

Integrated Water Resources Management (IWRM) Projects and Initiatives in the Caribbean

Title: Climate Change and Inland Flooding in Jamaica: Risk and Adaptation to Vulnerable Communities

Organisation: The University of the West Indies, Mona Campus, Jamaica

Aims and Objectives:

The project aims to target the following main questions:

- What are the potential impacts of climate change on Jamaica's vulnerability to flooding from extreme events?
- What adaptation measures can be carried out for affected communities to cope with increasing flood risk and what is the impact of flood events on properties and livelihoods.

The specific objectives of the project are :

- To provide a historic overview of the frequency and severity of flooding for the watersheds under study.
- Assess local knowledge, attitudes and practice (KAP) of project communities towards climate change, increase KAP towards climate change, and institute climate change into the curriculum of basic and primary schools.
- Create downscaled regional climate projections (medium and long term) for the two watersheds and western section of the island using PRECIS.
- Creation of flood models and flood hazard maps for Yallahs (St Thomas) and South Negril-Orange river (Westmoreland, Negril) watersheds using HEC and LISFLOOD-FP.
- Creation of interactive web maps showing the spatial extent of the flood plain, inundation depths, communities affected and to be affected from future extreme events and include the results in the Caribbean Disaster Risk Atlas.
- Dissemination of results through community workshops, television and radio interviews and through publication in peer reviewed academic journals.
- Capacity building and knowledge sharing between partnering organizations.

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Duration: Start Year: 2012 Completion Year: 2014

Additional Comments:

Estimated Cost (USD): \$78,660

Funding Source: Climate and Development Knowledge Network (CDKN)

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Key Words: Flood, Vulnerability; Climate Projections; Knowledge Attitude and Practice; Yallahs, Jamaica

Geographic Coverage: Jamaica: Two watersheds : Yallahs in the East and South Orange Negril in the West

Sectoral Focus: Water; Disaster Risk Management; National Planning

Target Beneficiaries: Government; Communities; Planning Agencies; Academia

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Outputs:

Primary outputs include:

- Climate projections and the associated RCM for the two watersheds for mid-term and end of century projections.
- Hydrological models for the two watersheds for extreme events as well as for present and future rainfall of different probability of exceedances or return periods.
- Flood risk model for the watersheds under present and future climate projections
- Community survey in the watersheds to assess the knowledge on flooding and climate change. Pre and post modelling workshop to disseminate knowledge and training in the communities.
- A set of recommendations regarding the mitigation of flood risk and adaptation measures under climate change
- A stakeholder workshop and associated workshop proceedings held for key Government agencies including the Water Resources Agency and the Office for Disaster Preparedness and Management
- Publications in the form of journal articles and technical reports.
- Capacity development at the Mona Campus and joint collaboration with St Augustine campus in climate and flood risk modelling

Project Links and References:

<http://cdkn.org/project/climate-change-and-inland-flooding-in-jamaica-risk-and-adaptation/>

Impacts:

The management and mitigation of flood risk is an aim of the Government of Jamaica through its policy frameworks. This project will provide the necessary tools to allow for effective planning of flood risk management strategies with impact of climate variability which incorporate social vulnerability at their centre. The project also looks at spatial and temporal distribution of flooding in Jamaica and creation of flood hazard maps using logistic regression models. The project involved community surveys in the two watersheds to disseminate information on the project findings as well as knowledge attitude and practice on climate change and flooding. Project outputs will help in creation of policy briefs which are aimed to target planning agencies in developing proper building codes for development in flood prone areas.

Sustainability:

Information not available

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Lessons for the Future:

The project findings showed that data insufficiency is a critical issue and lack of good data on rainfall and river flow can cause hindrance in modelling. These need to be looked at and agencies responsible should follow a proper monitoring of the island's rainfall and other hydrological data. The terrain data of the island was coarse which needs special attention in developing good quality and high resolution topographic data. Additional study sites, nationwide. Collection of data.

Opportunities Arising from the Project:

Additional Study Sites; Nationwide; Collection of Data

Further Comments:

Information not available