DEWFORA

AT A GLANCE

Title: Improved Drought Early Warning and FORecasting to strengthen preparedness and adaptation to droughts in Africa.

Instrument: FP7, Collaborative Research Project

Total Cost: 4,403,104 €

EC Contribution: 3,490,000 €

Duration: 36 months

Start Date: 1st January 2011

Consortium: 19 partners from 12 countries and 2 from EU

Project Coordinator: Deltares (NL)

Project Web Site: www.dewfora.net

Key Words: Drought, forecasting, Early warning, indicators, mitigation, adaptation, hazard, climate change, Africa, preparedness, water resources

THE CHALLENGE

Drought is one of the major natural hazards in many parts of the world, including Africa and some regions in Europe, and drought events have resulted in extensive damage to livelihoods, environment and economy. Recent predictions on climate change suggest this situation may worsen, projecting an increased frequency and severity of drought in many areas. Effective drought risk management, including the provision of advance warning and the implementation of effective mitigation in response to drought, however, offers the potential to reduce the adverse impacts. Preparedness and education can increase resilience of affected societies, allowing them to cope better with drought and its impacts, and help break the disaster-response cycle.

PROJECT OBJECTIVES

The principal aim is to develop a framework for the provision of early warning and response through drought impact mitigation for Africa. This framework will cover the whole chain from monitoring and vulnerability assessment, to forecasting, warning, response and knowledge dissemination.

The project has been designed to achieve four key targets:

- *Assessing existing capacities* in Africa in terms of drought monitoring, forecasting and warning, enhancing *drought monitoring* methods through *improved indicators*, and understanding the relationship between drought hazard and vulnerability in the current climate and how this will change as a result of *climate change*.
- *Improving performance* of methods used for *forecasting droughts* in Africa by implementing state-

of-the-art in (seasonal) meteorological, hydrological and agricultural forecasting.
- *Improving early warning* of droughts through appropriate *thresholds* for initiation of mitigation activities, and establishing *strategies* to increase resilience to drought at seasonal and longer time scales.
- *Transferring knowledge* to practitioners and *building capacity* in Africa to ensure that knowledge developed continues to be exploited beyond the project

Methodology

The DEWFORA project is structured in eight work packages. **WP1** includes all activities related to the management of the consortium and communication with the European Commission. **WP2** reviews existing capacities in Africa for monitoring, forecasting and early warning of drought on local, regional and continental scales, as well as mitigation practices and adaptation strategies. A gap analysis is included to help identify constraints and opportunities for improvement. **WP3** assesses and maps vulnerability to drought through newly developed indicators. It assesses the expected impacts of climate change on the frequency of occurrence and persistence of droughts in Africa and the impact on drought vulnerability. **WP4** concentrates on drought forecasting from the meteorological, hydrological and agricultural perspectives. Appropriate methods for forecasting drought at medium to seasonal time scales are developed and made operational within a pilot drought forecasting system. **WP5** addresses early warning of drought and the response to such warnings. Response is assessed at the community, national and trans-boundary scales. Advances made in the previous work packages, as well as experience gained in the case studies will be consolidated to establish a framework and guidelines for effective drought early warning and response in Africa. **WP6** integrates the advances made in drought monitoring, forecasting and warning by applying them in the *case studies*. The methods developed are tested and refined in order to ensure an efficient contribution to early warning and response. In addition, a prototype pan-African drought monitoring and forecasting system is developed, and a comparative review of European and African initiatives performed. **WP7** focuses on disseminating the knowledge gained, and ensures sustainable embedding of that knowledge with stakeholders and water resources capacity building programmes. **WP8** is dedicated at establishing scientific synergies and exchange with related research projects in Europe and Africa, and outreach to policy networks in Africa and Europe.

Expected Results

DEWFORA expects to contribute to an increase in the effectiveness with which drought forecasting, warning can response can be provided. It will provide guidance on how and where drought preparedness and adaptation should be targeted to contribute to an increase in resilience and improve effectiveness of drought mitigation measures.

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