FLOOD & DROUGHT MANAGEMENT TOOLS

Volta

Lake Victoria

Chao Phraya

Data portal

Contacts:

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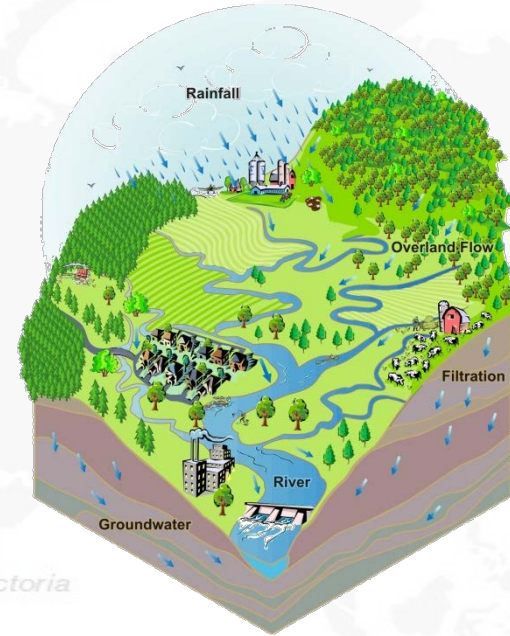# Background – Support basin and water utility planning

Basin plans

- TDA/SAP process (from GEF process)
- Integrated water resource management (IWRM) plans
- Basin and catchment plans

Utility plans

- Water Safety Plans - *Management approach developed by WHO (and IWA) to* ensure the safety and acceptability of a drinking water supply – *from catchment to end user.*

Water Safety Plan
Step-by-step risk management
for drinking-water suppliers

GEF Flood & Drought Management tools project

- Facilitating a scientific approach to decision-making (TDA/SAP, IWRM, WSP etc.)
- Support decision processes at basin and local level
- Technical tools supporting the inclusion of flood and drought issues into existing planning processes

- Implemented by UNEP; Executed by DHI and IWA from June 2014 to June 2018

Project web site: http://fdmt.iwlearn.org

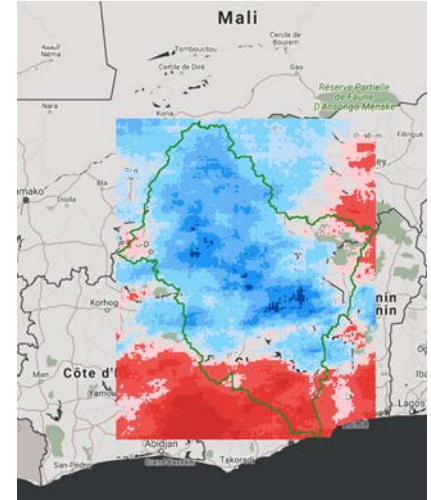# Global approach to local application

Global approach

Tools/guidelines

Local application

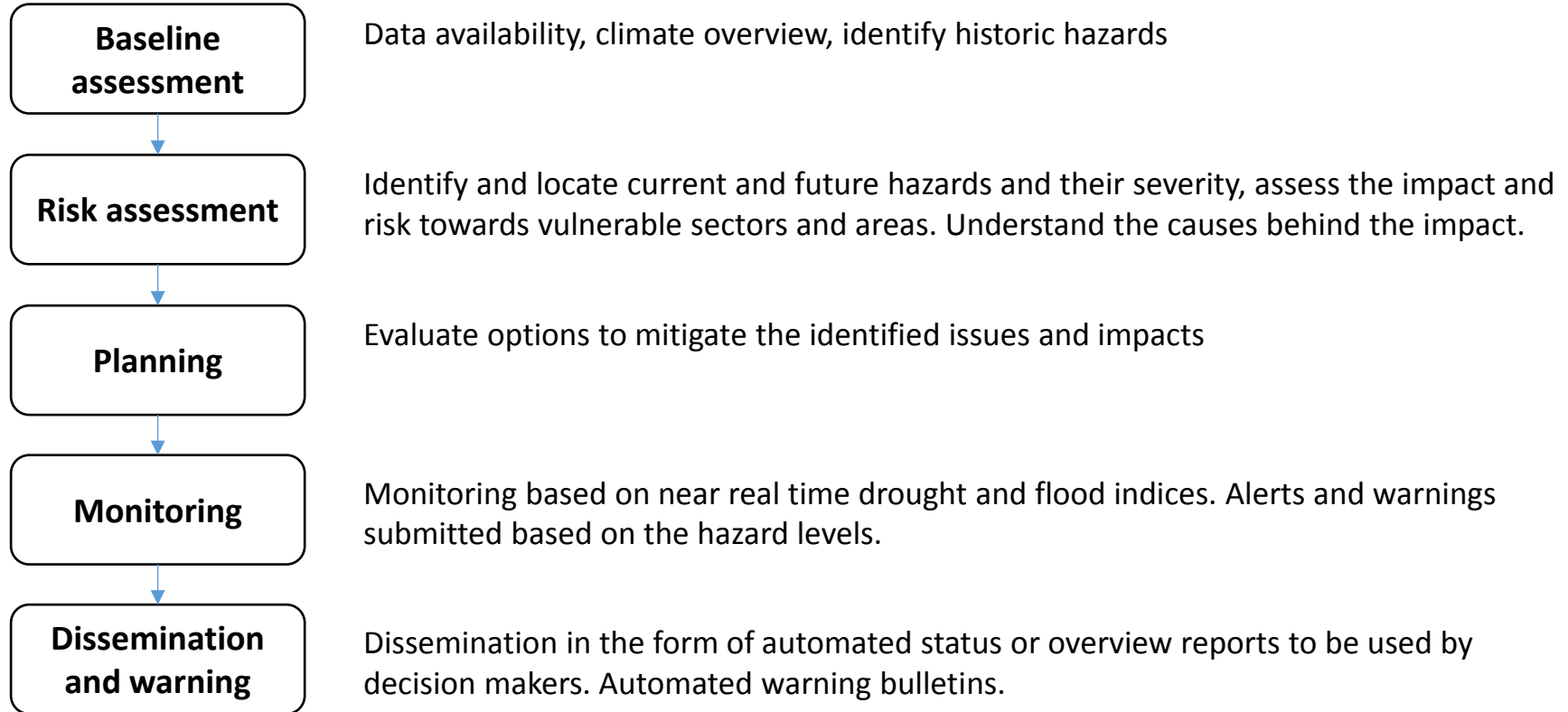**Technical tools
supporting decision
making at basin and
local level**

**Training
Guidelines**

Freely available tools supporting planning at transboundary, national and local level

Key processes supported by the project

Baseline assessment

Data availability, climate overview, identify historic hazards

Risk assessment

Identify and locate current and future hazards and their severity, assess the impact and risk towards vulnerable sectors and areas. Understand the causes behind the impact.

Planning

Evaluate options to mitigate the identified issues and impacts

Monitoring

Monitoring based on near real time drought and flood indices. Alerts and warnings submitted based on the hazard levels.

Dissemination and warning

Dissemination in the form of automated status or overview reports to be used by decision makers. Automated warning bulletins.

Key processes supported by the project

Baseline assessment

Risk assessment

Planning

Monitoring

Dissemination and warning

www.flooddroughtmonitor.com
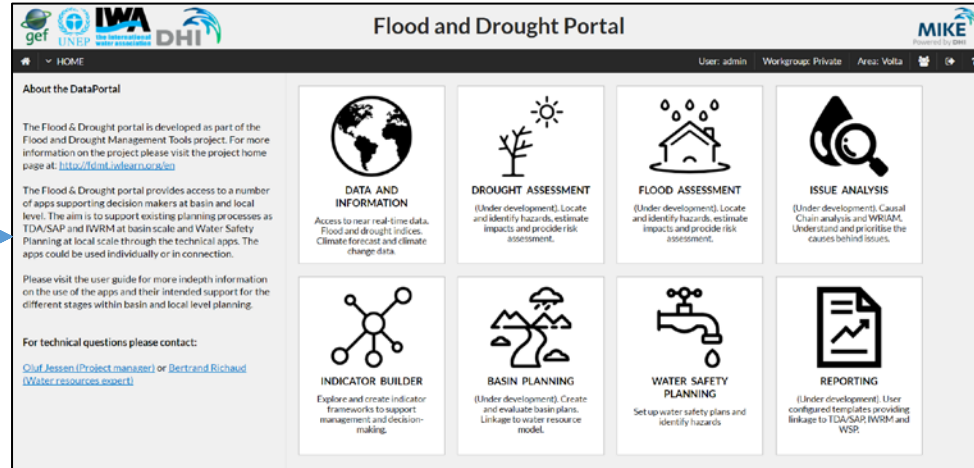
Planning steps supported with technical applications assessable from the flood and drought portal

Technical applications supporting basin planning

Flood and Drought Portal

gef UNEP IWA the international water association DHI

MIKE Powered by DHI

HOME — User: admin — Workgroup: Private — Area: Volta

About the DataPortal

The Flood & Drought portal is developed as part of the Flood and Drought Management Tools project. For more information on the project please visit the project home page at: http://fdmt.iwlearn.org/en

The Flood & Drought portal provides access to a number of apps supporting decision makers at basin and local level. The aim is to support existing planning processes as TDA/SAP and IWRM at basin scale and Water Safety Planning at local scale through the technical apps. The apps could be used individually or in connection.

Please visit the user guide for more indepth information on the use of the apps and their intended support for the different stages within basin and local level planning.

For technical questions please contact:

Oluf Jessen (Project manager) or Bertrand Richaud (Water resources expert)

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

DROUGHT ASSESSMENT
(Under development). Locate and identify hazards, estimate impacts and procide risk assessment.

FLOOD ASSESSMENT
(Under development). Locate and identify hazards, estimate impacts and procide risk assessment.

ISSUE ANALYSIS
(Under development). Causal Chain analysis and WRIAM. Understand and prioritise the causes behind issues.

INDICATOR BUILDER
Explore and create indicator frameworks to support management and decision-making.

BASIN PLANNING
(Under development). Create and evaluate basin plans. Linkage to water resource model.

WATER SAFETY PLANNING
Set up water safety plans and identify hazards

REPORTING
(Under development). User configured templates providing linkage to TDA/SAP, IWRM and WSP.

Baseline assessment

Risk assessment

Planning

Monitoring

Dissemination and warning

Data and information

Objectives

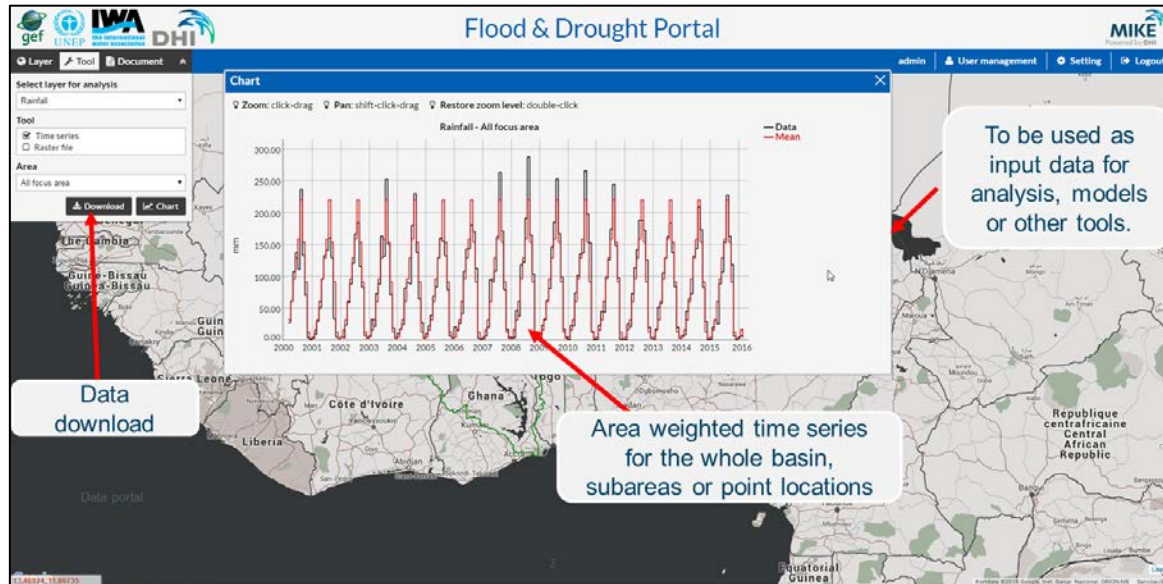- Provide data and information **at any location** for support to a planning process

Baseline assessment

Risk assessment

Planning

Monitoring

Dissemination and warning

Near real time satellite data

Observation data

Indices

Seasonal forecast

Climate change

DATA AND INFORMATION

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

Drought assessment

Baseline assessment

Risk assessment

Planning

Monitoring

Dissemination and warning

Objectives

- Identify location and severity of drought hazard
- Evaluate impact of drought hazard
- Provide risk assessment towards specific vulnerable areas or sectors
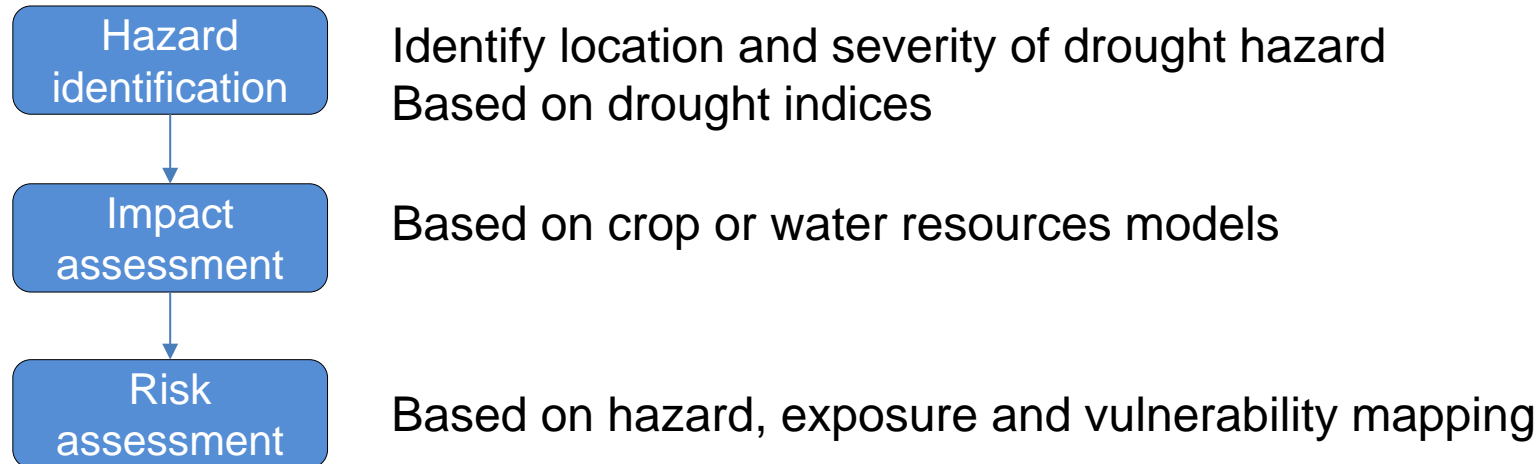- Provide drought early warning

Hazard identification

Identify location and severity of drought hazard
Based on drought indices

Impact assessment

Based on crop or water resources models

Risk assessment

Based on hazard, exposure and vulnerability mapping

DROUGHT ASSESSMENT

(Under development). Locate and identify hazards, estimate impacts and procide risk assessment.

Flood assessment

Objectives
- Assess historic flood hazards and risks
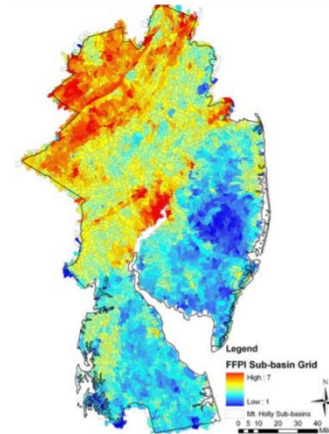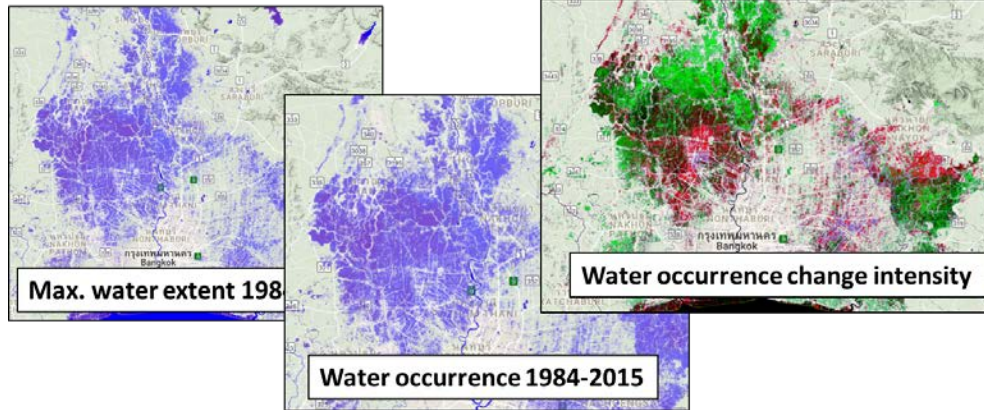- Provide warning and risk assessment for flash flood
- Impacts on catchment run-off

Max. water extent 198

Water occurrence 1984-2015

Water occurrence change intensity

Flash Flood Potential Index (FFPI)

FLOOD ASSESSMENT

(Under development). Locate and identify hazards, estimate impacts and procide risk assessment.

Issue analysis

Objectives

- Evaluate the causes behind an environmental impact using the CCA and WRIAM approaches

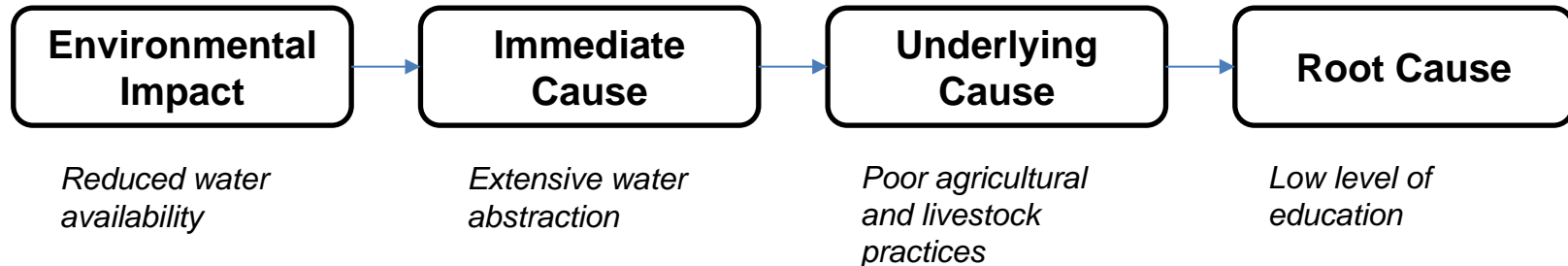CCA: Causal Chain Analysis, WRIAM: Water Resources Issues Assessment Method

Environmental Impact → **Immediate Cause** → **Underlying Cause** → **Root Cause**

Reduced water availability

Extensive water abstraction

Poor agricultural and livestock practices

Low level of education

The prioritised causes will be the target in the following efforts to mitigate or adapt to the impact of specific environmental issues

ISSUE ANALYSIS

(Under development). Causal Chain analysis and WRIAM. Understand and prioritise the causes behind issues.

Water indicator

Development of Tools to
Incorporate Impacts of Climatic Variability and Change in Particular
Floods and Droughts into Basin Planning Processes

Objectives

- Assist user in selecting relevant indicators for measuring the state of a specific issue
- Provide information about the required data and the processing steps
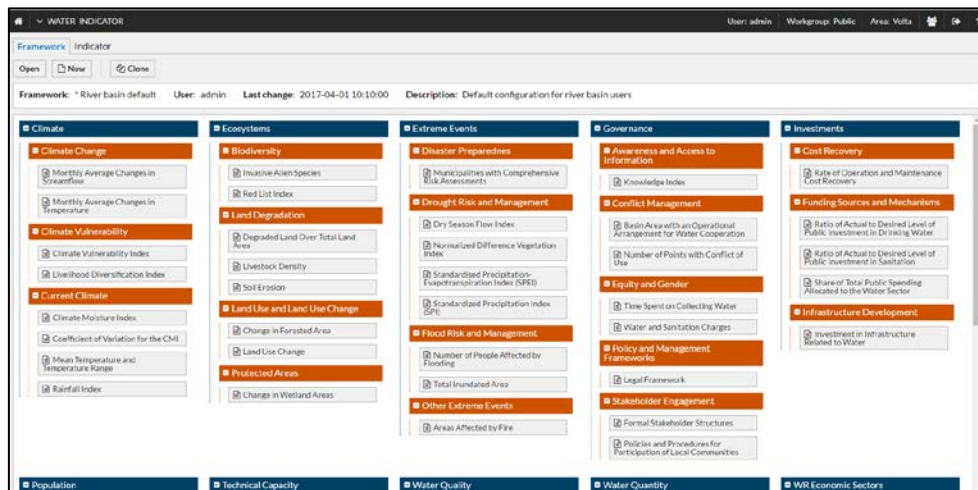- Provide information about the application of the indicators

Baseline assessment

Risk assessment

Planning

Monitoring

Dissemination and warning

WATER INDICATOR

Identify water related indicators to support management and decision-making.

Basin planning

Objectives

- Evaluate planning options for mitigating or adapting to flood or drought related hazards
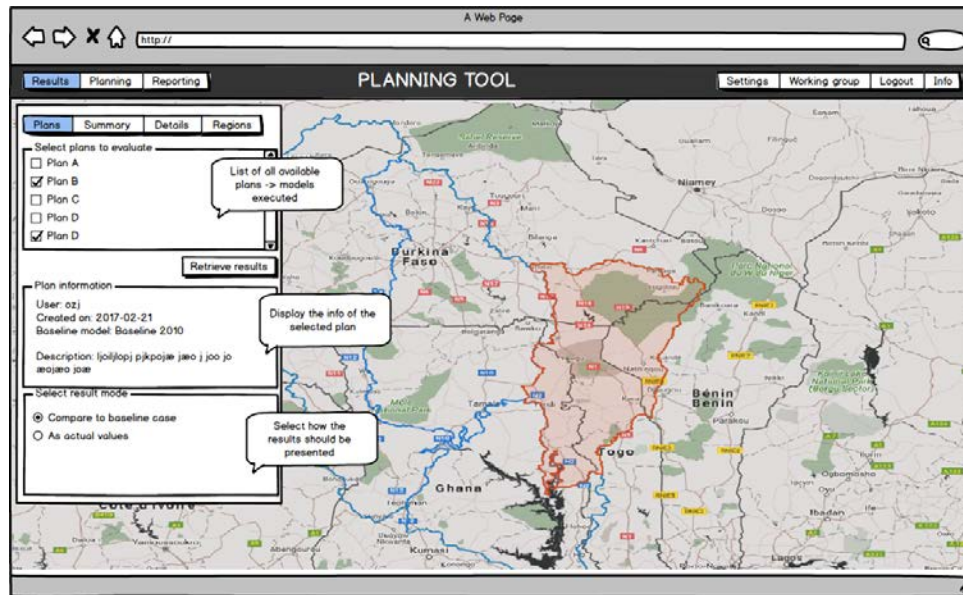- Support seasonal and long term planning

| Baseline assessment |
| Risk assessment |
| Planning |
| Monitoring |
| Dissemination and warning |

BASIN PLANNING

(Under development). Create and evaluate basin plans. Linkage to water resource model.

Reporting

Development of Tools to
Incorporate Impacts of Climatic Variability and Change in Particular
Floods and Droughts into Basin Planning Processes

Objectives
- Produce user configured reports
- Disseminate data, information and results in reports
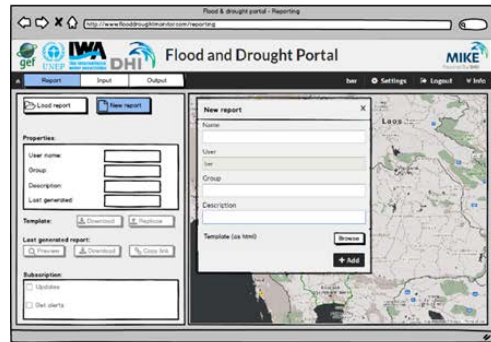- Provide templates supporting the TDA, IWRM and WSP planning process

Baseline assessment

Risk assessment

Planning

Monitoring

Dissemination and warning

TDA/SAP template

IWRM template

WSP template

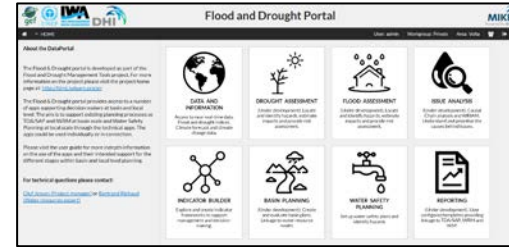Data overview/status template

Warning or alert template

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REPORTING

(Under development). User configured templates providing linkage to TDA/SAP, IWRM and WSP.

Key outputs

Web portal providing access to applications supporting national and transboundary planning

Training materials from a number of regional and national workshops and technical trainings in Africa.

Expert users within the Lake Victoria and Volta basin