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ABSTRACT BOOK

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scales of analysis were used in a pilot basin in each of the two countries under study: the Dominican Republic and Guatemala. Research was done together with universities, ministries of environment and other stakeholders from two municipalities per basin, making it one of the key aspects that contribute to achieving the objective. This approach of incorporating decision makers, water resource managers and other stakeholders, aims to promote the application of the findings and the use of research results and to strengthen learning and management skills for beneficiaries and the organization leading the research.

For the climate change models for the region published in the IPCC Fourth and Fifth Assessment Reports (AR4, AR5), we performed a comparative analysis, in terms of future water availability. It is among the main results of the project, to date. Based on technical criteria, we chose four of the 19 General Circulation Models (GCMs) published in the last IPCC report, the new Representative Concentration Pathways scenarios (RCPs). These models were inputs to determine the impacts of future climate change on water quantity, compared to current conditions. Distinct models produced different results, especially for rainfall. Regarding erosion, the most vulnerable basins were mostly located in Haiti and Guatemala. Hydrologic and climate modeling with a Soil and Water Assessment Tool (SWAT) provided a more detailed analysis on the two basins. Results will be available in a public website, for consultation by the 22 countries in this region and can be used in their next Climate Change National Communications. Project-sponsored universities, national researchers, and students collectively performed vulnerability analyses in the pilot basins. Thru the project, a regional study was done in the countries with information available, to understand how the countries invest on climate and water resources. It showed that more than 60% of investment funding comes from external sources. From this 60%, three quarters go to the implementation of programs and costs of operation and maintenance of infrastructure. One quarter goes to actual infrastructure or hard investments. In general, countries set priorities depending on the pressure over water resources from different sectors, especially agriculture, energy generation and industry.

In the policy framework, the Roman law system prevails for Central America and in the Caribbean, the so-called common law applies. Differences in motivation are evident in the regulatory frameworks among the Caribbean Community (CARICOM) member countries and the Central American Integration System (SICA) countries. Both policy and investment studies were specific to both pilot countries. The studies were complemented by a thorough analysis of water resources management, conducted by relevant stakeholders from the pilot municipalities. It found that conflicts and gaps existed in the institutional responsibilities, policies, regulations and investments to the sectors. It identified the different local strategies that allow people to move forward in terms of water security. The municipal government scale is where findings will integrate at the end. The biophysical, economic, management and political research done will be the basis to develop Municipal Adaptation Plans. Research results plus lessons learned, will be used to prepare the guides to optimize public investment in climate change adaptation on water resources. Local stakeholders have already integrated into a «Participation Focus Group (GFP)» in each country basin in a process that promotes learning, communication and empowerment of results. They have participated in the whole process; strengthened their knowledge and perspectives; validated methodologies and monitored research outcomes, and provided recommendations. A public resource-sharing platform will complement the advances in guiding adaptation policy through knowledge built together. It will provide results and products already obtained, and the new ones we expect to obtain. This platform aims to engage and share with the rest of the regional community as a means to promote sustainability, scaling and dissemination of results.

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Prepared for climate change? A method for the ex ante assessment of the completeness, transparency, legitimacy, and expected effectiveness of responsibilities for climate adaptation

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Climate change related risks encompass an intensification of extreme weather events, such as fluvial and pluvial flooding, droughts, and heat stress. A transparent and comprehensive division of responsibilities is a necessary – but not the only – precondition for being prepared for climate change. In this paper we present, and preliminarily test, a method for the ex ante assessment of the division of public and private responsibilities for climate adaptation. This method proofs particularly suited for the assessment of adaptation responsibilities in combination with a sectoral approach. It helps identifying a number of shortcomings in divisions of responsibilities for climate adaptation. We conclude that this method is useful for identifying the expected climate change preparedness level, and recommend to combine this with ex post analyses of real-life cases of extreme events in order to assess the actual preparedness for climate change. With this method, we intend to assist policy-makers in developing and implementing adaptation plans at various levels.

Keywords: adaptation; climate change; responsibilities; ex ante assessment method; the Netherlands.

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A comparative sustainability analysis of conservation agriculture in the Mediterranean: The ACLIMAS project

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The sustainability analysis of selected combinations of genotypes and water management practices (including water harvesting and conservation tillage) is here interpreted as an analytical approach towards the long-term perspectives. The selected combinations, specifically chosen as potential alternatives to current farming practices, should help farmers to cope with more frequent droughts induced by climate change, as well as being able to sustain their farms' activity over time. We present herein the sustainability assessment of three different Mediterranean case studies, by analysing trade-offs among environmental, economic, and social performances of farms from the Chaouia Region in Morocco, Bekaa Valley in Lebanon and in Irbid Governorate in Jordan growing mainly cereals and legumes improved varieties tolerant to water, heat and salinity stresses. Several combinations of different genotypes, fertilizers practices, tillage systems and water management options were tested and evaluated. The sustainability assessment, carried out within the activities of the project Adaptation to Climate Change of the Mediterranean Agricultural Systems (ACLIMAS, EuropeAid ENPI/2011/269-668), adopts a participatory multicriteria decision support system framework including several steps: (1) description of farming systems: identification of farmers' problems and priorities to be considered in the evaluation; (2) design of the knowledge base: identification of evaluation criteria (indicators) for the three pillars of sustainability (environment, economy, and society) in accordance to the local specificities; (3) collection of quantitative data for the selected indicators and (4) multicriteria sustainability analysis of different combinations proposed by ACLIMAS. Results demonstrate that "ACLIMAS practices" increase the three dimensions of a sustainable development and have a high rate of acceptability and a big potential of adoption.