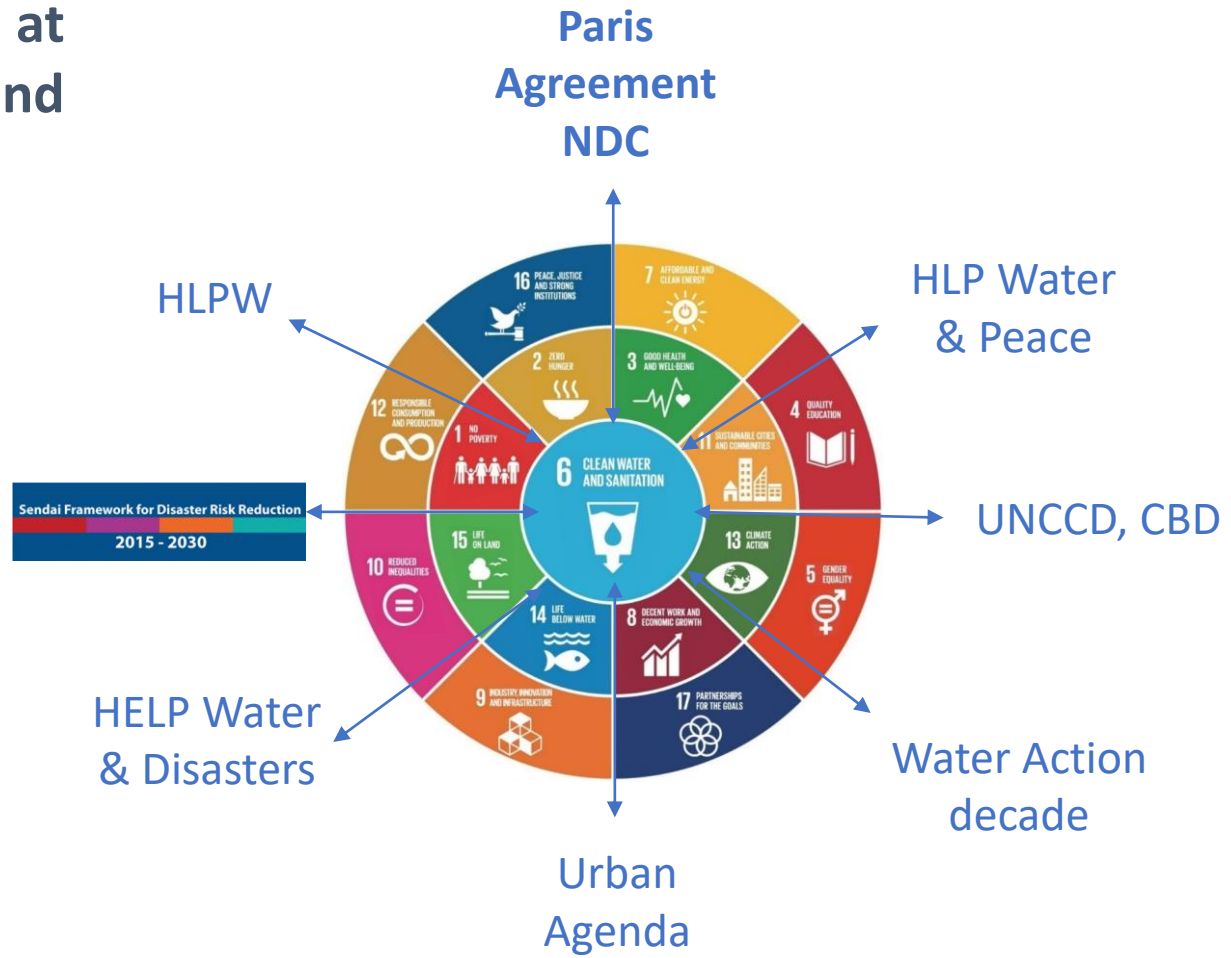
UNESCO Work on Early Warning Systems

AWCI Session for the 15th AOGEO Symposium

Abou Amani | Director of Water Sciences Division | UNESCO

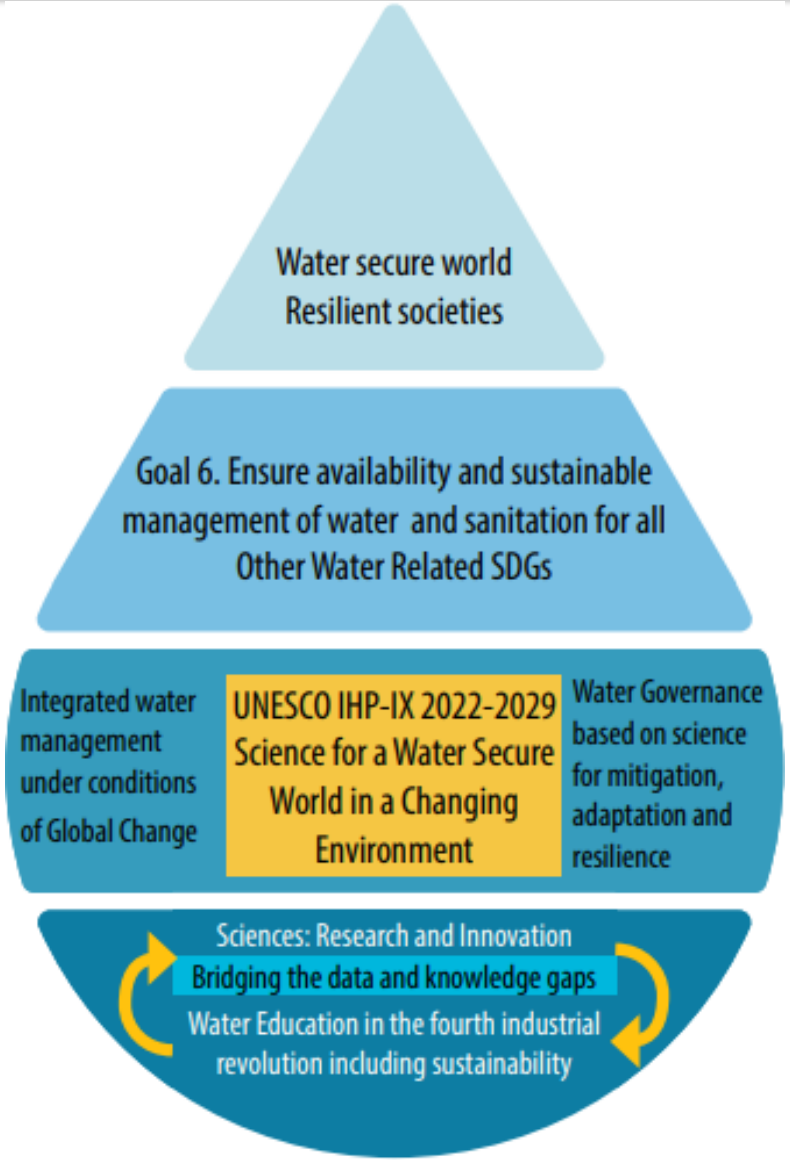
Water, SDGs and other related agendas

Water connects and is at the centre of SDGs and other related agendas:



Water & Climate Coalition WMO, UN system

IHP-IX “Science for a Water Secure World in a Changing Environment” (2022-2029)



Five priority areas:

- Scientific research and innovation
- **Water Education** in the Fourth Industrial Revolution including Sustainability
- Bridging the **data-knowledge gap**
- Integrated **water resources management** under conditions of global change
- Water Governance based on science for mitigation, **adaptation and resilience**

34 expected outputs

150 Key activities (draft implementation Plan)

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Mobilizing UNESCO Water Family

Aims to advance hydrological knowledge by supporting scientific research programmes

36 Category 2 Centres

71 Chairs

169 National Committees

WWAP

Mobilizing UNESCO Water Initiatives

As a programme at the global level, IHP covers a wide spectrum of initiatives:

INTERNATIONAL DROUGHT INITIATIVE

friend-water

Flow Regimes from International Experimental and Network Data

HELP

Hydrology for the Environment, Life and Policy

WORLD'S LARGE RIVERS INITIATIVE

World's Large Rivers Initiative

WATER MUSEUMS GLOBAL NETWORK

INTERNATIONAL FLOOD INITIATIVE

IWRM

Integrated Water Resources Management

MAR

Managing Aquifer Recharge

UWMP

Urban Water Management Programme

G-WADI

Global Network on Water and Development Information in Arid Lands

isarm

Internationally Shared Aquifer Resources Management

IHP WINS

Water Information Network System

WHYMAP

World Hydrogeological Map

iSi

International Sediment Initiative

LAND SUBSIDENCE

LaSII

IIWQ

International Initiative on Water Quality

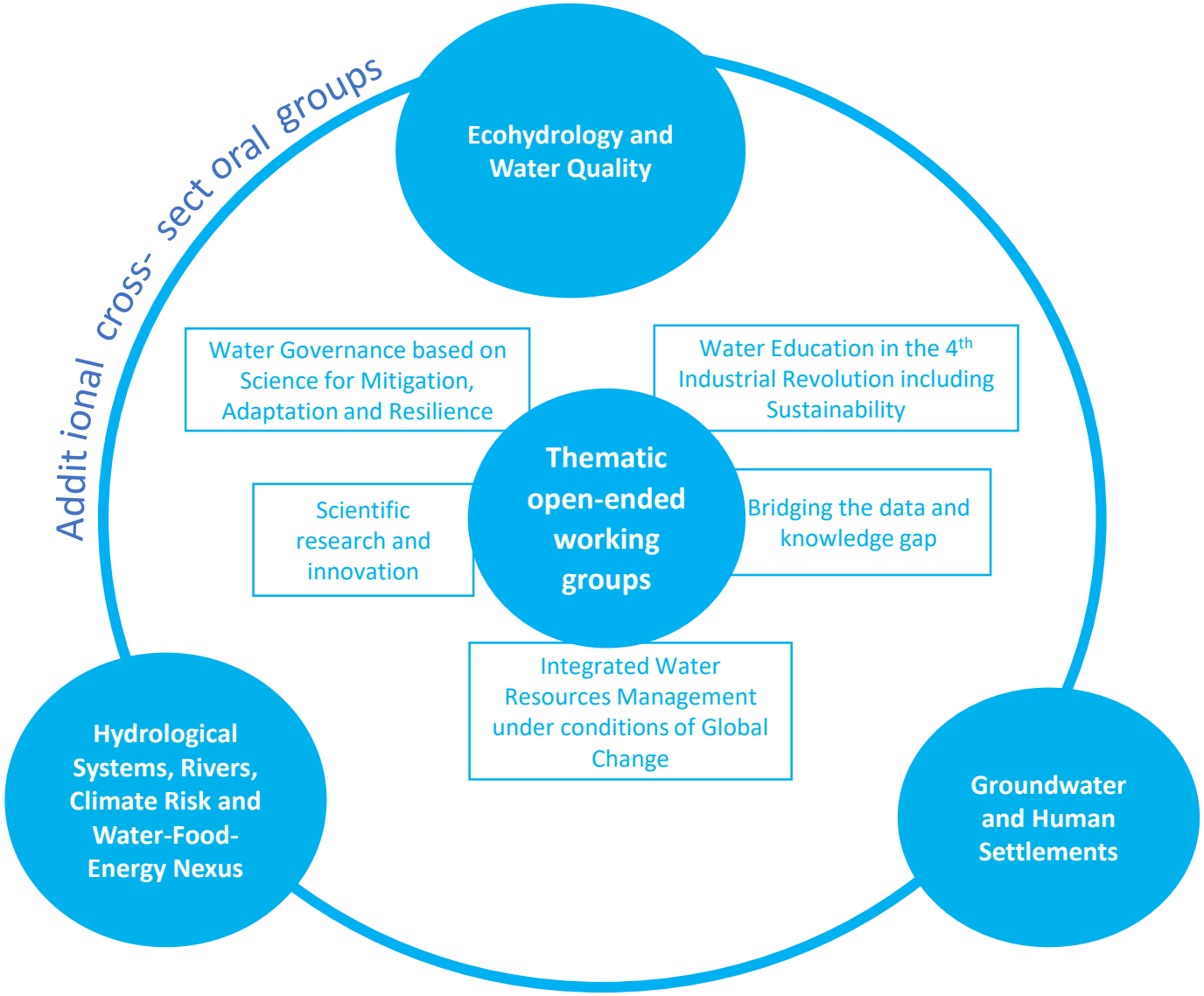
PCCP

From Potential Conflict to Cooperation Potential

GRAPHIC

Groundwater Resources Assessment under the Pressures of Humanity and Climate Change

IHP-IX thematic working groups for operational implementation



Thematic OEWG
1. Scientific Research and Innovation
2. Water Education in the Fourth Industrial Revolution including Sustainability
3. Bridging the data and knowledge gap
4. Integrated Water Resources Management under conditions of Global Change
5. Water Governance based on Science for Mitigation, Adaptation and Resilience

Additional cross-sectoral groups:
1. Hydrological Systems, Rivers, Climate Risk and Water-Food-Energy Nexus
2. Groundwater and Human Settlements
3. Ecohydrology and Water Quality;

IHP-IX “Science for a Water Secure World in a Changing Environment” (2022-2029)

- **1.6 Scientific knowledge, methodologies and tools in addressing water-related disasters, such as flood and drought elaborated and/or enhanced towards timely forecasting**
- **4.2 Research on upstream-downstream river uses for hydropower, navigation, fishery, leisure activities, water supply, drought risk management and flood risk management conducted and shared by the scientific community and UNESCO Water Family to minimize socio-economic and ecological consequences**
- **5.1 Awareness raising of decision makers at all levels on the importance of science-based water governance by the UNESCO Water Family supported, to enhance the overall resilience of communities to effects of global change**
- **5.5 Capacities of the scientific community and decision makers strengthened on new frameworks and tools, to underpin water governance and build resilience**

UNESCO: Early Warning Systems

UNESCO has expanded its work in EWS initiatives through **IHP** and the **IFI, G-WADI** and **IDI Flagship Initiatives.**

Some milestones are:

- Drought Monitor for Africa (2010)
- Indus-Integrated Flood Analysis System (IFAS) (2010)
- Global near-real-time rainfall estimates (iRain) (2011)
- Flood and Drought Monitor for Latin America and the Caribbean (2014)
- Chilean Flood and Drought Monitor (2016)
- Implementation of National Flood and Drought EWS in southern African countries (2019 onwards)
- Transboundary Flood EWS in Western Africa and Zimbabwe/Mozambique (2020 onwards)

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Intergovernmental Hydrological Programme

INTERNATIONAL FLOOD INITIATIVE

UNESCO • WMO • UNU • ISDR

IDI

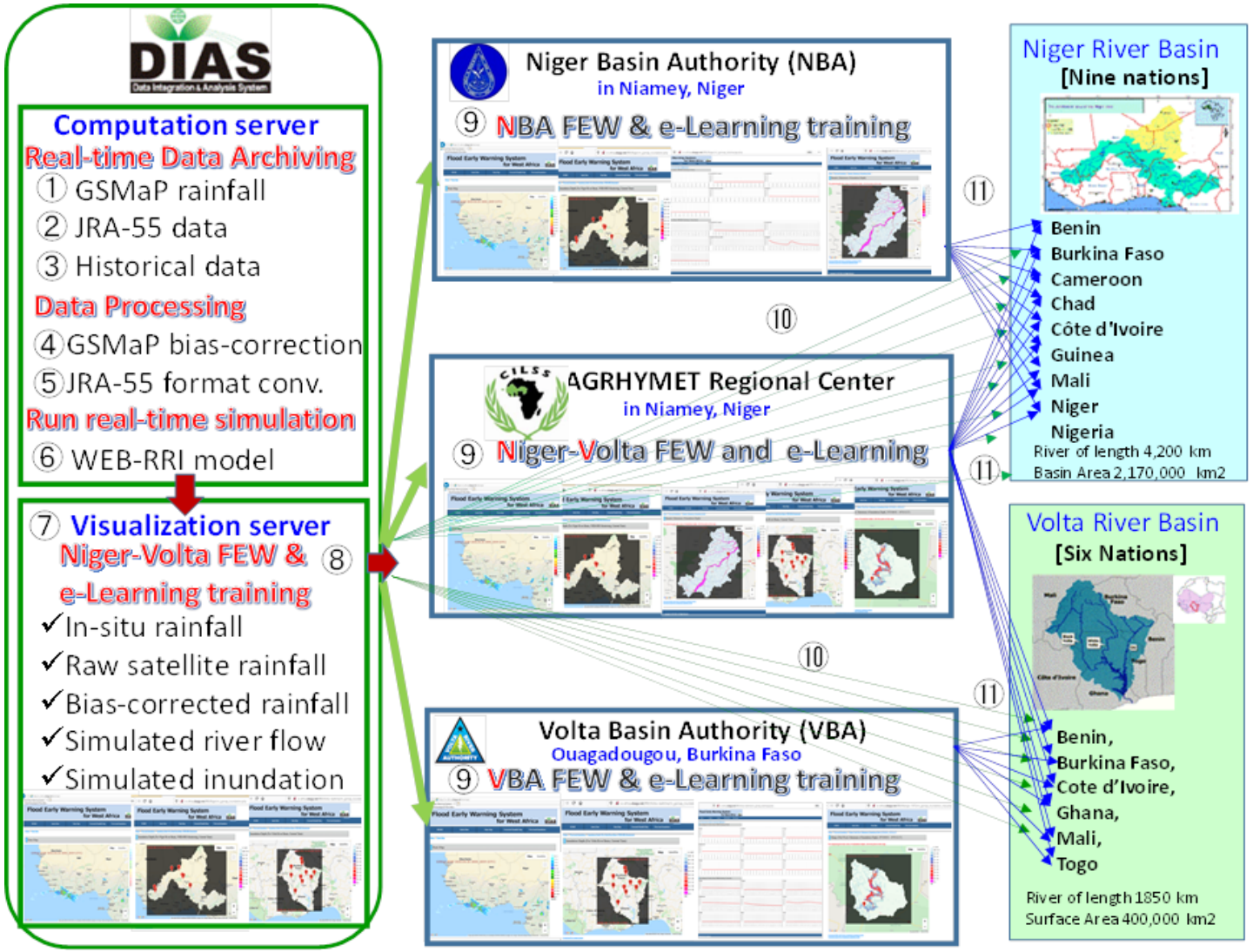
International Drought Initiative

G-WADI

UNESCO: Early Warning Systems (Africa)

Regional Flood Early Warning System (FEWS) prototype for Niger and Volta River Basin on Data Integration and Analysis System (DIAS)

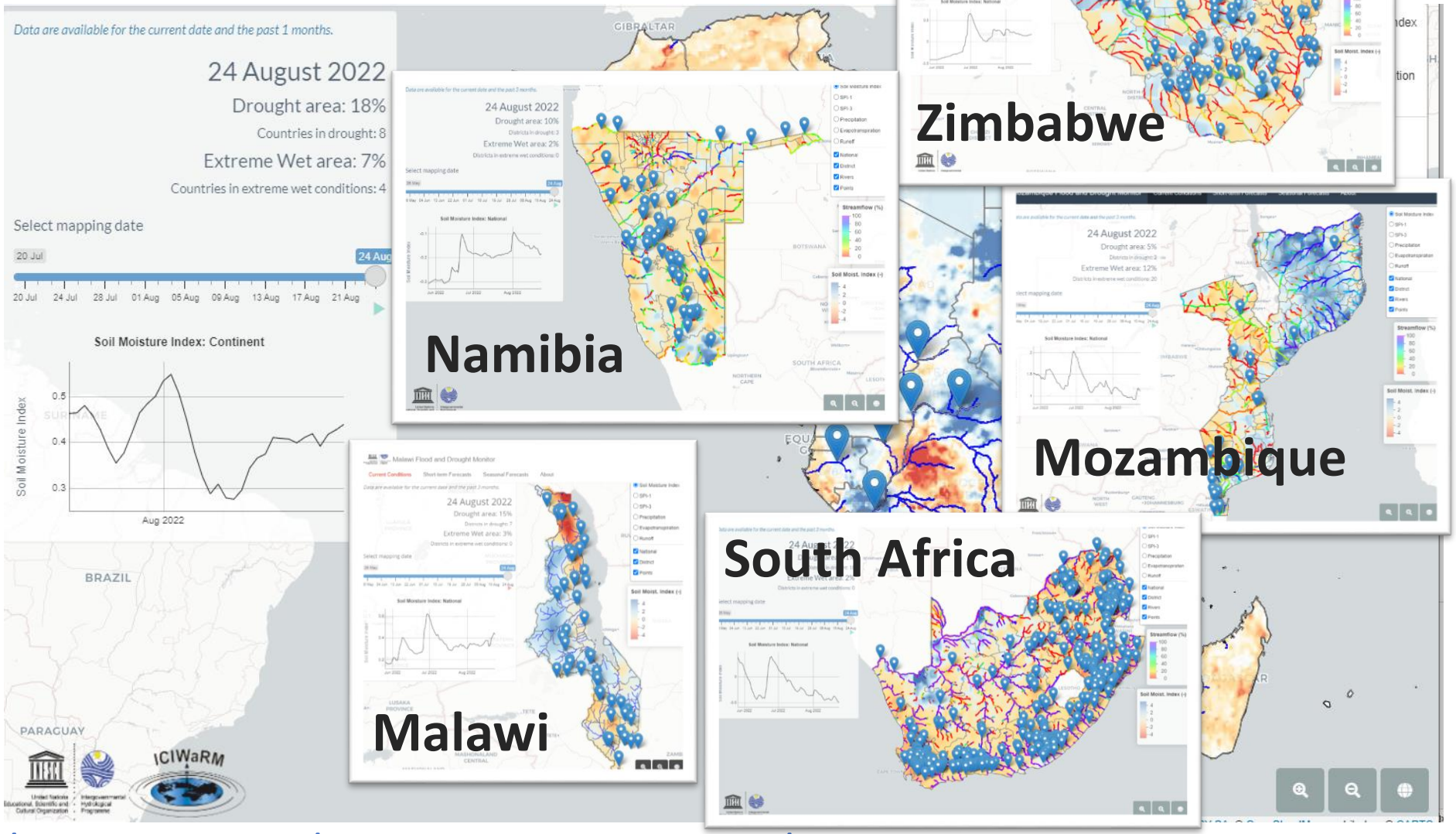
- AGRHYMET, NBA, VBA and 11 countries of the Niger and Volta River basins
- E-Learning: Training of Experts (ToE)
- E-Learning: Training of Trainers (ToT)



UNESCO: Early Warning Systems (Africa)

Flood and Drought Monitor Platforms

- **Continental: Africa**
- **National:**
  - Zimbabwe
  - Mozambique
  - Malawi
  - Namibia
  - South Africa



Accessible en: https://en.unesco.org/disaster-risk-reduction/ews-water

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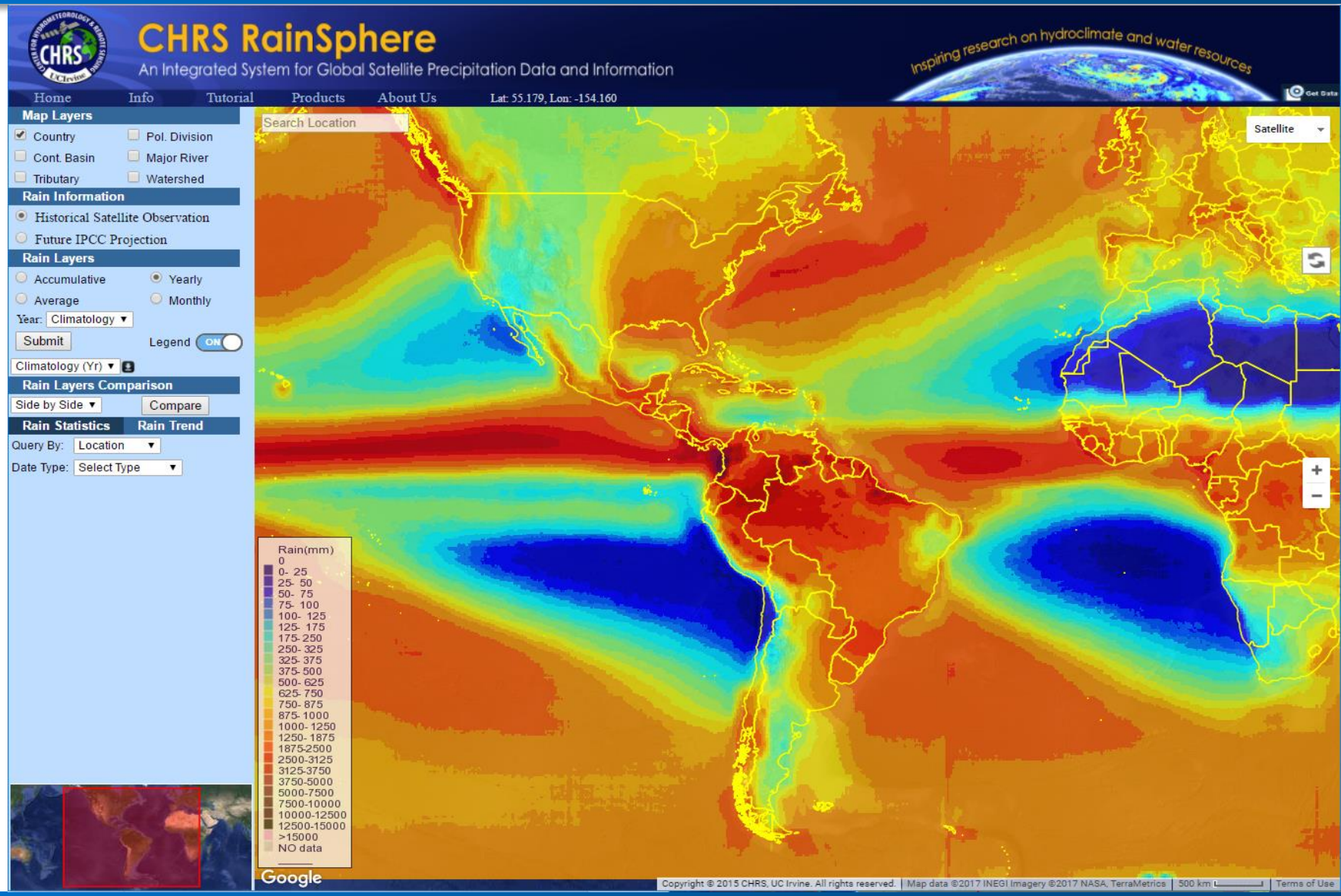
UNESCO: Early Warning Systems (Worldwide)

- https://rainsphere.eng.uci.edu/
- An integrated system for global satellite precipitation data and information developed by CHRS and UNESCO



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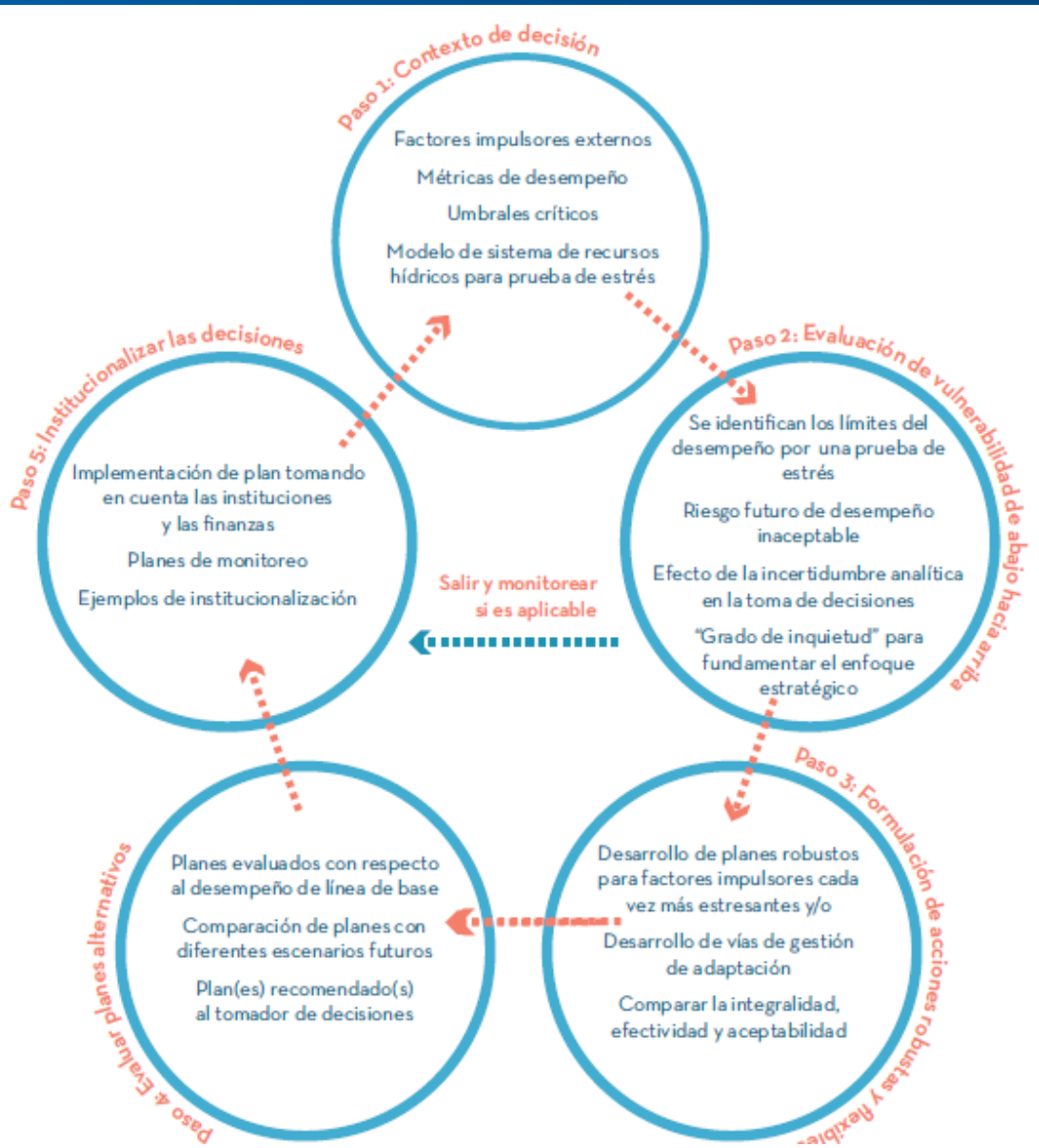
Climate Risk Informed Decision Aanalysis (CRIDA)

Outreach and Capacity Building

- Framework to identify potential water security risks in hydrological systems providing a stepwise planning process to identify and address the challenges for sustainable water resources management through a five-step approach
- Online course on UNESCO Open Learning
- 814 participants in the English version
- 369 participants in the Spanish version
- 11 case studies from around the world (Sri Lanka, Thailand, Philippines, Colombia, Chile, Mexico, Ecuador, Zambia, Sweden, Germany and United States of America)
- COP27: launching of English, Spanish, French and Arabic manuals and online courses



Interactive themes of the Water Conference

1. **Water for Health: Access to safe drinking water, hygiene and sanitation (SDG 6.1, 6.2, 6.3 and SDGs 1, 3, 4, 5, 17);**
2. **Water for Development: Valuing Water, Water-Energy-Food Nexus and Sustainable Economic and Urban Development (SDG 6.3, 6.4, 6.5 and SDGs 2, 11, 12);**
3. **Water for Climate, Resilience and Environment: Source to Sea, Biodiversity, Climate, Resilience and DRR (SDGs 6.5, 6.6, 7, 11.5, 13, 14, 15);**
4. **Water for Cooperation: Transboundary and International Water Cooperation, Cross Sectoral Cooperation and Water Across the 2030 Agenda (SDG 6.5, 6.b and SDG 16, 17);**
5. **Water Action Decade: Accelerating the implementation of the objectives of the Decade including through the UN SG's Action Plan.**

UN 2023 WATER CONFERENCE

Thank you

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