

## MANAGING CLIMATE IMPACTS ON HEALTH IN WATER AND AGRICULTURE SECTORS

1. “The effects of climate change on health will affect most populations in the next decades, and put the lives and well being of billions of people at risk.”<sup>1</sup> The most evident climate change impacts on human health are caused by heat stressors (droughts and heat waves), flashfloods, forest fires, and other extreme events, resulting in contaminated water supplies and increased vector- and water-borne diseases that may exacerbate for example the spread and development of cholera, malaria and dengue fever in Asia and the Pacific.
2. The agriculture and water sectors are significantly affected by climate change. Rapid changes in ecological and water systems will facilitate redistribution, migration and increased frequency of certain agricultural pests, threatening agricultural yields. Climate-induced extreme weather events and variability such as floods and droughts will have a long-term impact on food security and livelihood opportunities, especially among poor and most-at-risk populations who lack access to alternative sources of income and social safety nets.
3. The relations between health and the water and agriculture sectors are widely recognized: water and agriculture interventions offer both opportunities and risks for the health of the populations. Water management (irrigation and dams for example) and water supply (water quality) change the epidemiology of water-borne diseases (such as diarrheas, hepatitis A and E, and schistosomiasis). Agriculture is essential for nutrition (quality of food, availability of micronutrients) and food safety (contamination) as well as control of zoonoses (such as avian and swine flu). Rising food prices will not only lead poor households deeper into poverty, but may force change in the diet, resulting in long-term nutritional deficiencies, especially among children. The Asian Development Bank's (ADB) regional departments, such as the Pacific Department, have specifically outlined the links between climate impacts and human health in their climate change implementation plans. A better understanding of these links and of the probable impact of climate change on the health of the populations in Asia and the Pacific has been recognized as a priority in the 2009 work plan in the Poverty Reduction, Gender, and Social Development Division of the Regional and Sustainable Development Department.
4. Strategy 2020 and the Operational Plan for Health emphasize the importance of cross-sectoral approaches to improving health in the region. There is a need to integrate health concerns into other sectors, such as water and agriculture, while they plan to mitigate and adapt to climate change, to ensure that these decisions and actions also enhance health
5. To prepare and respond to emerging climate change and health risks, better baseline studies are needed to adequately manage risks associated with climate change and health in water and agriculture sectors. Understanding of the health risks and commitment of key decision-makers to integrate health considerations in climate risk management at national and regional level is still limited across the region. There is also insufficient awareness among the general public about climate change and its impact on health. Collecting evidence-based information will assist in raising communities' and governments' awareness and building their capacity to adapt to those challenges and reduce potential risks.
6. The envisioned initiative will (i) improve the understanding of developing member countries (DMCs), ADB staff, and other concerned actors of the health-related implications and costs of climate change on human health through climate change impacts in the water and agriculture sectors, and the costs of adaptation (financial costs of action and inaction); (ii) review

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<sup>1</sup> Costello, A. *et al.* 2009. Managing the Health Effects of Climate Change. *Lancet and University College London Institute for Global Health Commission*. 373: p.1.

selected ADB water and agriculture sectors projects and assess if and how climate change and impacts on health were considered and addressed; (iii) visit selected DMCs and discuss how they have integrated climate change and health impact in climate change risk management, particularly in the water and agriculture sectors; and (iv) identify existing knowledge and gaps, and therefore information and capacity-building needs for ADB and DMCs to adequately address climate change impacts, particularly synergies between climate change adaptation and health planning. The initiative will be implemented in close collaboration with ADB's health, water and agriculture communities of practice, regional technical agencies and government agencies in selected DMCs.

7. This initiative aims to identify good practices that can be replicated and scaled-up. It also aims to develop a template for integrating climate change and health issues in the design of water and agriculture projects. These latter objectives will be further developed, as appropriate, in a follow-up TA proposal.

- Appendix 1: Implementation arrangements
- Appendix 2: Design and Monitoring Framework
- Appendix 3: Terms of Reference

## IMPLEMENTATION ARRANGEMENTS

The Poverty Reduction, Gender, and Social Development Division will be responsible for the proposed initiative. A lead consultant will be recruited for 3 months starting in January 2010, who will report to the Practice Leader (Health). The consultant will conduct desk-top research of core projects, visit selected developing member countries (DMCs), and consult with stakeholders and concerned technical agencies (including the World Health Organization). In selected DMCs,<sup>2</sup> the lead consultant will assist one or two local consultants to implement a country assessment based on a standard survey template. A draft final report is expected by 1 March 2010. The draft report will be circulated to the Health Community of Practice (CoP) as well as to the Water and Agriculture CoPs and the Climate Change Fund manager, and discussed with key technical agencies and governmental institutions that have contributed to the initiative.

### **Selection criteria of countries that will be further studied**

- Fragile mountain ecosystems; arid, semiarid and rain fed regions; low-lying coastal zones and deltas; regions affected by glacial melts and temperature stressors, drought, and extreme weather (typhoons/flooding/storm surge).
- Existing national adaptation strategies that address health vulnerabilities and inter-sector linkages between ministries of health, water and agriculture
- Country partnership strategies that offer opportunities for follow-up actions (under a possible technical assistance)
- Partnership opportunities with specialized agencies and development partners

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<sup>2</sup> Four countries will be selected for further assessment in the following short list of DMCs: Bangladesh, Cambodia, Kiribati, Mongolia, Pakistan, and Philippines,

## DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and/or Indicators	Data Sources or Reporting Mechanisms	Assumptions and Risks
<p><b>Impact</b> Better management of climate-related health risks in the water and agriculture sectors</p>	<ul style="list-style-type: none"> <li>Climate related health risk management measures incorporated into in water and agriculture projects, plans, and design and monitoring frameworks</li> </ul>	<p>(New/ updated) guidelines for water and agriculture projects</p>	<p><b>Assumptions</b> Water and agriculture sectors prepared to contribute and implement follow-up actions.</p> <p><b>Risks</b> Limited interest in follow-up action</p>
<p><b>Outcome</b> Improved understanding and capacity to address health impacts of climate change in water and agriculture sectors</p>	<ul style="list-style-type: none"> <li>General agreement within ADB of climate change related health risks in water and agriculture sectors within the concerned CoPs (health, water and agriculture)</li> <li>Time-bound follow up actions</li> <li>Presentation on climate change related health impacts in water and agriculture sectors at the Climate Change conference in Copenhagen</li> </ul>	<p>New TAs and guidelines in agriculture and water sectors</p> <p>Plan of action</p>	<p><b>Assumptions</b> Consensus on findings and recommendations</p> <p><b>Risks</b> Lack of capacity to implement recommendations</p>
<p><b>Outputs</b> 1. <u>Literature review:</u> (i) climate change related health risks and impacts in water and agriculture sectors (ii) identification of good practices and tools to address climate change related health risks in water and agriculture sectors (iii) identification of</p>	<ul style="list-style-type: none"> <li>evidence based good practices and investment opportunities in risk reduction</li> <li>Health indicators for assessing climate change related risks in water and agriculture sectors</li> <li>Tools for integration of climate change and health risks in</li> </ul>	<p>Overall study report</p>	<p><b>Assumptions</b> Timely recruited consultants with expected deliverables</p> <p><b>Risks</b> Delayed implementation and report not ready for the December conference</p>

<p>cost effective adaptation/mitigation measures and investment opportunities that reduce risks and strengthen inter-sector planning (iv) estimates of financial cost of action and inaction</p> <p>2. <u>Desk Review</u> of ADB projects in water and agriculture sectors to assess (i) importance of climate change related health risks of the project, (ii) measures proposed to address the risks, and (iii) when appropriate, impacts of the measures</p> <p>3. <u>Field assessment</u> of (i) ADB water and agriculture projects, (ii) Government's approach to climate change related health risks in water and agriculture sectors in selected DMCs</p> <p>4. Assessments of information and capacity building requirement for ADB staff and DMCs on climate change related risks in water and agriculture sectors</p>	<p>water and agriculture sectors</p> <ul style="list-style-type: none"> <li>• Assessment of ADB projects and loans on climate change related risks in water and agriculture sectors: <ul style="list-style-type: none"> <li>(i) Has this been considered</li> <li>(ii) Any measure identified to facilitate adaptation</li> </ul> </li> <li>• Assessment according to template survey</li> <li>• Needs analysis</li> </ul>	<p>RRP, PPR and PCR of selected water and agriculture projects in climate change most at risk DMCs</p> <p>Country reports</p> <p>Final report</p>	
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<p>5. <u>Formulation of a TA</u> to:</p> <p>(i) integrate climate risk management and health into ADB's water and agriculture projects, and</p> <p>(ii) develop proposals for health adaptation initiatives in the water and agriculture sectors, including corresponding cost-estimates and financing plan.</p>	<ul style="list-style-type: none"> <li>• TA proposal</li> </ul>	<p>TA documents</p>	
<p><b>Activities and milestones</b></p> <ol style="list-style-type: none"> <li>1. Recruitment of lead consultant</li> <li>2. Inception report and workplan (2 weeks after recruitment)</li> <li>3. Development of pilot survey to assess (i) ADB water and agriculture projects and their concerns for climate change related health impacts linked to the project, and (ii) county strategy, policy or interventions developed (or not) to address climate change related health impacts in water and agriculture sectors(3 weeks after recruitment)</li> <li>4. Identification, in collaboration with ADB of (i) countries for pilot survey and (ii) one or two local experts to implement the survey (3 weeks after recruitment)</li> <li>5. Desk research, country survey and field visit</li> <li>6. Draft final report for circulation to Health, Agriculture and Water CoPs, and CCF Manager</li> <li>7. Draft technical assistance for follow-up action</li> </ol>			

## **TERMS OF REFERENCE**

### **Lead Consultant**

**Project:** Managing Climate Impacts on Health towards Resilient Water and Agriculture Sectors

**Expertise:** Public Health and Climate Adaptation Specialist (the consultant)

**Source (Local / International):** International

**Category (Independent / Firm):** Independent

#### **Objective / Purpose of the Assignment:**

To assist ADB acquire improved understanding and capacity to address health impacts of climate change in water and agriculture sectors in the Asia-Pacific region, a Lead Consultant with expertise in health and climate change will undertake the following assignment.

#### **Scope of Work:**

The Lead Consultant will prepare

- A report describing the relations between health and climate change in the water and agriculture sectors; best practices to address these issues and mitigation/adaptation measures generally applied; review and assessment of what has been done in ADB water and agriculture projects in selected DMCs particularly affected/expected to be affected by climate change; cost of addressing the issues and cost of non-intervention; and other appropriate information to achieve the objective of the assignment.
- A draft TA paper for follow-up action.

#### **Detailed Tasks:**

The lead consultant will

- prepare a work plan using a results-based management framework
- prepare a template survey on climate change related health impacts in the water and agriculture sectors. In particular, the survey will (i) assess ADB water and agriculture projects in this respect, and (ii) review government health, agriculture and water policies and programs in selected countries and its adaptive approaches and solutions for risk management of climate change and health impact in agriculture and water sectors
- identify, in collaboration with ADB, one or two local experts to implement the survey in selected DMCs
- assist and supervise the implementation and analysis of the country surveys (including country visits)
- review health surveillance systems and identify key health indicators that could be used to identify and assess health and climate change related risks and cost-effective mitigation strategies
- collect and analyse evidence-based good practices on climate change on health for integration into water/sanitation and agriculture sectors projects, particularly in those countries especially vulnerable to climate change
- review existing modeling and costing tools and propose changes for more effective planning and implementation of climate change impacts on health, and linkages to water and sanitation and agriculture sectors

- determine whether further research required to assess the links between climate and health, projected impacts (including impact modeling), particularly in relation to water and agriculture sectors
- visit and consult with various stakeholders in selected countries to understand current cross-sectoral practices on health and climate change adaptation
- undertake an assessment of ADB projects and loans identified in ADB's portfolio risk and review the selected risk mitigation strategies, having in mind climate-related adaptive measures for health
- identify capacity-building needs for ADB and selected DMCs to address climate impacts, synergies between climate change adaptation and health planning
- identify possible interventions for financing, such as institutional development, knowledge and information development
- prepare a report consolidating the findings and recommendations of the assignment, (including the country assessments)
- prepare a draft technical assistance proposal for follow up action (such as: generation and dissemination of knowledge products; facilitating regional collaboration to address climate change related health impacts in agriculture and water sectors; feasibility studies of mitigation and adaptation interventions if appropriate; recommendations for modeling and costing studies)

**Reporting:**

The lead consultant will report to the Practice Leader Health. Technical support will be facilitated (and provided, when appropriate) by RSGS.

**Dates and Place of Assignment:**

The assignment will be undertaken partly at home office, at ADB Headquarters, and in selected DMCs. The assignment is expected to start early January 2010 and be completed by April 2010.

**Deliverables:**

- Final report
- Draft Technical Assistance document