



FAO-Adapt :: Example 10 :: Climate change adaptation - Coping with salinity

FAO submission to Adaptation Committee :: August 2013

Summary of the Support for Adaptation in Developing Countries	
Basic information	
Title of project, programme or portfolio	Climate change adaptation - Coping with salinity IAEA code: D1.20.13 Landscape Salinity and Water Management for Improving Agricultural Productivity
Objective(s)	<p>To support research and development activities conducted in Bangladesh, China, India, Iran, Pakistan and Vietnam to investigate impacts of land use and land management activities on soil and water salinization, and develop technologies and practices for preventing salinization as well to sustainably use salt affected soils and saline waters for crop production.</p> <p>Addressing soil and water salinity in agricultural landscapes involves either reducing salinity (mitigation) or adapting to salinity (adaptation) by using innovative soil and water management technologies and practices in salt affected soils and saline water. Efficient investment in salinity mitigation requires an understanding of how different landscapes respond to alternative land and water use options at the field and landscape scale. This project aims to address salinization problems in agricultural landscapes and protect the soil and water resources needed to sustain food production.</p> <p>The specific objectives were:</p> <ol style="list-style-type: none"> 1. To optimize crop productivity through soil and water management under saline conditions at the field and landscape scales. 2. To improve soil quality (physical-chemical- biological) and minimize salt accumulation in the root-zone by water (rain and irrigation) and agronomic management. 3. To assess the impact of on-farm practices on regional crop productivity, water and salt stores and fluxes under current and future climate.
Countries and/or regions supported	Bangladesh, China, India, Iran, Pakistan and Vietnam
Sectors addressed	Agriculture, with global impacts on coping with climate change on soil and water salinity with examples from Bangladesh, China, India, Iran, Pakistan and Vietnam.
Timing and duration	5 years starting from 2013
Contact person (name, email address and telephone number)	Minh-Long Nguyen, M.Nguyen@iaea.org, +43-1-2600-21648
Scope of support (Please provide a description for each relevant category of support)	
Planning, prioritizing and implementing adaptation actions identified in national/subnational plans and strategies, national communications, NAPAs etc.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Any details: A Consultants Meeting with four experts in the field including representative from FAO was held in IAEA. Subsequently a coordination meeting with all participants of the project was also held in IAEA to discuss the current national issues on water and salinity and the soil and water management technologies and practices to improve agricultural productivity.
Impact and vulnerability assessments (including of financial needs)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Any details: To enhance Member States' capacity to prevent and mitigate the adverse effects of climate change and variability on water and soil salinization. Salt affected soils will be brought back to agricultural production. Farmers from Member States benefited through increased agricultural production by using salt

	affected soils and saline water.
Strengthening institutional capacities (<i>of national institutions</i>) and creating enabling environments	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Any details: Capacity development through meeting, training of participants in modelling and expert assistance (training workshops for breeders and farmers), equipment and procurement, logistics support.
Economic diversification	<input type="checkbox"/> Yes <input type="checkbox"/> No Any details:
Climate change related disaster risk reduction strategies, early warning systems, risk management	<input type="checkbox"/> Yes <input type="checkbox"/> No Any details: The project contributes to climate change related risk management in crop and agricultural productivity.
Understanding, coordinating and cooperating on climate related displacement	<input type="checkbox"/> Yes <input type="checkbox"/> No Any details:
Technology transfer, research and development	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Any details: Best fit soil and water management practices will be introduced in participating countries. Modelling training will also be conducted.
Education and public awareness	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Any details: Through scientific publications and information brochures.
Systematic observation for climate data collection, archiving, analysis and modelling	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Any details: Systematic observation for climate data collection, archiving, analysis and modelling will be carried in this project. Modelling to coalesce and broaden the applicability of the data, including projections of responses to future system changes will form an important part of this study.
Principles guiding support¹	
Any details on how the support provided ensures a country-driven, gender-sensitive, participatory and fully transparent approach; takes into consideration vulnerable groups, communities and ecosystems; is based on and guided by the best available science, traditional and indigenous knowledge; and leads to the integration of adaptation into relevant social, economic and environmental policies and actions	This funding support will help to deploy soil moisture system (cosmic ray probe) which is capable of measuring area-wide soil water status of up to 40 ha of land and tracking water flow in agricultural system and its influence on both farm and area-wide salinity. This instrument along with remote sensing and geographic information systems and modelling to project the responses to future system changes will support and strengthen a newly starting FAO/IAEA coordinated research project on 'Landscape salinity and water management for improved agricultural productivity' (2013-2017).
Resource(s) of support	
Main source(s) of financial support, including volume/amount disbursed (<i>provided by the reporting institution/agency</i>)	Regular Budget of the Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture (FAO and IAEA RB)
Other source(s) of financial support, including volume (<i>includes support provided by collaborating donor agencies/</i>	IAEA Technical Cooperation Department's support through both national and regional projects.

¹ For details, please see paragraph 12 of decision 1/CP.16 <<http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf#page=2>>.

<i>countries, as well as beneficiaries)</i>	
Methods of delivery (e.g. <i>direct access, concessional loans, etc.</i>)	Research contracts and agreements through Chief Scientific Investigator in participating countries
Additional information (including description of the nature of financial sources: new and additional? ODA?)	The outcome will be: 1. Guidelines on the use of cosmic ray probe for soil water measurement. 2. Guidelines on integrated soil and water management for using salt affected soils, saline water and preventing salinization and land degradation. 3. Capacity building through trainings on soil, water and crop management to disseminate information on (i) soil water measurement and (ii) integrated salt-water management.
Other types of support, including technology transfer and capacity building	Protocols and guidelines from SWMCN Section of the Joint FAO/IAEA Division for Food and Agriculture will be developed and available for participating countries
Key stakeholders	
Beneficiaries (<i>specify their number and nature, e.g. national / subnational level, institution, local authorities, civil society groups, vulnerable communities, etc.</i>)	The project outputs will benefit national agricultural research systems and extension services (NARS); and farmers who will adopt these packages which have been adapted to various agro-climatic zones.
Key participants of the support initiative and their respective roles (<i>list any other implementing agencies, government agencies, and donors to the initiative</i>)	1. Mr Baoguo Li (China Agricultural University, Beijing, China). 2. Mr Xurong Mei (Chinese Academy of Agricultural Sciences, Beijing, China) 3. Mr Suresh Kumar Chaudhari (Central Soil Salinity Research Institute, Karnal, India) 4. Ms Rayehe Mirkhani (Nuclear Science and Technology Research Institute, Karaj, Iran) 5. Mr Khalid Mahmood (Nuclear Institute for Agriculture and Biology (NIAB), Faisalabad, Pakistan) 6. Mr Hai Sinh Duong (Institute for Water Resources and Environment of Viet Nam, Hanoi, Vietnam) 7. Mr Nhan Dang Kieu (Mekong Delta Development Research Institute, Can Tho, Vietnam)
Progress to date	
Progress, including results achieved so far and how progress is monitored and evaluated (<i>How does the current situation differ from the situation present before support was given – i.e. has the action been effective and how?</i>)	Project initiated in July 2013
Best practices and lessons learned (<i>including barriers to effective delivery of support; ways of enhancing coherence and synergy across levels</i>)	As part of the project, farmer field trainings will be provided in participating countries

Other relevant information <i>(including links to publications, documents, webpages, progress reports, videos etc.)</i>	http://www-naweb.iaea.org/nafa/swmn/index.html
Further Engagement in the Work of the Adaptation Committee	
Would your organization be interested in continuing to engage in initiatives led by the Adaptation Committee? <i>(Please see AC work plan for reference)</i> If so, please provide details of a contact person.	Name of contact person: Minh-Long Nguyen Email address: m.nguyen@iaea.org
Please provide details of other organizations active in your region, which could contribute to the work of the AC.	CSIRO, USDA