ul style="list-style-type: none"> • Draft final and final versions of the Synthesis Paper on Valuing Climate Services • Concept note on Primer and Write Workshop • Workshop materials • Draft and final versions of the Primer |

TASK 3.3.6: CLIMATE INFORMATION GUIDANCE

Year One Progress and Results: Consultations on Climate Information Guidebook; review and input to Guidance note on Hydromet Services commissioned by the World Bank.

Year Two: There is broad interest in both targeted training/capacity development and guidance around climate services in the development context. Many development agencies already are sponsoring activities in these areas, but there is seen to be considerable value in having a more coordinated approach, bringing together the existing resources and experience, identifying common needs, and as appropriate establishing joint training and guidance resources. This concept was discussed at the recent Development Day workshop associated with the Second International Conference on Climate Services, with support from several agencies, including World Bank, GIZ, DfID, USAID, Red Cross, and others.

Over the past year the World Bank has commissioned a Guidance Note on Climate Services, targeting program officers overseeing implementation of Pilot Program for Climate Resilience projects. Similarly, under its Cooperative Agreement with IRI, USAID sponsored the development and hosting of the “Climate Training for Development Professionals” February 16-17, 2012 in Washington, DC, which IRI led and USAID, World Bank, and IRG attended. Furthermore, through the USAID Cooperative Agreement, a series of webinars on climate information/services for development professionals is being produced. While notable progress has been made within individual organizations to train staff on how climate services can mobilize greater gains in development projects, there is a need to coordinate and mainstream these efforts.

Under CCRD it was initially planned to provide review and advice for the Guidance Note (completed), and then in Year Two to develop a training curriculum to build on the guidance. Given the opportunities we now have to collaborate across a wider group of agencies, and thereby achieve a more consistent and effective approach to climate services for development at scale, we will proceed in this wider context. Activities in Year Two of CCRD will revolve around:

- Training resources for development practitioners
- Guidance for development practitioners

These will be developed within the context of the CSP, with multiple contributors (many from CCRD). The need for greater capacity has been identified by many organizations – most recently at the Development Day workshop – as one of the key factors limiting success in the development of climate services. Case studies have similarly shown that “key individuals” with the right combination of skills, motivation, and institutional standing were at the heart of many of the successes to date.

The first task, undertaken by the CSP Secretariat, will be to work with the development agencies (World Bank, GIZ, DfID, USAID, WFP, UNDP, RCCC) to assemble the relevant existing training and guidance materials, and make these available to everyone through the CSP website. We will additionally survey the materials, and references therein, including the findings from the CSP case studies and assessment activities, to inform a study that identifies the overarching themes, topics addressed, identified needs, gap areas, and

possibilities to integrate and build on existing materials. A central objective of this activity will be to coordinate with USAID to identify specific training and guidance needs to support their development efforts. We will synthesize the results in a report to be shared among all the partners.

Subsequent steps will depend on the interests of a larger group of development actors, although any training needs/requests from development agencies other than USAID will be financed by that institution. CSP can orchestrate a technical review and, additionally, can assist with revision and delivery of training if requested, and resourced for that purpose. CSP can also facilitate a discussion among agencies in an effort to consolidate and further develop a joint training curriculum (most likely to be developed in Year Three if it proceeds). In Year Two, CCRD will support the technical review and synthesis of existing materials, including the most recent training for development professionals that was organized under the USAID/IRI Cooperative Agreement, and based on this, the development and pilot testing of a follow-up training course for USAID and potentially, other audiences. In this activity, IRI will work with a team comprised of USAID, CCRD staff, and other development agency professionals.

Based on this analysis, the CSP secretariat will initiate a further exchange between the above-mentioned development agencies and the broader CSP community to determine whether there is support for a new guidance instrument or set of instruments. Given interest, the CSP secretariat will coordinate a collaborative project among CSP members, including IRI, to develop the training/guidance instruments. CCRD would support the work of the Secretariat and contributions from IRI to this project. Resources from other agencies will be sought to support contributions from other partners.

| Task 3.3.6 Summary | |
|--------------------|---|
| Task Lead: | Steve Zebiak, IRI |
| Schedule: | Year Two |
| Milestones: | <ul style="list-style-type: none"> • Coordinate development agency and expert contributions to guidance documents and deliverables. • Organize training for development professionals |
| Deliverables: | <ul style="list-style-type: none"> • Development of practitioner guidance and training materials available on CSP website • Analysis/synthesis report on guidance • Training curriculum design document • Training event and report |

TASK 3.3.7: PILOT NATIONAL-LEVEL CLIMATE SERVICES ANALYSIS

Year One Progress and Results: Projects to replicate climate services innovations in Ethiopia in two other African settings (West Africa/AGRHYMET and Tanzania) will be nearly if not fully completed. Target for country-level climate services scoping identified.

Year Two: Complete national- (or regional-) level scoping, roadmap development, and preparation of report/proposal. Build on West Africa project in establishing an active Community of Practice and climate information product design for agriculture sector.

Suggestions for new activities: Follow-up activity to Central America workshop: Establish agricultural Community of Practice, new tools (including map rooms). Provide climate services development support to Jamaica.

In “Climate Services for Climate Smart Development: A Preliminary Guide for Investment” (IRI, January 2012) an integrated approach to developing effective climate services capacities in developing country contexts was presented. In Year One, IRI, leveraging funds from its Cooperative Agreement with USAID, pursued activities designed to replicate successful activities within this integrated approach model undertaken with partners in Ethiopia (Nat. Met. Agency, and health community). The Year One activities focused on projects in Tanzania and West Africa, working with the Tanzania Met. Service and AGRHYMET to build capacity and develop new high resolution historical climate analyses, together with implementation of data analysis, display, and dissemination technologies (based on IRI Data Library) for product development and delivery.

The activities for Year Two include a number of follow-up activities to the capacity development effort in West Africa as well as follow-up to the Central America workshop. Furthermore, in Year Two we will initiate a significant new activity focused on Jamaica. This activity captures a major opportunity emerging from ICCS 2 to demonstrate a national level climate services scoping, planning, and implementation process, leveraging and linking major World Bank, USAID, and other climate-related programs that are already underway. Finally, in Year Two, CCRD will support a project led by the International Environmental Data Rescue Organization (IEDRO) focused on data rescue – an opportunity to salvage a large amount of historical climate data for the entire African continent, critically important for all climate services in Africa, and currently in danger of being lost. The Year Two effort will focus on the capturing of data stored on microfiche to optical images, and will be implemented under CCRD via contracts with IEDRO and the African Centre of Meteorological Application for Development (ACMAD).

Subtask 3.3.7.1 Climate service capacities and communities of practice for West Africa

Building on the previous Adaptation Partnership workshop, the joint USAID/CCAFS/WMO/CSP workshop on climate services for smallholder farming communities (December 2012), and IRI’s previous work in capacity development with AGRHYMET (including the recent May 2012 IRI workshop sponsored by the USAID/IRI Cooperative Agreement with travel for participants supported under CCRD), we will work to enable a regional scale climate services capacity and practitioner network in West Africa. This can build on one of AGRHYMET’s established networks in the agriculture/food security sectors, focusing on sector-based needs, decision support tools, and products that can address those needs – an example of functional climate services at the regional scale. The existing institutional linkages and technical capacities at AGRHYMET make this a good candidate to demonstrate regional climate services. We expect this activity to have active involvement and in-kind support from CCAFS. Furthermore, follow-up activities under the USAID / IRI Cooperative Agreement will be leveraged. The Cooperative Agreement activities will focus in the hydrology sector and CCRD activities will focus in the agriculture/food security sector. CCRD Tasks for Year Two include technical capacity development, completing the information platform started in Year One as well as support for the user engagement process that will raise awareness and articulate needs, to inform development of more tailored information and tools.

Between CCRD and the USAID/IRI Cooperative Agreement, significant investments have already been made at AGRHYMET, for example, the develop of a database that combines station measurements with satellite proxies, the installation of the IRI Data Library, development of interactive dynamic Map Rooms and tailored products and tools available through AGRHYMET’s web page. However, the development of the database is not complete, and there is also a need to train relevant AGRHYMET personnel on how to update the data sets.

Generating climate information products and making them available online may not necessarily lead to the use of the information. Users need to understand the value and application of such information products. Users should also be consulted on what kind information they need and in what format. Thus, a user engagement process will be launched through a workshop with the identified practitioner community. The one-week workshop will consist of introduction to the available Map Rooms and their specific uses, soliciting feedback and needs from the participants, and facilitating the formation of a Community of Practice. Activities between CCRD and the USAID IRI Cooperative Agreement will be closely coordinated to ensure

maximum benefits are obtained. It is envisioned that activities under CCRD will target the agriculture/food security sector and those undertaken through the Cooperative Agreement will target the water sector.

Subtask 3.3.7.2 Central America Follow-up to Adaptation Partnership workshop

As follow-up to the Adaptation Partnership workshop held in Central America last year, we will organize a series of workshops that will convene climate information providers and agriculture experts in Central America. Workshops will be organized with national partners in Honduras, Guatemala, and the Dominican Republic to help identify the needs and capacities required to support climate-informed decision-making in the agriculture sector. These workshops will help identify the training needs required to enable national development partners to develop their own tools that translate climate information for the agricultural sector. Following the workshops, the IRI will develop training modules and organize training sessions within each of these countries to meet the identified needs. As a final step, the IRI will provide technical support and guidance as stakeholders develop their tools.

Subtask 3.3.7.2.1 Adaptation Partnership Follow-up – Honduras

Primary activities will include:

- Organize and lead workshops that bring together climate information providers and agriculture experts.
- Draft a workshop report that outlines the capacity development priorities identified in the workshop.
- Host partners at the IRI, where they will engage in training related to tool develop
- Work collaboratively with partners as they develop and improve these tools.

Subtask 3.3.7.2.2 Adaptation Partnership follow-up – Guatemala.

Primary activities will include:

- Organize and lead workshops that bring together climate information providers and agriculture experts.
- Draft a workshop report that outlines the capacity development priorities identified in the workshop.
- Host partners at the IRI, where they will engage in training related to tool develop
- Work collaboratively with partners as they develop and improve these tools.

Subtask 3.3.7.2.3 Adaptation Partnership follow-up – Dominican Republic

Primary activities will include:

- Organize and lead workshops that bring together climate information providers and agriculture experts.
- Draft a workshop report that outlines the capacity development priorities identified in the workshop.
- Host partners at the IRI, where they will engage in training related to tool development.
- Work collaboratively with partners as they develop and improve these tools.

Subtask 3.3.7.3 South-South collaboration in tool development

The IRI will facilitate south-south collaboration among the various stakeholders developing tools that support climate-informed decision-making (including but not limited to AGRHYMET, Honduras,

Guatemala, and the Dominican Republic). Given the number of partners developing/improving tools in Year Two, there is a significant opportunity to share lessons learned among the various stakeholders as these activities are implemented and efforts evolve. To this end, IRI will organize quarterly conference calls with the tool-developing stakeholders to discuss activities and share lessons learned. Following this conference call, the IRI will collect and disseminate a quarterly lessons learned document that outlines ongoing activities, challenges encountered, solutions implemented, and what works and what doesn't.

Subtask 3.3.7.4 National-level Climate Services Development in Jamaica

Now that Jamaica has offered to host the International Conference on Climate Services – 3, and expressed strong high-level national government support for advancing climate services through international collaboration and, given relevant PPCR activities now underway, together with USAID activities around adaptation and the interests of all of these parties – plus DfID, GIZ, Red Cross, NOAA, UWI and others in supporting capacity development and implementation of new capacities both in Jamaica and throughout the Caribbean (with reference also to SIDS generally) – Jamaica now becomes an outstanding candidate for a national scale piloting of climate services development, with opportunity to showcase results to a global audience.

Building on and leveraging existing USAID investments in Jamaica, we propose that CCRD provide support to implement a holistic approach to climate services scoping, planning, and implementation over the next two years or more, coordinated through the Climate Services Partnership. The intention would be to work with the national stakeholders, and the many partner organizations (mentioned above) to promote, support, and implement, as far as possible, the full model of climate services development that has been previously outlined in “The Preliminary Guide for Investment” (IRI, 2012) that has been adopted by CCRD’s climate services program (and supported internationally at ICCS2/Development Day). The key elements are:

- Scoping
- Road mapping
- Review/technical support and collaborative research for climate information systems
- Establishing critical collaborations (partnership platforms, training, data sharing platforms)
- Connections to policy and practice (support tools, Early warning system (EWSs), policy dialogues)

In Year Two of CCRD we would aim to make demonstrable progress on all of these fronts, but taking into account all relevant existing activities that may already provide some of what is needed, or can be adapted or augmented to do so. As a first step, the scoping activity would be accomplished through Jamaica-based meetings with national/regional institutions, WB/IDB, USAID, University of the West Indies (UWI), and other key stakeholders. This process would integrate all relevant existing resources, to identify the priorities and objectives as well as deliverables from near-term climate services investments. This will be supported by CSP Secretariat and CCRD personnel.

Deriving from the consultations will be a roadmap for coordination of efforts, and new investments in the above mentioned areas for the next one to two years.

We anticipate the need to provide technical backstopping, capacity development, and training over the year, pertaining to climate data, analysis, forecast systems, research, and longer-term climate assessments. We also anticipate that there will be demand on the information and user interaction front that will motivate work to transfer IRI Data Library and Map Room facilities (and possibly other tools accessible from CSP members) to Jamaica/Caribbean institutions. This will require some staff exchanges and training sessions (at least six weeks of person effort).

We will assist the local institutions, if possible building on existing networks, to create one or more climate services partnership platforms in the most critical needs areas, to pilot mechanisms of cross-community collaboration. This will require additional support from CCRD for coordination and capacity development.

In the practice area, initial efforts will focus on the identification of resources (analysis and management tools, early warning systems, advisory services) that are already in place, and opportunities to improve these and to access new resources (available through the CSP network) that address priority national needs. We will coordinate technical support, training, and identification of resourcing that would be required to transfer and adapt tools and resources from collaborating groups (most likely in Year Three).

Also during Year Two we will support the organization of a policy-oriented forum – a policy dialogue – targeted to the relevant community at the Caribbean regional scale. The objectives would be to raise awareness about the approaches to climate services development undertaken in Jamaica, the issues raised and their applicability to the broader region, and potential for upscaling of efforts.

The above areas will all provide reportable results and outcomes that will be featured as a special case study session at ICCS 3 in late 2013. The CSP secretariat will work with the local lead institutions to plan and organize the Conference, supporting communications, outreach, program development, logistics, etc.

To support all of the activities listed above we propose that a position of focal point, and coordinator for the project be established. This position should be located in Jamaica, and should be at least half-time effort. We would seek to identify the person to fill this position from among the partner networks already in place through Pilot Program for Climate Resilience (PPCR), USAID or other programs. Ideally, the appointment to this role could be accomplished through a secondment from a host organization, though if necessary, we propose that CCRD provide the support for it. The focal point would ensure the needed coordination, institutional linkages, and communication among key groups on a day-to-day basis, as can only be accomplished on-site. The focal point would work closely with the CSP/CCRD team overseeing and also contributing to the project. An additional responsibility would be to capture all of the information to provide a “real time” case study of the project for ICCS 3 and the CSP knowledge repository.

| Task 3.3.7 Summary | |
|---------------------------|---|
| Task Lead: | Steve Zebiak, IRI |
| Schedule: | Year Two |
| Milestones: | Organize training events in West Africa, Honduras, Guatemala, and Dominican Republic. Coordinate with the local partners in West Africa, Honduras, Guatemala, and Dominican Republic to develop tools and map rooms. Organize trips to and meetings in Jamaica to facilitate discussions and guide the development of policies that support climate services. Organize conference calls with partners to discuss lessons learned in tool development. |
| Deliverables: | <ul style="list-style-type: none"> • Training materials and training reports • Map room and tool online links • Draft policy on climate services development • Trip reports • Lessons learned document on tool development |

TASK 3.3.8: DEVELOP CLIMATE SERVICES PRODUCTS FOR AGRICULTURAL SECTOR

Year One Progress and Results: None – this is a new activity.

Year Two: An improved characterization of agricultural systems and the near-term climate scenarios that are likely to stress them will be advanced among a collaborative team of agricultural, climate, economics, and information technology specialists. The effort will yield outcomes that will improve capabilities of developing country scientists to simulate major agricultural systems. It will also contribute to improved exploration of likely near-term climate impacts by scientists and stakeholders through scenario analysis of decadal-scale climate variability and trends.

Subtask 3.3.8.1 Develop the next generation of Global Gridded Biophysical Model Systems

Utilizing effective approaches for gridded simulations, this effort will create a prototype for a harmonized platform that uses multiple crop models and improved climate, soil, and management inputs and provides traceability documentation to ensure results can be fully analyzed and attributed. It will be developed as an open source project to ensure that all researchers, including those in developing countries, have full access to the system. The work will develop baselines, modeling tools, and assessment approaches in collaboration with developing country researchers and stakeholders in order to build adaptive capacity at the national and regional scales. It will also enhance the sustainable use of soils, watersheds, forests, grasslands and productive agricultural areas. The prototype will be used to demonstrate example simulations globally as well as for one selected region (in either sub-Saharan Africa or South Asia). The system will be provided to the Agricultural Model Intercomparison and Improvement Project (AgMIP) Research Teams in sub-Saharan Africa and South Asia with capacity building that is planned through our project activities in these regions.

Center for Climate Systems Research's (CCSR's) role will include database development, Decision Support System for Agrotechnology Transfer (DSSAT) and Agriculture Production Systems Simulator (APSIM) crop model simulations, and the development of simulation tools to broaden user capabilities.

| Task 3.3.8.1 | |
|---------------|---|
| Task Lead: | CCSR |
| Schedule: | Year Two |
| Milestones: | <ul style="list-style-type: none"> • Organize kick-off workshop to design gridded database for climate, soils, initial conditions, and crop management data use in gridded simulations of agricultural production responses to climate change scenarios • Stakeholder engagement at FAO Food Securities Futures Conference to inform development of global demonstration project • Operational prototype of gridded database and multimodel interface for DSSAT & APSIM crop models • Mid-term workshop and regional stakeholder engagement in Southern Africa to inform development of regional demonstration project • Analysis of results, draft publication, documentation of harmonized gridded database and simulation tools. • Final workshop to present global and regional demonstration projects; advance planning for expansion of the gridded simulation framework to enable more models and data sources, evaluation and analysis of simulation outputs, visualization tools and broader user capability |
| Deliverables: | <ul style="list-style-type: none"> • Workshop report • FAO Food Securities Futures Conference trip report • Online links to operational prototype of gridded database and model interface • Mid-term workshop report • Methodology document • Final workshop report |

Subtask 3.3.8.2 Develop near-term climate scenarios for AgMIP

A set of near-term climate scenarios is needed to inform and engage decision-makers and stakeholders in many regions of Sub-Saharan Africa and South Asia. This effort will include analyses of decadal-scale variability and trends in these regions, and statistical approaches that capture year-to-year variability of wet and dry periods.

The near-term climate datasets and associated training will complement ongoing AgMIP activities that link the proposed work to the development of state-of-science climate change scenario data sets based on the Coupled Model Intercomparison Project Phase 5 (CMIP5) simulations with Representative Concentration Pathways (RCP) forcing. They will enable agricultural analysis and decision making over coming years to decades on site-based crop model intercomparisons, regional economic impact assessments, and representative agricultural pathways (linked to the RCP of the Intergovernmental Panel on Climate Change [IPCC] Fifth Assessment Report [AR5] process).

IRI's role will include the development of near-term climate datasets and simulations in Sub-Saharan Africa and South Asia and analysis to characterize year-to-year variability of wet and dry periods. CCSR will also contribute to near-term climate scenario development and analysis.

| Task 3.3.8.2 | |
|---------------------|---|
| Task Lead: | Lisa Goddard |
| Schedule: | Year Two |
| Milestones: | <ul style="list-style-type: none"> • Ensembles of climate/weather time series of historical period for AgMIP focus regions in Sub-Saharan Africa and South Asia. • Ensembles of climate/weather time series that extend to 2030 for same regions • Documentation of data methodology, interpretation, and recommended use • Analysis of agro-climatic impacts driven by near-future ensemble of climate time series • IRI data library (and possibly map room) interpretation, and recommended use |
| Deliverables: | <ul style="list-style-type: none"> • Online links of ensembles of climate/weather time series • Methodology document • Analysis report |

TASK 3.3.9: CLIMATE SERVICES TECHNICAL BACKSTOPPING OF DEVELOPMENT PROGRAMS

Year One Progress and Results: None – this is a new activity.

Year Two: The Climate Services Partnership platform offers a near-term opportunity to connect climate services knowledge with development programs. There is agreement already among several development agencies to collaborate in areas of climate services guidance and training through the auspices of the CSP. Here we envision a deeper engagement that can be initiated by any agency: to request technical review, advice, and assistance regarding the climate services underpinning of programs or projects. Through its extensive network, the CSP can access broad expertise, and gain participation, as required to provide the backstopping needs of development partners.

We will demonstrate this process, and support CCRD, through an initial activity in Year Two whereby IRI will provide technical backstopping to CCRD program activities, including review, advice, and assistance, as requested. Necessary expertise would be sought from IRI staff and consultants from the international CSP network as needed.

| Task 3.3.9 | |
|-------------------|---|
| Task Lead: | Steve Zebiak |
| Schedule: | Year Two |
| Milestones: | To be determined based on agency requests |
| Deliverables: | To be determined based on agency requests |

ACTIVITY 3.4 CLIMATE RESILIENT URBAN SERVICES

Year One Progress and Results: A set of fact sheets were produced outlining key sources of vulnerability and adaptation approaches for a wide range of infrastructure types. An overview of the fact sheets was produced that describes the context and key principles for infrastructure vulnerability assessment and adaptation. The draft fact sheets and overview were distributed by USAID at the Adaptation Partnership Workshop – Building Urban Climate Resilience – in Bangkok, July 31 – August 2, 2012 and circulated to regional and mission staff for their review and comment. A final set of overview and fact sheets have been completed and will be produced for web and hard copy distribution to USAID staff and the broader development community.

A draft set of “best practices” was produced that outlines many of the essential considerations for increasing the climate resilience of infrastructure projects. This review, which is based on an analysis of vulnerability assessment, and adaptation in OECD countries with an eye toward transferability to developing countries, is being updated and revised. A draft scope of work on adaptation for urban services has been developed through consultations with the GCC Office, based on the needs identified through numerous consultations and workshops including the C40 Climate Summit, ICLEI Urban Resilience and Adaptation workshop, and the Adaptation Partnership workshop in Bangkok. The Adaptation Partnership workshop participants identified a need for:

- Capacity building and city-to-city exchanges
- Increased engagement of the private sector
- Progress in moving from planning to implementation, and connecting theory to practice
- Applying lessons learned in Asia to locations in Africa and Latin America
- Increased access for cities to international financing;
- Providing small-scale catalytic funding, potentially in the form of a small grants program that could be used to build and support local champions in new locations.

These needs are consistent with the findings of the Massachusetts Institute of Technology (MIT) survey conducted of global cities about the status of – and barriers to – adaptation.³ Year Two activities are designed to respond to these needs, advance the priorities of USAID’s GCC Office and Urban Program team, and address actions identified in USAID’s Adaptation Strategy.

Year Two: Activities to support urban adaptation will be conducted through a Climate resilient Urban Services program (CRUS). CRUS will promote increased climate resilience of urban areas by supporting a novel combination of top-down and bottom-up approaches to move quickly and effectively to implement urban climate risk management in individual cities, while multiplying the success and lessons learned from these pilot cities by sharing lessons learned with other cities confronting similar issues. CRUS will also utilize small grants to directly fund implementation actions to improve climate resilience in city neighborhoods and build capacity for adaptation planning, advocacy, and implementation at the local level.

The project will focus on the resilience of the current and future services that cities provide to residents, businesses, and the broader region. These essential services – including shelter, security, transport, utilities, communications, etc. – are dependent on reliable and sufficient infrastructure, as well as on robust management and operations protocols. The rapid pace of development in cities is exacerbating pressures on urban infrastructure that is often outdated, deteriorating, and insufficient to handle burgeoning populations and economic activity. This challenge is compounded by resource constraints – most international climate change funding streams are directed to national governments rather than to cities, and cities have difficulty accessing funding to implement adaptation actions. Further, numerous institutional and governance barriers exist. City mechanisms to shape and regulate development by the private sector are generally weak or nonexistent; and staff capacity to use technical tools and weather and climate information is often low.

This project will address the key barriers to climate resilience in developing cities, by implementing and testing specific strategies at the city and neighborhood levels, working with a set of pilot cities. These barriers, and the strategies to address them through CRUS, are summarized in Table 3.4 below. The strategies developed through the pilot city process will then be shared and promoted to other cities in developing countries for their application, through a vigorous peer-to-peer information exchange program

³ Carmin, JoAnn, Nikhil Nadkarni, and Christopher Rhie. 2012. *Progress and Challenges in Urban Climate Adaptation Planning: Results of a Global Survey*. Cambridge, MA: MIT

and networking with the broader urban adaptation partnership community. In this way the success of CRUS initiatives to increase the climate resilience of urban services in developing countries will be multiplied across cities worldwide.

| Table 3.4. Barriers to Urban Services Resilience and CRUS Strategies to Address Barriers | |
|---|--|
| BARRIER | CRUS STRATEGY |
| Rapid development is occurring without consideration of climate risk | <ul style="list-style-type: none"> • Leverage rapid development activity and redirect maladaptive development by engaging private sector developers in resiliency planning and design |
| Post-disaster rebuilding does not incorporate climate risk | <ul style="list-style-type: none"> • Support cities in developing post-disaster plans for transformative, broad-scale rebuilding that will be climate resilient • Use post-disaster plans to also guide incremental new development |
| Overemphasis on analysis of climate impacts Low institutional momentum for implementation Lack of resources for local-level actions | <ul style="list-style-type: none"> • Support neighborhood-based organizations to implement fast-track adaptation projects that demonstrate effective near-term actions • Build capacity to engage with city government and private sector actors • Provide small grants to support implementation |
| Lack of financial resources for adaptation in cities | <ul style="list-style-type: none"> • Provide information and training to enable cities to access funds from national, international finance institution, and private sector sources • Provide technical assistance and training on financial risk management strategies |
| Insufficient technical capacity exists in city and community staff | <ul style="list-style-type: none"> • Provide technical support and training to cities to implement vulnerability assessment, risk analysis, financing, and adaptation design strategies • Support engineering training partnerships to expand technical resources and promote capacity building of in-country expertise • Facilitate city clusters to share best practices • Facilitate training and information sharing through global networks |
| Inadequate risk management action is in place | <ul style="list-style-type: none"> • Provide technical support to cities to identify and select risk management options |

CRUS will be led by ICF, in collaboration with IRG/Engility. The Project Manager will coordinate the participation of the full CCRD team in all relevant tasks to ensure that the expertise of each team member is well leveraged to achieve project success. This task includes all general project management, meetings, communications, administration, and quality assurance activities required.

TASK 3.4.1 IDENTIFICATION OF PILOT CITIES

CCRD will develop criteria for selection of cities for CRUS support, and identify potential candidates for consideration. Our approach will leverage the knowledge and contacts of the full CCRD team and of USAID Headquarters and Mission staff. ICF and other CCRD team members will consult with USAID partners to receive input and suggestions. This will include consultations with signatories of the Durban Adaptation Charter (DAC) for Local Governments (LG), ICMA/CityLinks, M-BRACE, and the ASEAN Environmentally Sustainable Cities (ESC) Model Cities Programmed (MCP). An initial focus on coastal cities is proposed, with expansion to cities in interior regions facing climate-related risks (e.g. landslides and erosion, flooding, drought) in subsequent rounds. We also propose to focus on cities in Africa and Latin America, because to date there has been more progress and technical support in climate vulnerability analysis provided to cities in Southeast Asia. Cities in South Asia and the Pacific Islands may be additional appropriate candidates to be pilot cities. CRUS will draw on the experience of cities who are already engaged

in climate vulnerability analysis and adaptation by soliciting their participation as “advisor cities.” This approach is discussed further under Task 3.4.4.

Preliminary criteria for pilot cities include:

- Interest and capacity, including willingness to assign a single POC to lead the city’s participation in the program
- Location (Africa, Latin America, South Asia, Pacific Islands)
- Small-to-mid size (100 to 300,000 population)
- Rapid development / past or future
- High vulnerability to sea level rise and extreme coastal events
- Portfolio of infrastructure (diversity, age and condition, timing for replacement / expansion)
- Potential applicability of lessons learned to other cities
- Status of prior work that could inform action (e.g. vulnerability analyses, asset inventories) and stage of decision-making

Following a screening process based on consultations and initial review of criteria, a short list of potential cities will be developed. CCRD will explore their suitability for participation through phone conversations with relevant city staff, potential partners / stakeholders, and members of the international development community. Depending on the level of interest and number of potential city candidates, CRUS staff may travel to have in-person discussions with city staff and partners to explore the needs, capacity, and likelihood of strong participation. Based on this assessment and in consultation with USAID, CRUS will select two to three cities for support in 2013. Cities that are not selected for participation in the first year will become part of the city sharing network and be supported through CRUS outreach and information exchange (Task 3.4.4). They may also be considered to become pilot cities in subsequent years of the program.

| Task 3.4.1 Summary | |
|--------------------|--|
| Task Lead: | Joanne R Potter |
| Schedule: | City selection by March 2013 |
| Milestones: | Development of criteria for pilot city selection Selection of first cities for CRUS support |
| Deliverables: | Draft and final criteria for city selection Memo summarizing task process and findings, and cities selected for participation |

TASK 3.4.2 PROVIDE CRUS SUPPORT TO PILOT CITIES TO ACCELERATE CLIMATE RISK MANAGEMENT

Subtask 3.4.2.1 Develop tailored work plan to address specific pilot city priorities

Work with the pilot cities will be initiated one city at a time, at intervals of three to four months. This phased approach will enable staff to focus on the needs of each city, and to apply the methods developed with the early pilots to subsequent cities. For each city, CCRD will hold in-person working sessions with key city staff to explore their concerns regarding climate vulnerability and to develop a specific work plan that will reflect city priorities. The work plan will articulate a concrete purpose and achievable outcome that will be pursued over a one-year period; as such, it will be developed quickly, and serve as an initial guidance document that will be further developed as work evolves. This initial consultation will include a review of work done to date to identify climate vulnerabilities or increase resilience, identification of key participants in the risk

management effort (including both direct city personnel and external partners), and a review of city planning and decision-making processes. The working sessions will identify the key elements that will inform a one-year work plan for the city, which will include:

- Purpose: Priority needs to advance implementation of risk management strategies
- Leadership and Participation
 - Designated city liaison leader, and key participants in work plan implementation
 - Potential partnerships with private sector businesses, community organizations, NGOs, regional and national governments, and other actors who may be instrumental to success
- Objectives. These will be city-specific objectives, such as:
 - Develop plan for climate resilient post-disaster construction
 - Develop plan for transformational climate resilient development of urban services and infrastructure
 - Identify and select financial tools for climate risk management
 - Improve near-term climate resilience through fast-track adaptation actions
- Key Actions. These will be city-specific actions to achieve the selected objectives, such as:
 - Engage private sector development leaders and identify priority steps to enhance resilience
 - Convene city operations staff to identify “weak links” in existing infrastructure services
 - Select and implement near-term adaptation actions in consultation with city partners

CCRD will work closely with the country liaison to identify priorities and draft the work plan, for implementation under Subtask 3.4.2.2.

Subtask 3.4.2.2 Provide technical support to pilot cities to implement adaptation actions

The CRUS team will provide technical support to each pilot city, guided by the work plan developed under the previous subtask. Depending on city priorities, this work will draw on the expertise of various CCRD team members, as summarized in the table below: **Task 3.4.2 Summary of CCRD Team Roles and Level of Effort.** CCRD will conduct its work through in-person meetings with the pilot city at key points in the process, supplemented by web-conferencing, conference calls, and email communications. We anticipate that four to six trips per city annually will be required, with two to four CCRD staff participating.

Support may include work to:

- *Accelerate preparedness for adaptation implementation through advanced planning.* CCRD will provide technical support to cities in developing climate resilient city plans that will guide post-disaster reconstruction – to best leverage an influx of international financing after extreme events – as well as rapid development spurred by urban expansion and private sector investment.
- *Rapid vulnerability assessment.* The CCRD will support cities in conducting vulnerability analysis of climate stressors, drawing on historic information, seasonal forecasts, and tailored climate projections. This work will include support in assembling and understanding environmental trend data, information on severe weather events and resulting disruptions, and climate projection scenarios. CCRD will work with cities to quickly understand key vulnerabilities so that they can move rapidly to the development of appropriate adaptation and risk management strategies.
- *Select priority adaptation measures to reduce service disruptions.* CCRD will work with cities to apply existing knowledge regarding service disruption or climate vulnerability, and select priority urban services and

risks to address through adaptation actions. Examples of these impacts may include intermittent flooding and closing of key roads; damage to communication networks caused by severe weather events; power outages; and sewerage back-ups. The team will provide technical support to define the range of adaptation strategies that may be considered; evaluate these measures according to cost, efficacy, feasibility, and contribution to or maladaptive effect on broader development and community goals; and identify resources for implementation.

- *Scope and implement adaptation measures.* CCRD will support cities in developing preliminary scopes of work for adaptation actions, and in identifying critical action steps necessary to move the measures to implementation. This work may entail advisory support in technical areas such as watershed management, land use, civil engineering, or governance. Appropriate members of the CCRD will be assigned to this work based on the type of expertise required. In addition, the team will encourage the use of in-country experts and participate in a proposed engineering training partnership to help build local technical capacity.
- *Develop public-private sector partnerships to implement fast-track adaptation actions and development plans.* CCRD will support cities in developing partnerships with businesses in the city by identifying potential company partners or business associations, facilitating identification of common concerns, and developing joint strategies that improve the reliability and resilience of city services and support economic development.
- *Enhance decision-making for urban climate risk management and risk distribution.* CCRD will support cities in identifying appropriate climate risk management tools by providing a menu of options to reduce and distribute risk – such as insurance premiums and contingency/disaster funds – and building their capacity to select strategies that fit their resources and needs.
- *Identify financing.* CCRD will support cities in identifying potential types of investors appropriate for different kinds of adaptation measures, including private sector, international finance institutions, and national government resources. The team will help cities build capacity to design funding strategies, develop partnership agreements, and apply for financing or grants that will support climate resilient actions. The team will develop city-specific financing training that will then be used to develop training resources for the broader developing cities community through Task 3.4.3.

Subtask 3.4.2.3 Identify and support local urban adaptation actions

This task will be a parallel effort to the city-level support undertaken in Subtask 3.4.2.2. CCRD will identify opportunities at a block/community/neighborhood level in pilot cities to implement local-scale fast-track actions. The benefits of these actions will be two-fold: they will achieve improved resilience within a short time frame, and they will demonstrate effective, quick turn-around actions that will provide a model for additional measures in other local communities. To accomplish this, CCRD will provide technical support in identifying the adaptation options appropriate for the given impact – such as periodic flooding in low-lying areas – and support the organization in selecting the most feasible and effective action. Criteria for this selection will include cost, effectiveness, co-benefits, feasibility of implementation, stakeholder support, and timescale. As appropriate, the team will work with local leaders to engage other stakeholders – such as local businesses – who may have common concerns. These organizations may also be appropriate and eligible for support through the small grant program, discussed under Task 3.4.4 below. CCRD will provide support to the local organization through in-person meetings and workshops at key points in the process, supplemented by web-conferencing, conference calls, and email communication. To the extent feasible, in-person meetings will be scheduled concurrently with travel to meet with the pilot cities.

Key steps in this technical support will include:

- *Identify communities and leaders.* The team will identify local champions – from local development organizations, associations, or community groups – that have identified highly vulnerable, at risk infrastructure or services that require adaptation action.

- *Conduct rapid diagnostics of climate vulnerability.* The team will work with local stakeholders to quickly assess climate vulnerability to infrastructure services, drawing from historic records of service disruptions; prior vulnerability assessment, if available; and a charrette-style working session with stakeholders to consider the effect of future climate scenarios and how that may influence the selection and design of adaptation measures.
- *Assess menu of adaptation options.* The team will support the local organization in developing a short-list of potential adaptation measures, including both “soft” (e.g. policy or operational measures) and “hard” (e.g. structural measures) options. The team will provide technical support in evaluating the effectiveness, feasibility, duration, cost, and co-benefits/dis-benefits of potential actions.
- *Scope adaptation actions.* The team will provide technical support in scoping the selected measure(s). This may include development of schematic designs, schedule, procurement documents, and potential contractors, as applicable, and the identification of critical next steps to move to implementation. The scope will also include an evaluation component, which will provide input to Task 3.4.5.
- *Identify resources.* The team will provide technical support to the local organization develop a budget for the proposed actions, and identify financing and other necessary resources to implement the measure. In some cases, in-kind or cash support from businesses, academic institutions, government agencies, or community groups may be an important component of project resources. Groups will be eligible to apply for small grant support (Task 3.4.3).
- *Implement adaptation strategy.* The team will be available to provide technical support to the community organization as the project is implemented.

| Task 3.4.2 Summary | |
|---------------------------|---|
| Task Lead: | Joanne R Potter City technical leads: Mike Savonis, Molly Hellmuth, other CCRD team members |
| Schedule: | This will be a rolling process beginning as pilot cities are identified. <ul style="list-style-type: none"> • First pilot city – work plan development initiated in March 2013 • Technical support to first pilot city – initiated in April / May 2013 • Technical adaptation support to local / community organization in first city – initiated in June / July 2013 Schedule for subsequent cities TBD |
| Milestones: | Per city: <ul style="list-style-type: none"> • Kick-off meeting with pilot city • Work plan completed • City-specific milestones for technical support as defined in work plan • Kick-off meeting with local adaptation leader(s) • Vulnerability assessment and adaptation charrettes • Adaptation action scope completed • Implementation of adaptation action |
| Deliverables: | <ul style="list-style-type: none"> • Work plan for each pilot city • Agenda, participant list, and meeting summary of charrettes • Adaptation scope for each pilot city • Quarterly progress reports summarizing activity, progress to date, problems encountered, and actions taken to address problems |

TASK 3.4.3 DESIGN AND IMPLEMENT A SMALL GRANT PROGRAM TO SUPPORT LOCAL FAST TRACK IMPLEMENTATION

Subtask 3.4.3.1 Design and implement small grant program

CCRD will design and implement a small grant program to support implementation of actions to increase resilience at the community level. The focus of the grant program will be to enable quick-start efforts that will accelerate risk management efforts on the ground, model successful approaches, and contribute to broader city strategies to improve climate resilience through a “bottom up” approach. The grants may support a range of activities based on community needs; examples include:

- Neighborhood design activities to rapidly identify and prioritize climate vulnerabilities, and adaptation options
- Development of partnerships with private sector businesses and community organizations to address climate resilience
- Design of climate resilient adaptations to address local concerns
- Seed funding to identify and pursue financing for local adaptation actions

CCRD will develop for USAID review draft funding objectives, eligibility criteria, funding levels, application processes, selection procedures, and administrative processes for the small grant program. After USAID approval, CCRD will implement the program. In Year Two we anticipate one funding round totaling \$400-500,000, of grants ranging from \$25,000 - \$100,000 per recipient. Subsequent rounds will be designed and

implemented based on experience gained in the first round, with a goal of two to three funding rounds in Year Three.

Subtask 3.4.3.2 Evaluate and refine small grant program

CCRD will develop a monitoring and evaluation protocol as part of the program design. The effectiveness of each award will be evaluated, and lessons learned will be used to refine subsequent funding rounds. Each project review will be conducted by members of the full CCRD team who have expertise related to the technical areas and focus of the project.

| Task 3.4.3 Summary | |
|---------------------------|---|
| Task Lead: | Joanne R Potter, Lana Lightle (IRG/Engility) |
| Schedule: | Grant program design complete by March, 2013 First funding round scheduled for July 2013; subsequent rounds TBD |
| Milestones: | Draft program design Selection of first cities for CRUS support First and subsequent round grant awards (in Year Three) |
| Deliverables: | Draft and final grant program design and criteria Report on grant awards Small grant program evaluation and recommendations |

TASK 3.4.4 FACILITATE GLOBAL CITY-TO-CITY INFORMATION EXCHANGE TO MULTIPLY SUCCESSFUL CLIMATE RISK MANAGEMENT

The purpose of this task is to rapidly expand the capacity of developing cities to take actions that will increase the climate resilience of urban services and infrastructure by sharing information on lessons learned and techniques that are applicable across multiple cities. This will be achieved by establishing and facilitating information sharing and peer learning among cities that are concerned about their immediate and long-range risk to climate impacts on infrastructure services – including the pilot cities as well as the broader global network of cities engaged in urban adaptation. Advisor cities – such as cities involved in M-BRACE or cities in Viet Nam being supported by CCRD, as well as cities in developed countries – will be invited to participate in this information exchange. The target cities for information sharing include:

- CRUS pilot cities
- Small grant applicants and recipients
- Members of existing urban adaptation and sustainability partnerships
- Other cities addressing climate risk in developing and developed countries

To access this global network, CCRD will build on existing partnerships – in particular the Durban Adaptation Charter for Local Governments, ICMA/CityLinks, M-BRACE, and the ASEAN Environmentally Sustainable Cities Model Cities Programmed. CCRD will develop a multi-platform communications program – grounded in peer-to-peer sharing and access to global sources of technical expertise – to support rapid dissemination of good practices, tools, and methods to fast-track adaptation implementation and develop transformative plans that will ensure greater infrastructure resilience in rapidly growing cities. CRUS will take advantage of in-person conferences and other events organized by existing partnerships to provide trainings on urban services adaptation. The infrastructure fact sheets and best practices document developed in Year One will be finalized and disseminated as part of this resource sharing and capacity building.

The participation of CRUS cities and CCRD in these venues will achieve multiple purposes. It will:

- Foster more widespread application of the lessons learned through the pilot process
- Encourage “cross-pollination” of good ideas among pilots and other cities on the leading edge of climate adaptation
- Promote the use of the small grants program
- Help identify and recruit cities that may be pilot cities in subsequent rounds of CRUS

Subtask 3.4.4.1 Promote peer learning through south-south city clusters and information exchange with global network, and targeted training workshops

CCRD will facilitate peer learning by facilitating information sharing and dialogue among the CRUS pilots. This will be done through virtual meetings (using Skype, live meetings, and webinars); a SharePoint or similar web-based site to support exchange of documents, tools, and templates; and dissemination of approaches that individual pilots have found helpful. The purpose of this exchange will be to more quickly build capacity, problem-solve on shared concerns, and to foster an ongoing and collaborative network of city decision makers and technical staff. CCRD will encourage cities to develop and share summary presentations of their vulnerability findings and selected adaptation approaches, as well as the barriers and challenges encountered in their work.

Secondly, CCRD will collaborate with existing partnerships to identify conferences, workshops, or other venues for broader information sharing, capacity development, and training. For example, CCRD will work with the Durban Adaptation Charter Local Governments to develop training workshops focused on specific issues that are priorities for member governments, with a particular focus on urban areas in Africa. One, and possibly two, training workshop(s) will be planned and implemented in Year Two; others may be scheduled for Year Three. Based on participant interest, topics for this training could include:

- Planning for large-scale post-disaster redevelopment
- Rapid diagnostic methods for vulnerability assessment
- Fast track implementation of adaptation actions
- Engaging the private sector in adaptation actions
- Lessons learned from city-level adaptation on sector-specific adaptation approaches (e.g. transportation, water and sanitation)

Subtask 3.4.4.2 Complete and disseminate best practices white paper and infrastructure fact sheets

CCRD will complete an updated version of the best practices white paper. This information, as well as the completed infrastructure fact sheets, will be disseminated through the USAID and partner websites, through the peer-to-peer information exchange forums, and at training and conferences in which CRUS participates.

| Task 3.4.4 Summary | |
|---------------------------|---|
| Task Lead: | Joanne R Potter |
| Schedule: | Continuous 2013 and into 2014 |
| Milestones: | <ul style="list-style-type: none"> • Peer-learning clusters identified and communication mechanisms established • Workshop presentations by pilot cities at adaptation network forums • One to two training workshops delivered at adaptation network forums |
| Deliverables: | <ul style="list-style-type: none"> • Established peer clusters • At least one training workshop • Final best practices white paper and infrastructure fact sheets • Quarterly progress reports |

TASK 3.4.5 EVALUATE CRUS ACTIVITIES AND RECOMMEND NEXT STEPS

Subtask 3.4.5.1 Monitor effectiveness of CRUS initiatives and refine program actions

CCRD will monitor the effectiveness of all CRUS activities during Year Two, identify strengths and shortcomings in the approaches, and incorporate these findings into the design of the Year Three program.

| Task 3.4.5 Summary | |
|---------------------------|--|
| Task Lead: | Joanne R Potter |
| Schedule: | Ongoing |
| Milestones: | <ul style="list-style-type: none"> • Mid-year and final evaluation |
| Deliverables: | <ul style="list-style-type: none"> • Quarterly progress reports • Final evaluation and recommendation for Year Three refinements |

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