Flood and Drought Webinar #1

Use of satellite data for drought and flood management (Technical presentation)

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UNEP-DHI PARTNERSHIP
Centre on Water and Environment

UNEP-DHI Water Webinar series
Flood and Drought Management Webinars

Flood and Drought Management Tools project

- Implemented by UNEP and executed by IWA and DHI
- Duration 2014 to 2018
- Development of technical tools to improve the ability to address floods and droughts in the planning process at basin and local scale.

Project web-page: **http://fdmt.iwlearn.org**

Agenda

1. Background on the use of satellite data in drought and flood management, by Oluf Jessen (Project manager, Flood & Drought Management Tools project, DHI) (10 min)
2. Live demonstration of an innovative data portal for floods and drought management, by Bertrand Richaud (Water Resources Expert, DHI) (15 min)
3. Additional questions from the audience
4. Info on upcoming webinars

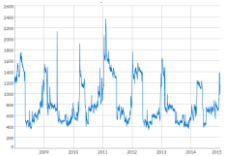
Use of satellite data for flood and drought management

Oluf Jessen – *DHI*
Project manager

ozj@dhigroup.com

Data availability is a key issue in planning

- Data availability is a key concern in many countries and basins
- Availability of a “basic” set of data for planning is critical
- Satellite or model data should be used to support available station data



Data

Analysis

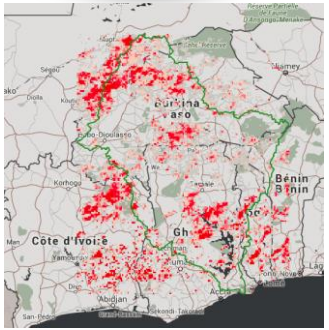
Decision process

Improved decision making

Develop a information system enabling a basic set of data for planning at any location on the globe

Supports planning (basin or catchment) at a global scale

- Data made available for any basin or catchment
- Data updated in near real time



Based on freely available data

- All data to be freely available
- All data to be available in open formats

Web portal enabling access to basic data set for planning

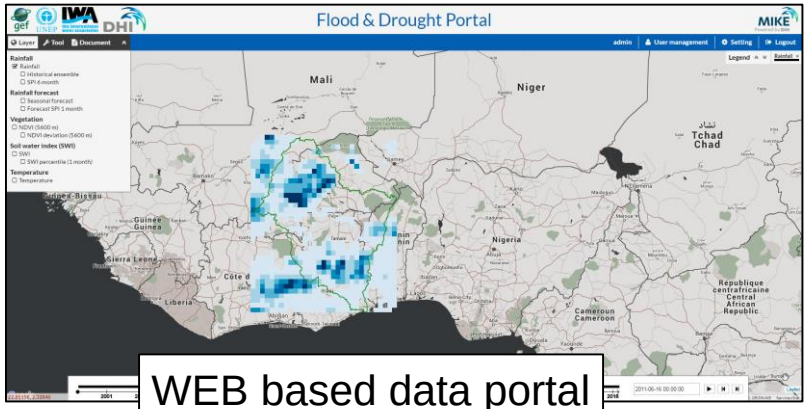
Download latest data

Daily update

QA and process data

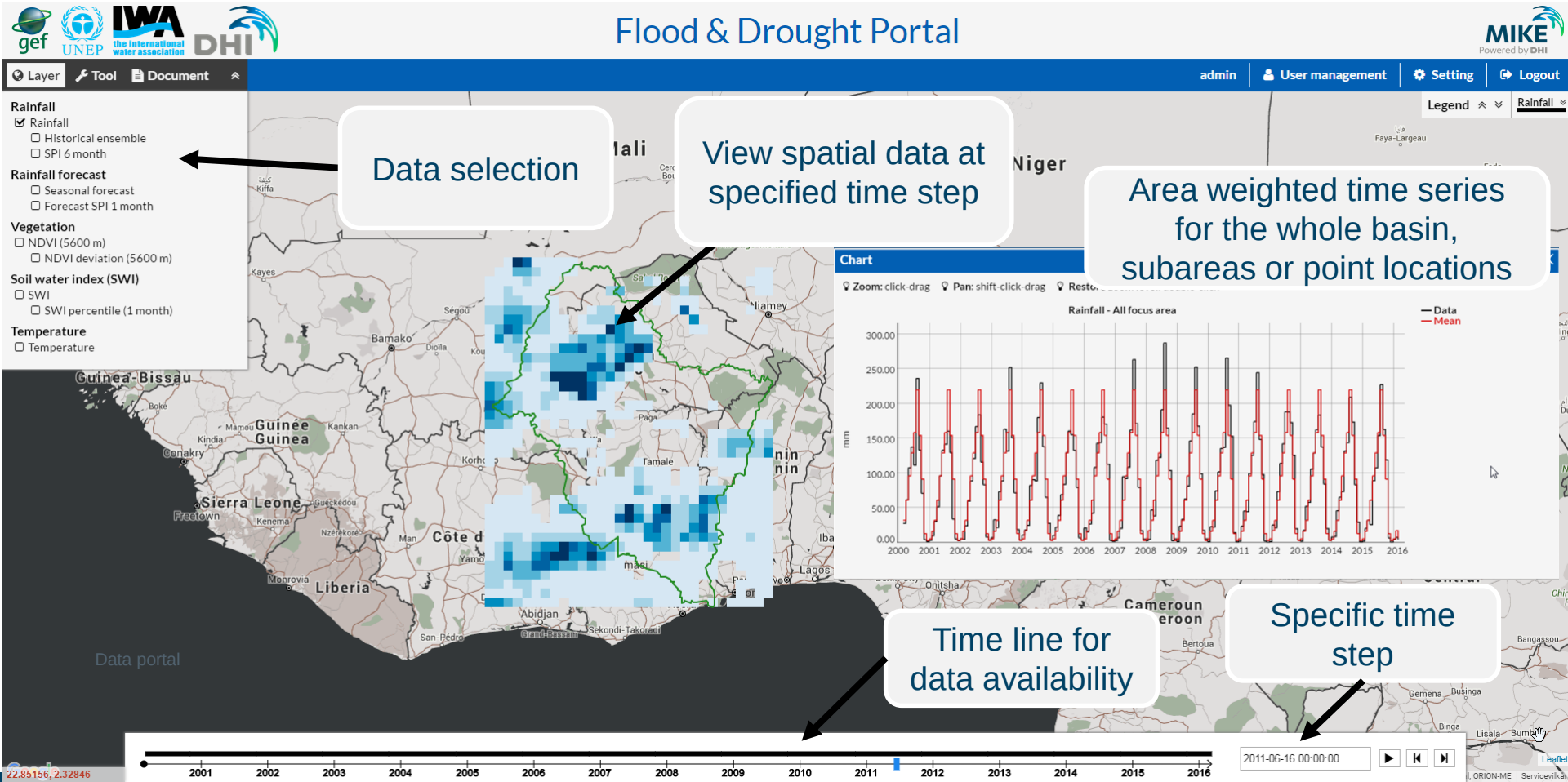
Produce derived products (indices, time series…)

Data available on portal



WEB based data portal

Technical overview – web portal



Climate data:

- TRMM, CHIRPS, CRU, GPM rainfall
- Temperature and PET

Forecast and climate change

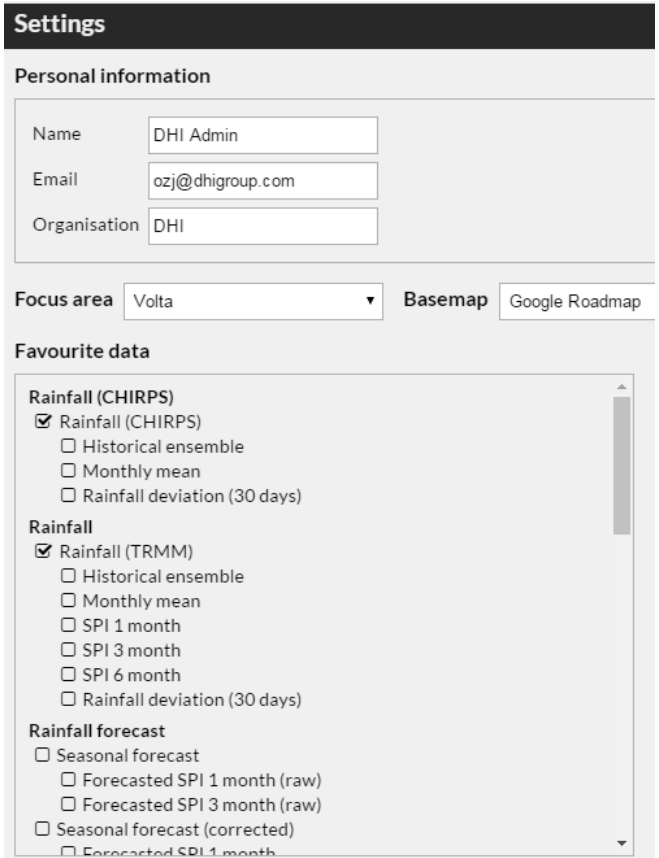
- Seasonal and 2-week forecast
- Climate change (CORDEX)

Vegetation and soil moisture

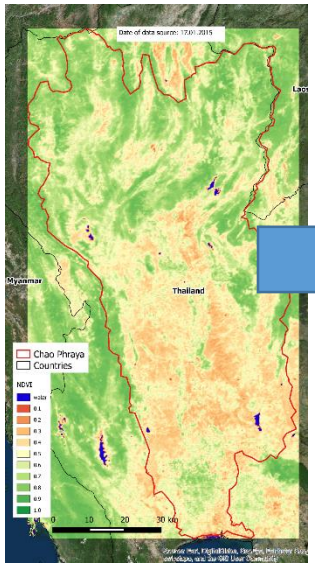
- NDVI
- Soil Water Index

Lakes and reservoirs

- JASON data



Indices are essential for linking data with assessment



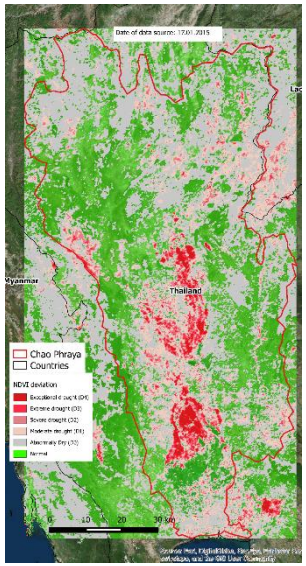
Satellite data

Index

How are the current values compared to the historical values?

Expressed as a deviation, anomaly, percentile etc.

A number of different indices are maintained.



Classification

Indices provide the link to:

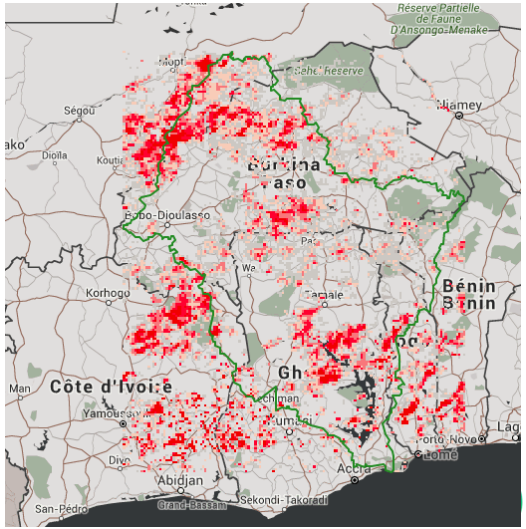
- Impact categories (drought or flood)
- Impacted areas
- Essential for warning and assessments

Category	Description	Impact
Normal	Normal	*Normal conditions*
D0	Abnormally Dry	*Short-term dryness some water deficit*
D1	Moderate Drought	*Some damage to crops*
D2	Severe Drought	*Crop or pasture losses likely; water shortages common*
D3	Extreme Drought	*Major crop/pasture losses; widespread water shortages*
D4	Exceptional Drought	*Exceptional and widespread crop/pasture losses*

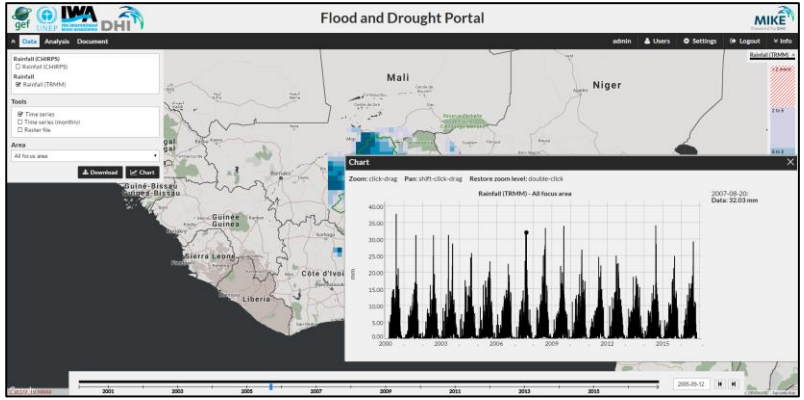
Source: U.S. Drought Monitor Classification Scheme

Indices are updated in near real time along with the data.

- Deviation or anomaly
- Percentile or change in percentile



The established data and information portal serves a number of purposes:



Data and information provider

- Real-Time & Historical Data
- Forecast data

Input to models and tools

- Water resource models
- Data and analysis tools

Direct linkage to planning tools

- Decision methods
- Planning processes

Climate forecast

- Add 2 week forecast
- Performance indices (how does the forecast perform)

Indices

- Test and QA of additional indices (drought and flood)
- More focus on combined indices

Reporting options

- Tools for automated reporting
- Schedule bi-weekly or monthly status reports

Analysis tools

- Tools for drought or flood assessments
- Topic for webinar on February 28th 2017

THANK YOU
www.flooddroughtmonitor.com

Flood and Drought Portal

Live demonstration of an innovative data portal for flood and drought management

Bertrand Richaud – *DHI*

Water resources expert

ber@dhigroup.com

Audience questions

Upcoming FD webinars

#1: Use of satellite data for drought and flood management (Technical presentation)

#2: Drought management today - cases from Asia (January 12, 2017)

#3: Drought early warning and assessment, experiences from Ghana (February 28, 2017)

#4: Basin planning – the climate change challenge (April 6, 2017)

#+++!

Dates and recordings on
http://www.unepdhi.org/fd-webinars

- Questions/comments to Maija Bertule mabe@dhigroup.com

- Webinar recording and slides on YouTube (UNEP-DHI) and http://www.unepdhi.org/fd-webinars

- Short feedback survey in follow-up email – please take 5 minutes to fill in – we value your opinion!

Future webinars in the series

- Feedback and suggestions for future topics welcome!

Thank you for attending!