

Climate Services & Water Resource Management

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EDITORIAL NOTE

In view of increased threats of climatic variability and alter occurring in Africa, Latin America and therefore the Caribbean, effective climate risk management is important to strengthen the capacity to manage the water resources in these regions, through networking and by facilitating international and regional cooperation. This may be achieved by developing pilot experiences and interesting with regional partners in these regions to upscale these experiences to the regional level.

The overall objective of the project is to supply reliable climate services to watch and forecast droughts and floods at the local level to enhance national risk management strategies and to lower the impact of water-related hazards on vulnerable communities through improved communication and outreach in pilot regions of Latin America, the Caribbean and Africa, with particular attention to global climate change vulnerabilities.

The project has four specific objectives:

- Support the event of climate services for flood and drought management, embedded in national and sub-regional contexts
- Provide capacity building to national and regional stakeholders to transfer the knowledge and technology for climate services
- Engage with high level policy makers to spot opportunities to develop more proactive drought and flood risk management policies
- Empower the local communities with the actionable, timely

and relevant information for climate informed decision-making employing a participatory, citizen-science approach

The efficiencies and effectiveness of water resource management are inextricably linked to climate services. This study demonstrates a climate information service for Danjiangkou Reservoir, which is that the largest reservoir in Asia, facing mounting challenges for control, water storage, and water diversion. Unlike traditional water resource management on the idea of short-term weather outlook and runoff monitoring, Sub Seasonal to Seasonal (S2S) and annual climate predictions also as long-term global climate change projections were well wont to support the choice makers in Danjiangkou Reservoir. The National Climate Centre (NCC) has projected the changes of future climate and extreme events by dynamically downscaling the Coupled Model Intercomparison Project Phase 5 (CMIP5) projections to 25 km resolution for the long-term planning of water resource management in Danjiangkou Reservoir. Real-time climate predictions supported climate models and downscaling interpretation and application methods at different timescales were also provided to satisfy the precise needs of earlier predictions and spatial refinement for the short-term diversion of the reservoir. Our results show that such climate services facilitated the Diversion Centre of Danjiangkou Reservoir (DCDR) to reasonably control the operational water level, increased the ecological water system to the northern portion of China by 844 million m³ and reduced the maximum amount as 1.67 billion m³ of abandoned water in 2019. Within the future, it's necessary to develop climate prediction methods to extend spatial and temporal resolutions and prediction skills, and enhance interactions between providers and users.

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