DROUGHT MANAGEMENT

WITHIN A CHANGING CLIMATE

Volta

Lake Victoria

Chao Phraya

Droughts are a key issue in water related planning as understanding of the impacts and severity of droughts is critical for decision-making and response

Drought planning tools allow users to evaluate the current drought impact (according to indicators), provide early warning of drought onset, determine drought severity and spatial extent, and convey consolidated information to decision-makers. The aim is to develop an integrated drought approach covering the process from drought status, impact assessment, planning to implementation and evaluation.

The key objectives are as follows:

1. **Increase data accessibility for drought management**

   - Data portal providing near real-time satellite based data and indices

2. **Provide scientific based methods for drought forecasting**

   - Seasonal and short-term climate forecasting

   - Forecasted drought status and impact

3. **Tools enhancing planning for drought risk reduction**

   - Linkage to water resource and crop models

   - Advanced decision workflows and analysis methods

4. **Linkage between technical tools and policy processes**

   - Dissemination tools for outreach and communication

Drought forecasting

Seasonal forecast links early detection with response and actions, providing the link between the drought plan and the observations. The NCEP CFSv2 model is supported, enabling users to produce seasonal climate forecast, publish forecasted drought indices and connect the forecast with available hydrological models.

*Seasonal rainfall forecast*
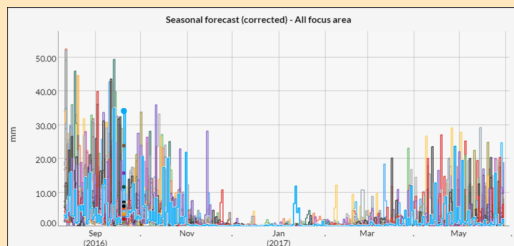
Forecasted runoff
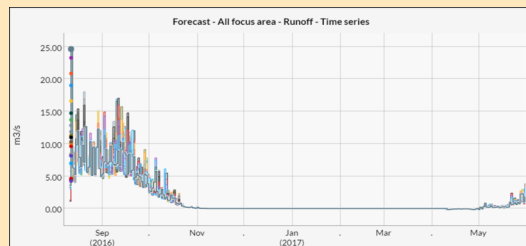
Data availability for drought assessment

Satellite data is an important data source and providing an automated approach for using selected data sources in drought planning; e.g. Normalized Difference Vegetation Index (NDVI), Soil Water Index (SWI), Tropical Rainfall Measuring Mission (TRMM) data.

Drought indices are used for identifying the start and severity of a drought. Different indices will be supported; e.g. Standardized Precipitation Index (SPI), Standardized Precipitation Evapotranspiration Index (SPEI) and Temperature Condition Index (TCI). Indices presented as spatial maps or weighted time series for sub-areas.
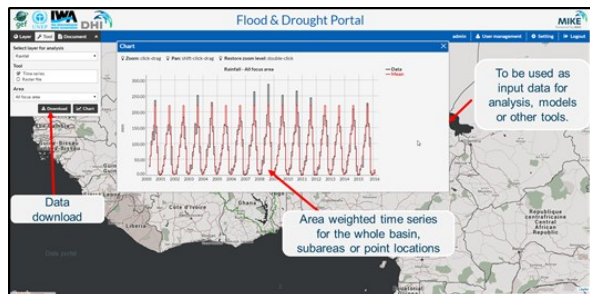
Data portal with near real time drought related data and indices

Drought risk reduction

Focussing on **risk identification**, **impact assessment** and **early warning** with the overall objective to strengthen disaster preparedness for all relevant stakeholders.
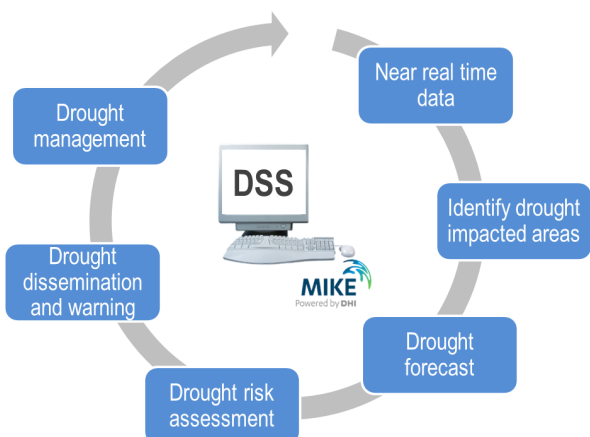

Drought risk reduction framework

Decision workflow utilising i) user defined interventions, ii) simulation models (crop and water resource models), indices and scenario evaluation based on multi-criteria analysis, cost-benefit analysis, trade-off analysis, etc.

This allow stakeholders to evaluate the impact of different adaptation interventions and identify planning alternatives that are robust and resilient towards climate variability and other drivers.

The decision workflow combines tools and models in a decision process supporting stakeholders with water related planning at basin and local scale.
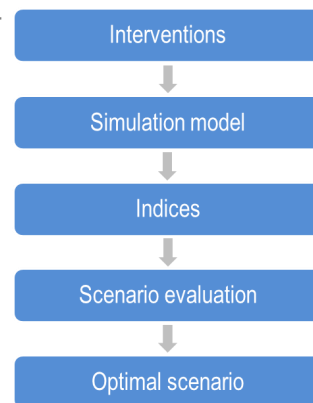
Decision workflow

Dissemination and reporting

The methodology provides users with functionality for automated **impact reporting** and **status reporting**. The functionality is customisable, enabling users to adapt the report to their required structure.

Project website: http://fdmt.iwlearn.org/

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