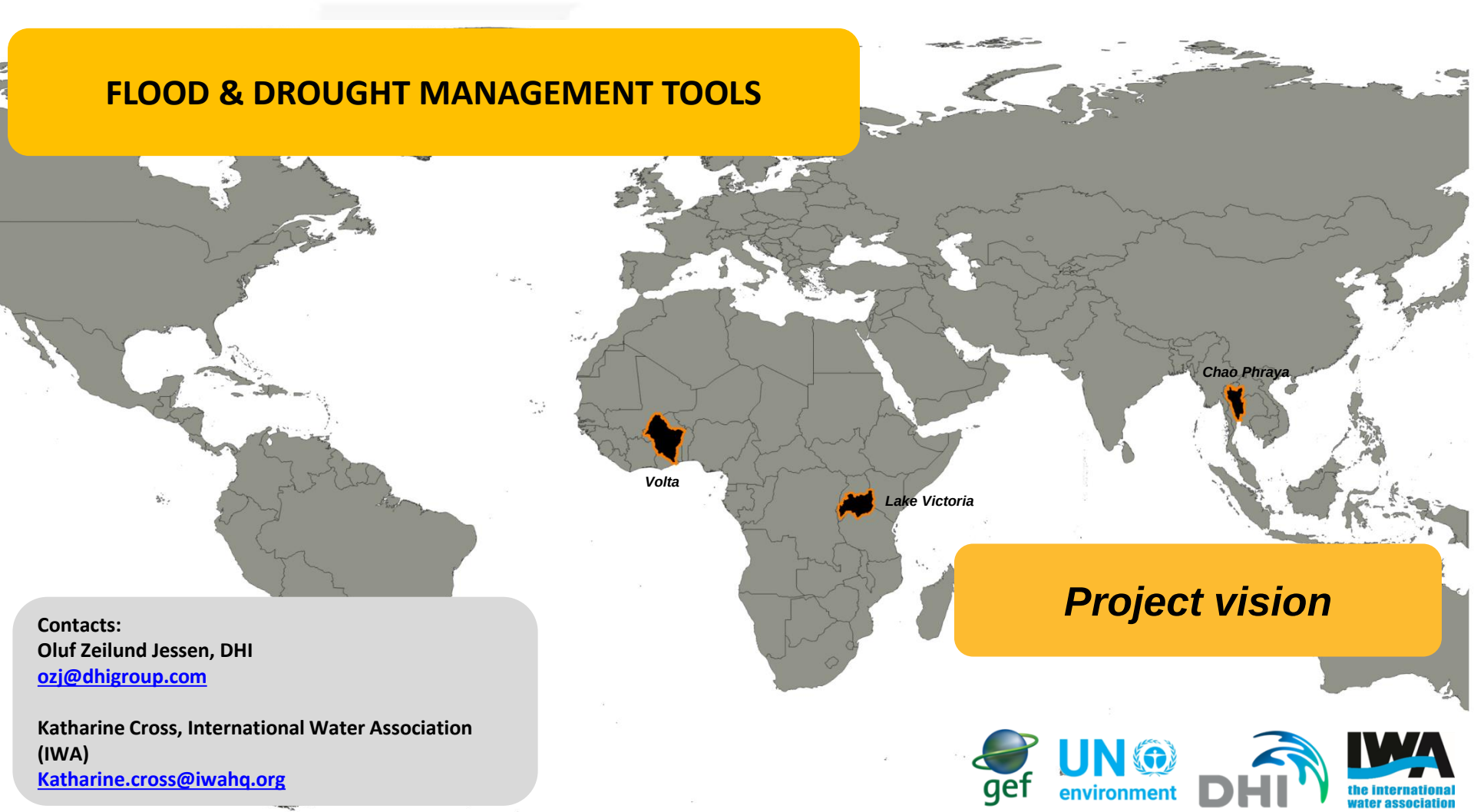
FLOOD & DROUGHT MANAGEMENT TOOLS



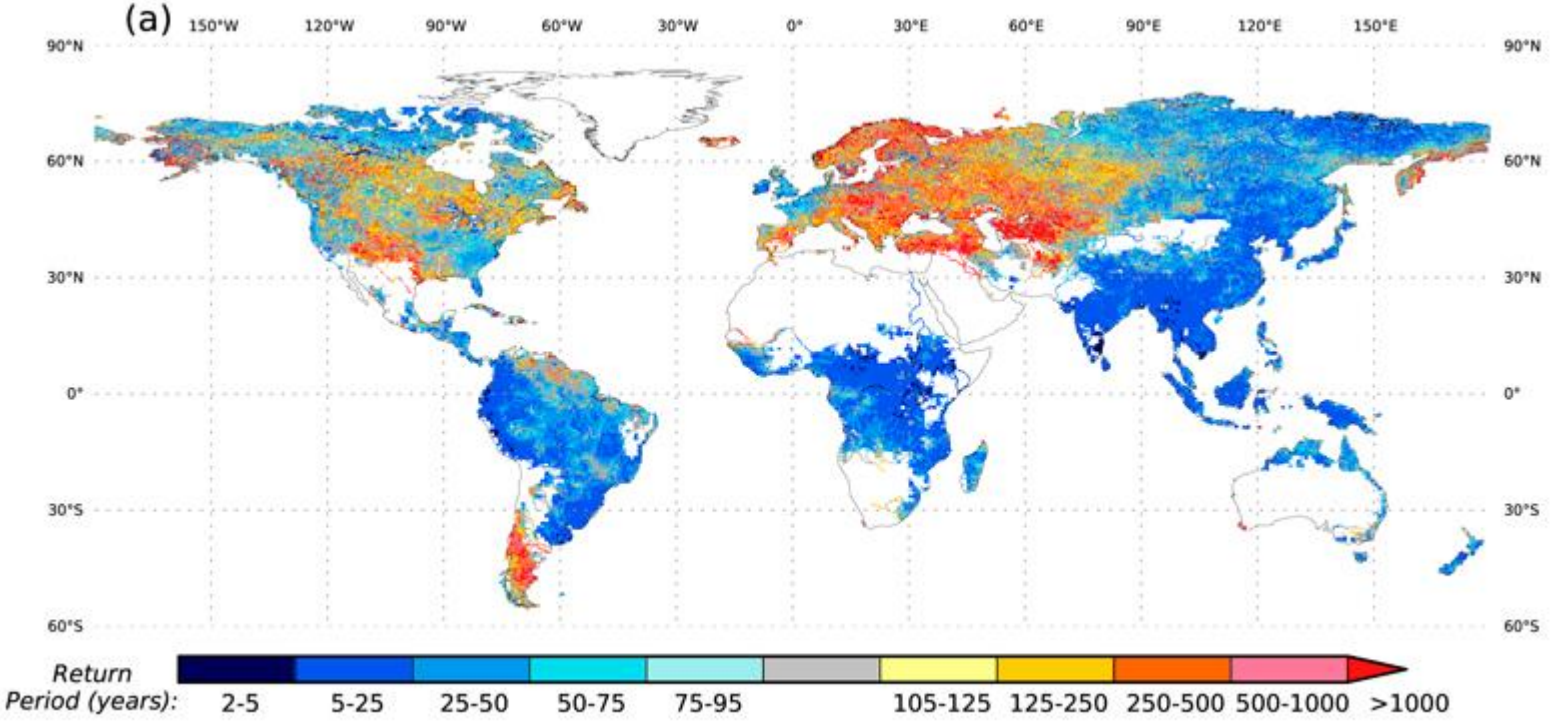
Project vision

Contacts:
Oluf Zeilund Jessen, DHI
ozj@dhigroup.com

Katharine Cross, International Water Association (IWA)
Katharine.cross@iwahq.org

Global Context of Floods and Droughts

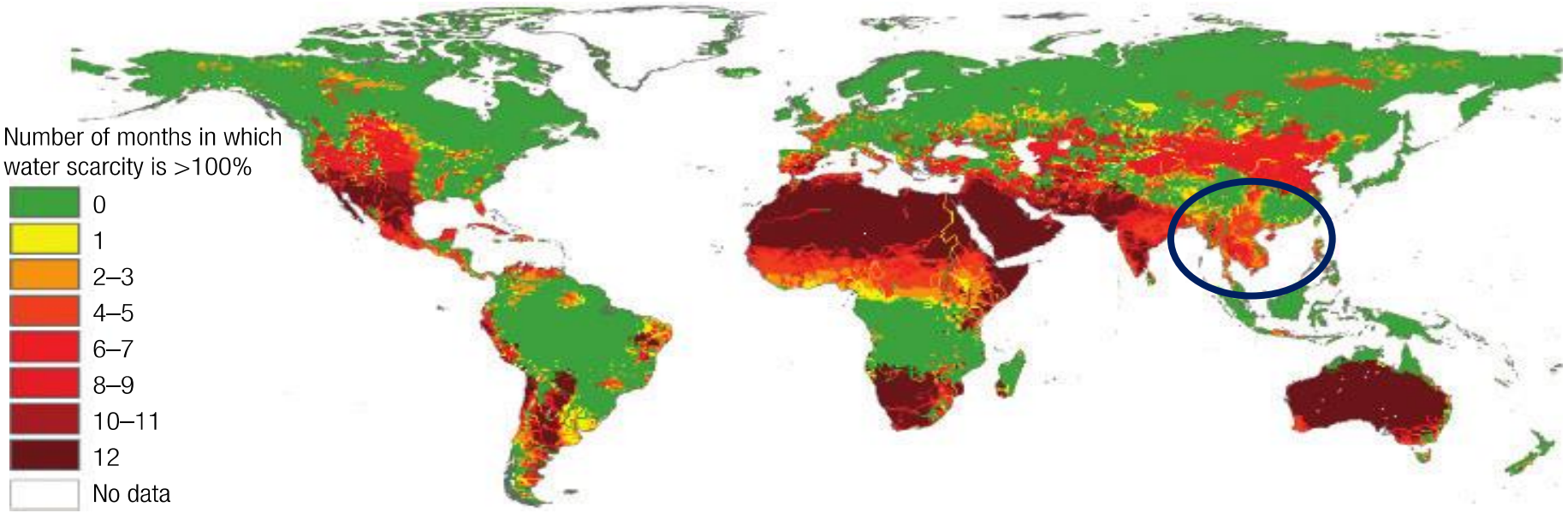
Future Flood Risk



Source: Hirabayashi Laboratory, The University of Tokyo
Projected change in flood frequency

Global Context of Floods and Droughts

Water Scarcity

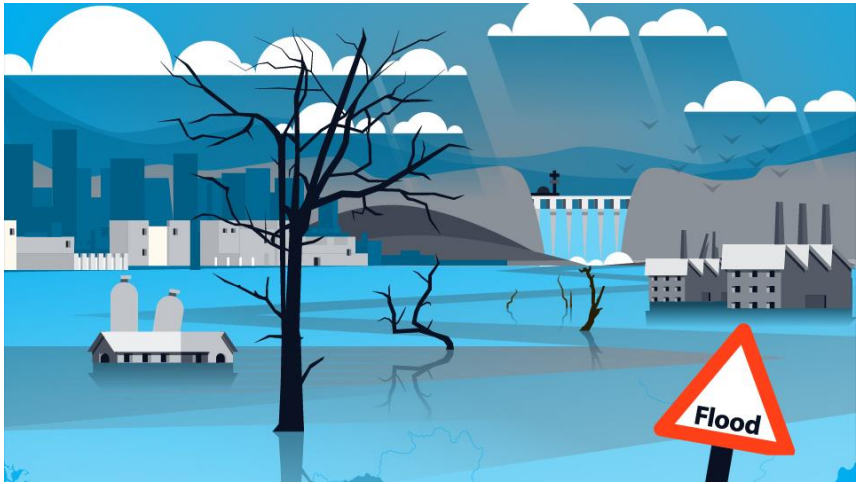


Source: Mekonnen and Hoekstra 2016.

The number of months per year in which blue water scarcity exceeds 1.0 (period 1996-2005)

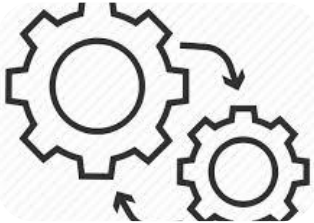
About the Flood and Drought Management Tools Project - Why?

Increasing frequency, unpredictability and severity of flood and drought events. A need for adaptive planning and management of water resources at basin and local level



Project objective

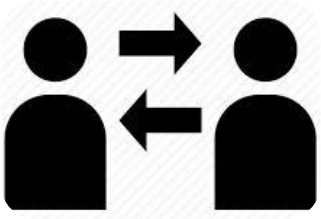
To improve the ability of land, water and urban area managers across scales to address floods and droughts in their planning processes by developing technical software tools which can be applied to address these challenges



Development of a methodology

Validation and testing in pilot basins

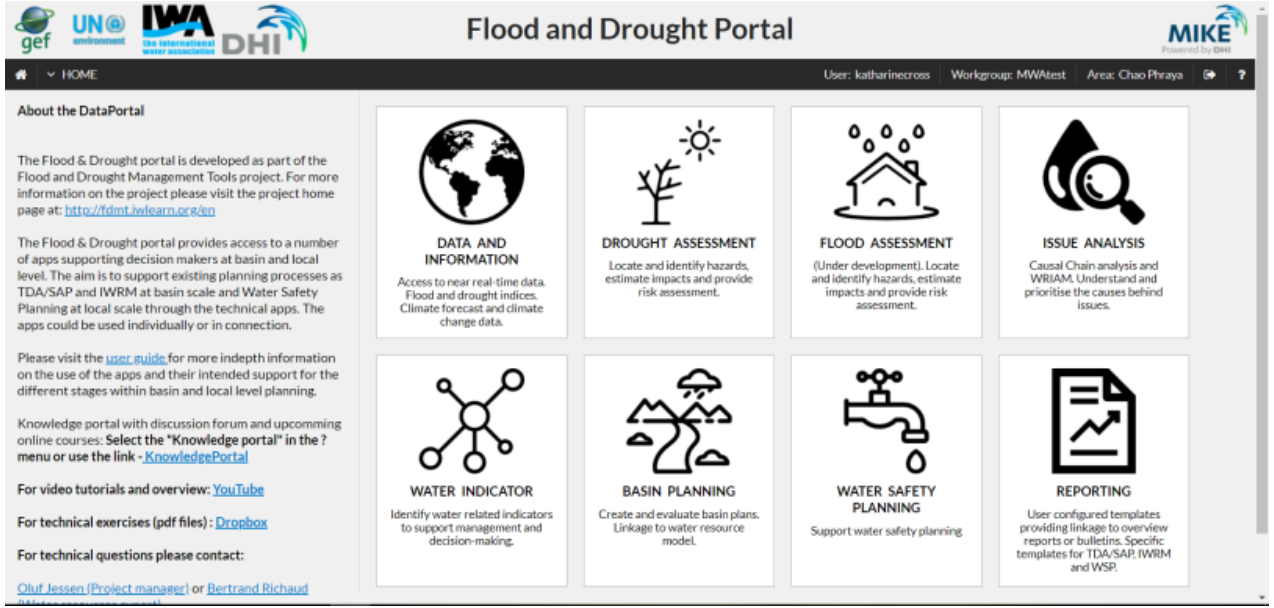
Validation and testing at local level



Capacity building and communication

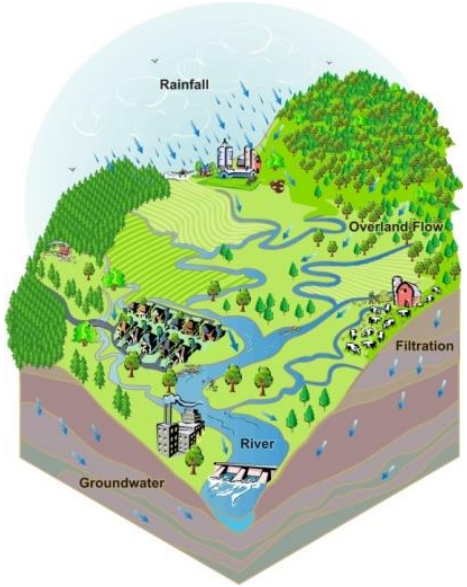
About the Flood and Drought Management Tools Project - How?

Developing web-based tools to support planning and decisions to address flood and drought risks across scales



www.flooddroughtmonitor.com

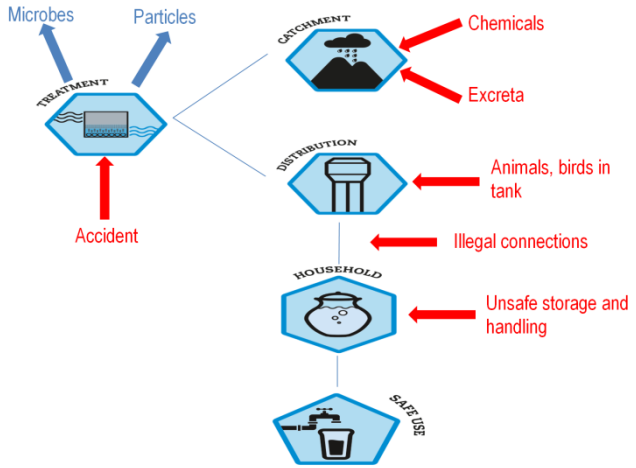
Support for basin and water utility planning



Transboundary Diagnostic Analysis/ Strategic Action Programmes – *Tools developed by the Global Environment Facility to assess the state of transboundary basins, and prioritise actions to address key threats.*

Integrated Water Resources Management- *A process of planning that integrates the management of water, land and other related resources for improved sustainability.*

Water Safety Plans – *a comprehensive risk assessment that address health related risks and provide an analysis of all steps in the water supply from catchment to consumer.*



Urban Water Safety Planning – WHO, Regional Office for South-East Asia 2015

About the Flood and Drought Management Tools Project - Who?

Implemented by UN Environment; Executed by DHI and IWA over 4 years. End users are water resource agencies/basin organisations and water utilities.

www.flooddroughtmonitor.com

About the Flood and Drought Management Tools Project - Where?

Global applicability, portal and its applications have been developed and tested with stakeholders across 3 pilot basins

Danube and Nile Basin as learning basins

Flood and Drought Management Tools project *Thailand*

- Stakeholder consultations in tool design and functionality
- 3+ Technical trainings at basin and water utility levels
- Flood and Drought Symposium 2015
- **Flood and Drought Final Event – June 6th, 2018**

Hydro and Agro Informatics Institute (HAII)

Provincial Waterworks Authority (PWA)

Metropolitan Waterworks Authority (MWA)

FLOOD & DROUGHT MANAGEMENT TOOLS

Project overview

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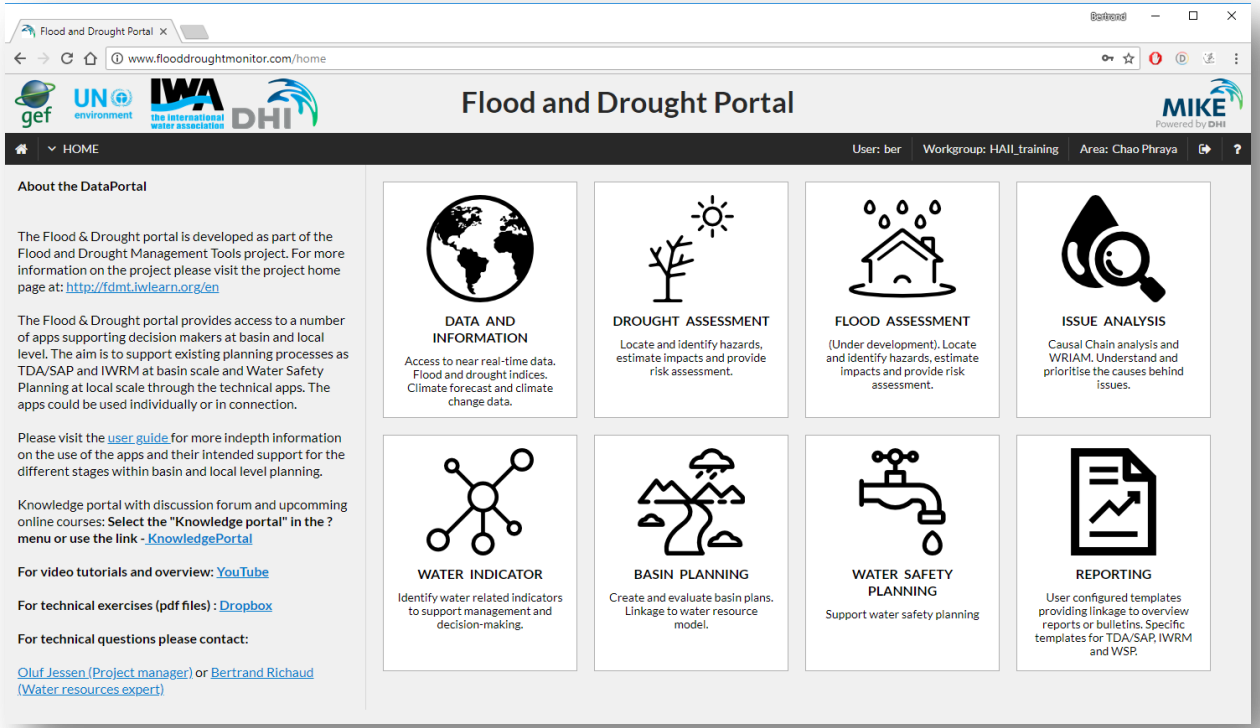
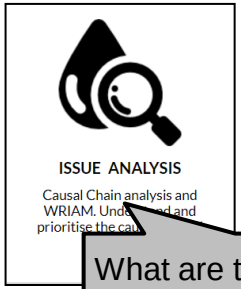
Flood and Drought portal overview

- Suites of applications to support planning
- Accessible to all stakeholders in Thailand
- Tailored to Chao Phraya basin and Thailand area



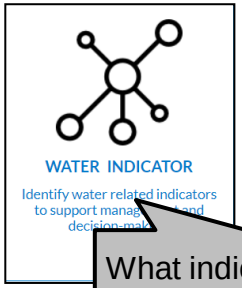
Technical Applications



ISSUE ANALYSIS

Causal Chain analysis and WRIAM. Und[illegible] and prioritise the cau[illegible]

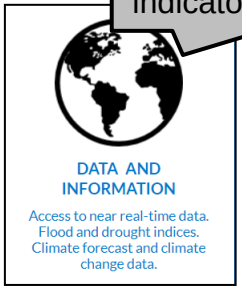
What are the issues and underlying causes in my area?



WATER INDICATOR

Identify water related indicators to support manag[illegible] and decision-mak[illegible]

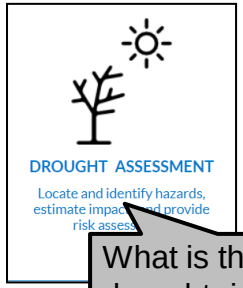
What indicators can be used to monitor the state of the issues?



DATA AND INFORMATION

Access to near real-time data. Flood and drought indices. Climate forecast and climate change data.

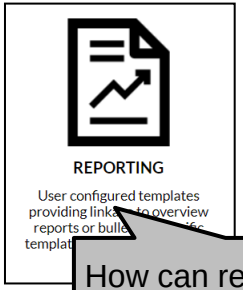
What data can be used to calculate the indicators?



DROUGHT ASSESSMENT

Locate and identify hazards, estimate impac[illegible] and provide risk assess[illegible]

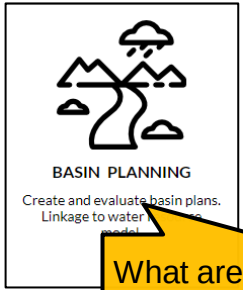
What is the level of drought risk in my area?



REPORTING

User configured templates providing link[illegible] to overview reports or bulle[illegible] templat[illegible]

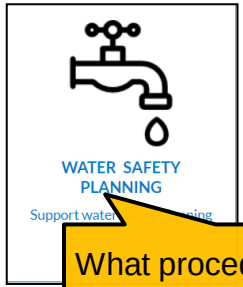
How can results and data be disseminated?



BASIN PLANNING

Create and evaluate basin plans. Linkage to water [illegible] model[illegible]

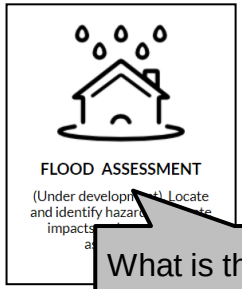
What are the planning options to address issues and impacts?



WATER SAFETY PLANNING

Support wate[illegible]ning

What procedures are needed to address risks to water supply?



FLOOD ASSESSMENT

(Under developm[illegible]t) Locate and identify hazard[illegible]te impacts a[illegible]

What is the assessment of flood risk in my area?

Key benefits to Thailand…

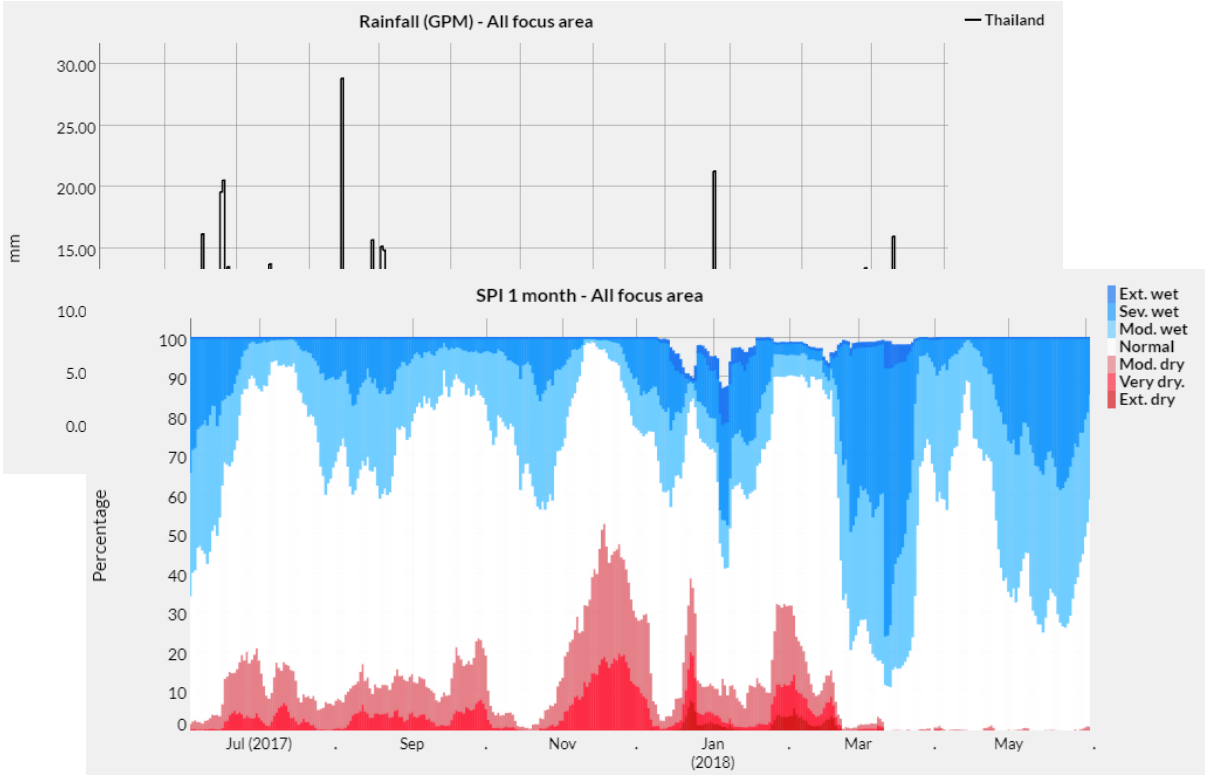
Access to near real-time data and forecast

Automated reporting

Basin-wide water resources application

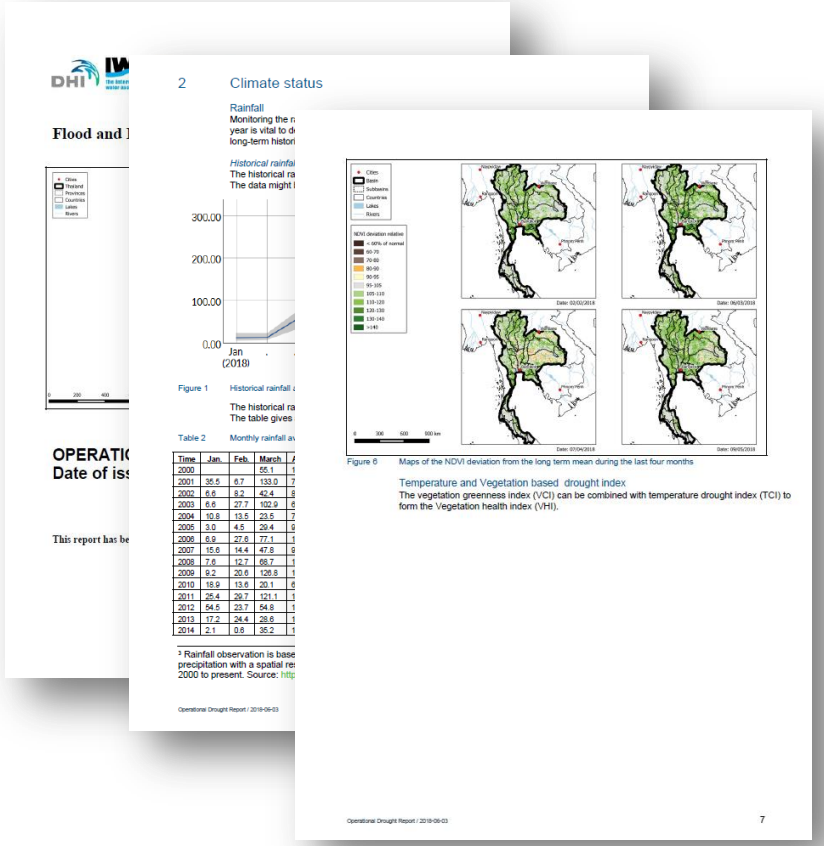
Access to near real-time data and forecast

- Real time **satellite based** data (climate, soil moisture, vegetation)
- Seasonal rainfall **forecast**
- Computation of flood and drought related **indices**
- Precipication, PET and temperature **delta change** factors



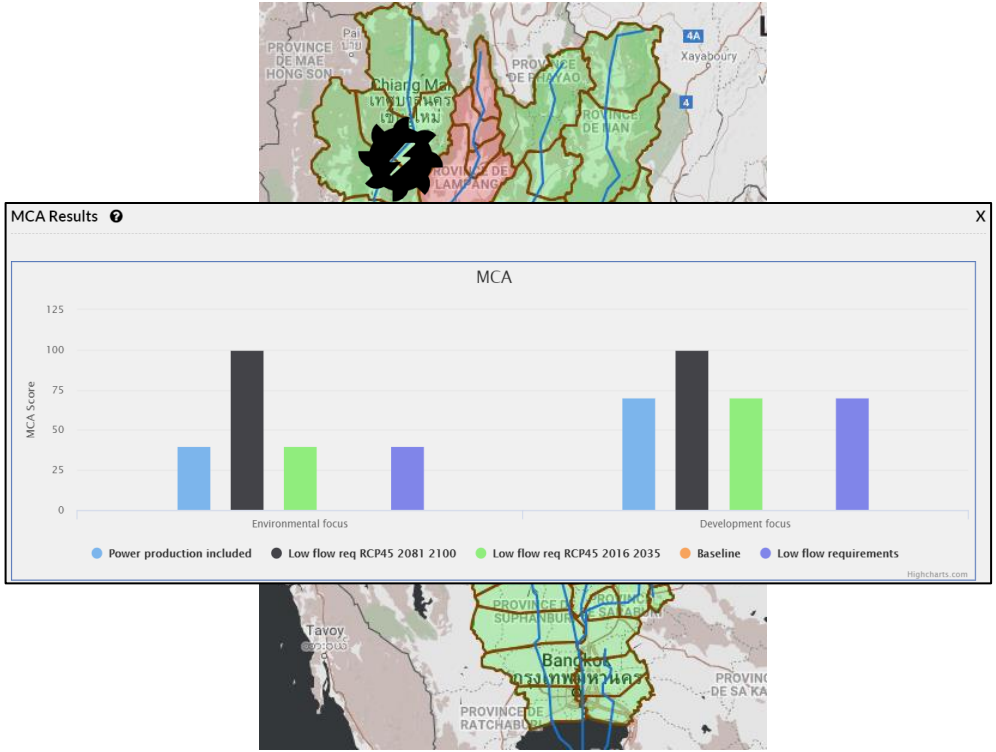
Automated reporting

- Includes maps, tables, time series…
- Scheduled regular intervals to include **latest information**
- Sent by **email** to selected recipients
- Does not require access to the portal to view it
- Can be done in **Thai**



Basin-wide water resources planning tool

- Water allocation model to compute indicators related to planning
- Impact of existing and new **infrastructures**
- Impact of **external factors** (climate change, population growth)
- Multi-criteria analysis (MCA)
- Crop calendar and crop yield estimate



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To learn more visit:
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