

IHP-VIII Responses: 6 Themes, 3 Axes 2014-2021

Improve knowledge and innovation to address water security challenges.

Axis 1: Mobilizing international cooperation to improve knowledge and innovation to address water security challenges.

WATER-RELATED
DISASTERS AND
HYDROLOGICAL
CHANGE



GROUNDWATER
IN A CHANGING
ENVIRONMENT



ADDRESSING
WATER SCARCITY
AND WATER
QUALITY



WATER AND
HUMAN
SETTLEMENTS OF
THE FUTURE



ECOHYDROLOGY
ENGINEERING
HARMONY FOR
A SUSTAINABLE
WORLD



EDUCATION,
KEY TO WATER
SECURITY

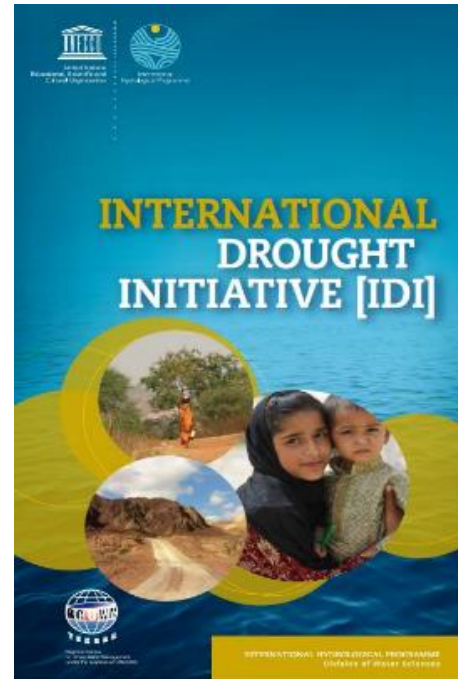
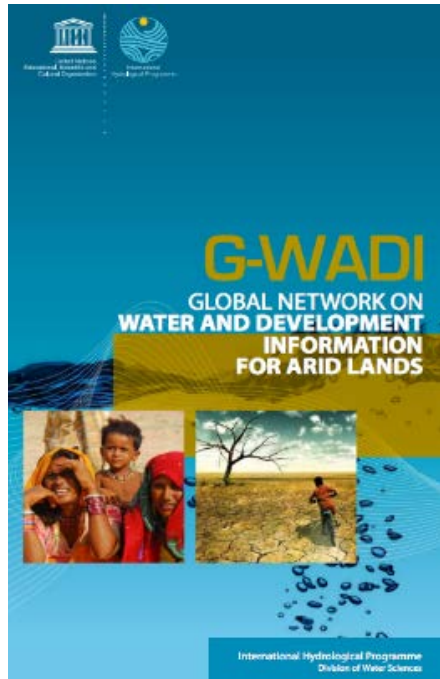


WATER SECURITY, ADDRESSING LOCAL, REGIONAL AND GLOBAL CHALLENGES

Axis 2: Strengthening the Science-Policy interface to reach water security at local, national, regional and global levels

AXIS 3
Developing
institutional
and human
capacities
for water
security and
sustainability

Global networking and knowledge sharing



Networks for **global networking** and **knowledge sharing** between international entities to:

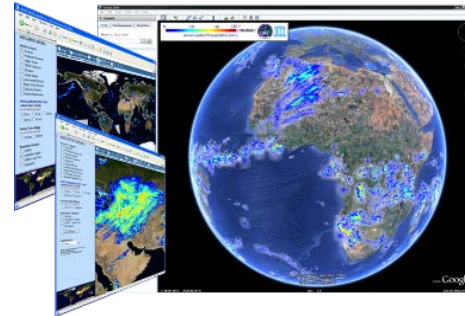
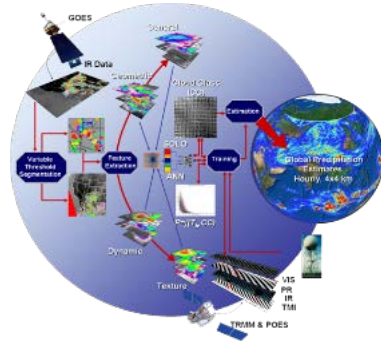
- Improved understanding of hydrological systems and water management needs in arid areas, river basins, etc. and surveys drought management and flood hazards;
- Develops capacity building to better understand and respond to floods hazards while taking advantage of their benefits;
- Promote regional and international cooperation on droughts and floods issues:
- **Focus on research, information networking, education and training to empower communities.**

Knowledge of hydrological systems: G-WADI Geo-Server

Geo-Server that provides access to very high resolution (0.04) satellite-based quasi-global precipitation products in near real time to worldwide users.



Algorithm

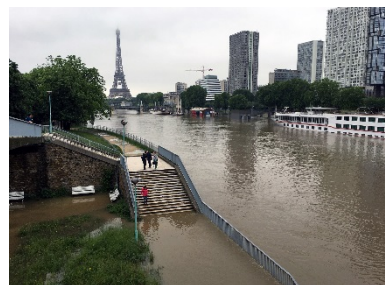


Web Services

Applications



Drought Management



Flood Forecasting



Water Resources

Sharing data and exchanging experience to support research and sound water management

Namibia Daily Flood Bulletin



Namibia Hydrological Services
Private Bag 13184
Ministry of Agriculture, Water and Forestry
Government Office Park
Namibia

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hydrologynamibia@gmail.com



HYDROLOGICAL SERVICES NAMIBIA- DAILY FLOOD BULLETIN: 15 March 2016

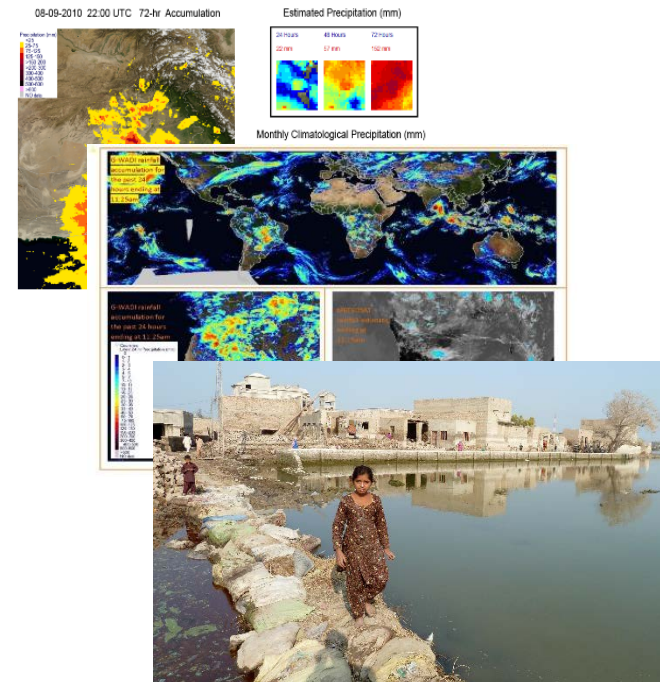
The Namibia Drought Hydrological Services (NHS) uses G-WADI GeoServer data to prepare a **daily flood/hydrological drought bulletin** with up-to-date information on flood and drought conditions for local communities.

Pakistan floods, 2010

Near-real-time high resolution Satellite-based Observations of rainfall: Pakistan Flooding

UNESCO-IHP launched a major project in cooperation with the Government of Japan that aims to upgrade the flood forecasting and early warning systems of Pakistan, and to conduct risk mapping of flood plains along the Indus River.

<http://chrs.web.uci.edu/PakFlooding.html>



Providing the Tools to Identify Climate Risks

Monitoring and Early Warning of Droughts and Floods

African Flood and Drought Monitor

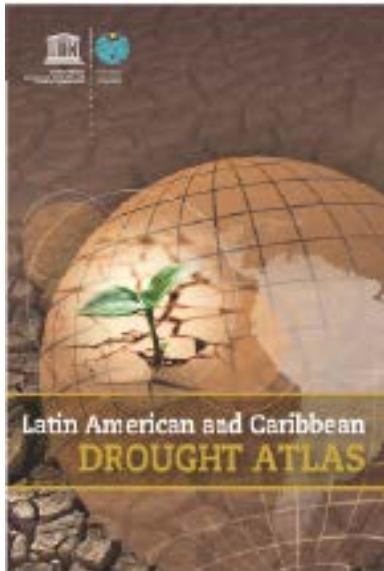


Latin American Flood and Drought Monitor



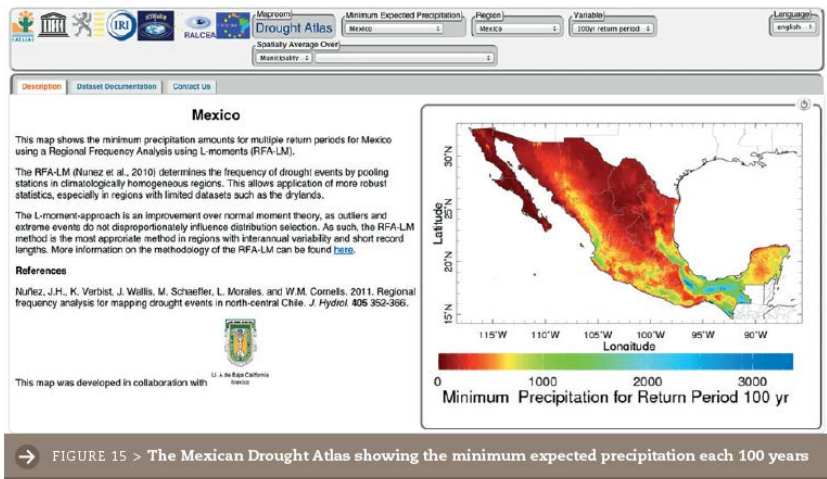
User Interface: <http://stream.princeton.edu>

Towards an Integrated Drought Risk Management



Latin American and Caribbean Drought Atlas

- ✓ Training sessions were organized to capacitate different LAC member countries on the methodology of the Drought Atlas.
- ✓ During 2015, the Latin American Drought Atlas was finalized and most countries (17) of Latin America and a significant set of Caribbean Countries (4) were supported in that development.



The online Drought Atlas

Provides stakeholders with a **tool to identify their drought hazard** for any location in the Region of Latin America and the Caribbean, bringing the information at the level where it is most needed for decision making.

In 2014 the **National Drought Observatory for Peru** was launched, based on the experience of the **Agroclimatic Observatory in Chile (2013)**

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04.04.2014 - UNESCO Office in Santiago

Agroclimatic observatories expand in Latin America: Peru will start monitoring droughts



Taller en Lima. Foto: Autoridad Nacional del Agua del Perú.

The National Drought Observatory for Peru is launched to evaluate, monitor and eventually predict the behaviour of drought processes in different areas. It will start to be implemented in Peru in 2014 as an information tool to propose prevention and mitigation measures in benefit of the Peruvians.

The initiative is rooted in the experience of the Agroclimatic Observatory in Chile, which is already operational since 2013 for the agro-sector in this southern country. The Peruvian National Observatory currently counts with support from UNESCO and a multisectorial participation; and it is expected to count with a technological platform that unifies meteorological, hydrological and agricultural information from different national and international sources. This information will be made available to the different authorities and entities involved in water management, with the objective to mitigate the effect of drought occurrences, as well as to promote measures of impact prevention.

The implementation in Peru was informed by the National Water Authority on March 31 2014 in Lima, during a working meeting, that lead to the instalation of the Steering Committee, followed by an initial capacity building to the future system users that

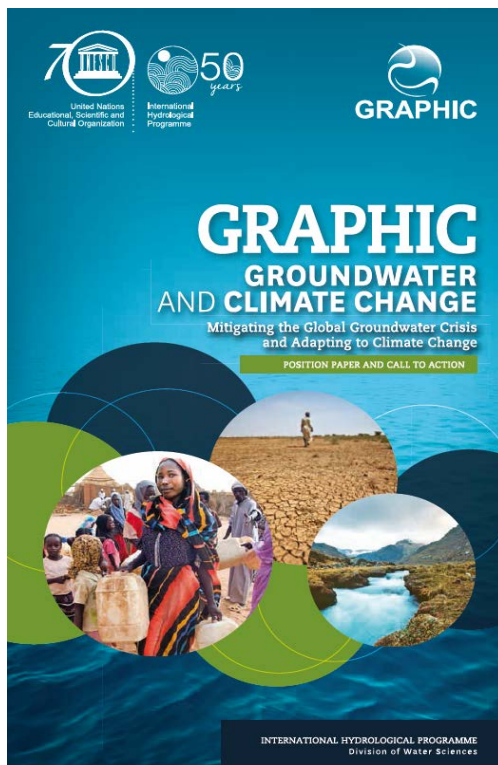
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COUNTRIES located in ARID and SEMI-ARID AREAS depend widely on GROUNDWATER RESOURCES



- If managed sustainably, groundwater resources can play an important role in setting up adaptation measures to cope with climate change
- Changes in recharge due to climate change can seriously affect the storage capacity of aquifers, diminishing the of freshwater reserves of many countries.

Thank you!



United Nations
Educational, Scientific and
Cultural Organization



International
Hydrological
Programme



Sustainable
Development
Goals

CLEAN WATER
AND SANITATION

<https://en.unesco.org/themes/water-security/hydrology>