Water Management in Thailand

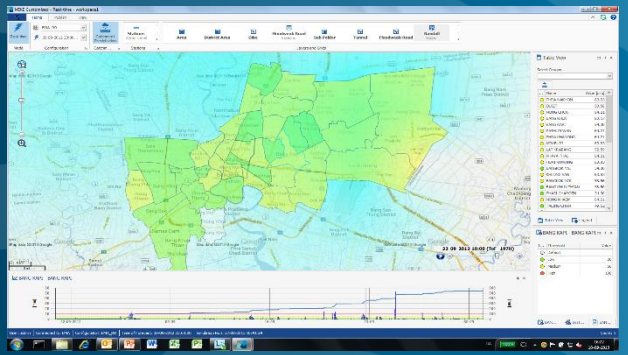
Past experiences and future challenges

Oluf Z. Jessen
Head of Projects, Water Resources
ozj@dhigroup.com

DHI

Topics

- Water resources at DHI
- Water Management in Thailand
- Water Management in the future
- Questions…



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DHI in a nutshell

We’re an independent, private and not-for-profit organisation

Our people are highly qualified

80% of our 1,100 employees hold an MSc or a PhD degree

Our knowledge represents 50 years of dedicated research

21% of our resources are allocated to R&D to enhance our knowledge and innovation

We make this knowledge globally accessible

through our local teams and unique software

DHI in Thailand

After the October 2011 flood the Thai government assigned DHI to assist HAII in developing a modern Decision Support and Flood Forecasting System under the National Hydro Informatics Data Center framework

Collaboration with HAII

- Capacity building and training by international experts with extensive experience in flood and water resource issues

- Transfer of technology for flood modelling, water resource assessment and decision support

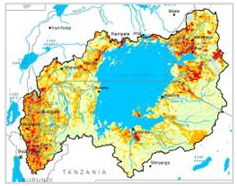
Objective: build and maintain local experience and knowledge of the highest level within the areas of flood and water resources assessment


Flood

Water Management - Examples

Manage, organise and analyse large amounts of **data**

Improved information management in the Lake Victoria Basin



Get the full benefit of real-time **monitoring** & early-warning systems

Early warning and forecast system in Slovenia

Optimise **operations** and planning

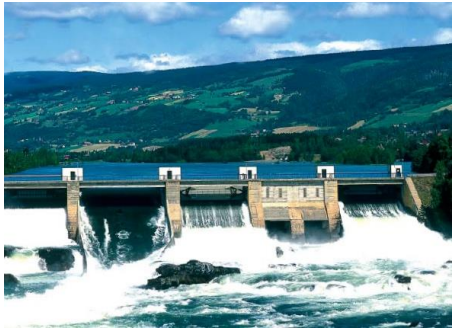
Optimised river operations in New South Wales, Australia

Make wise and robust water management **decisions**

Sharing water resources fairly in the Nile river basin

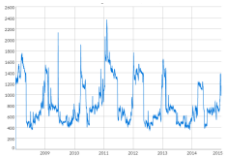
Water management across time scales

	Hours	Days	Months	Years	Decades
Solutions	• On-line monitoring • Flash flood forecasting • Real-time control • Emergency management • **Flood forecasting** and early warning • …	• **Reservoir operation** • **Water allocation** • **Seasonal forecasting** • **Drought management** • Reservoir sedimentation management • …	• Infrastructure development • **Water and environmental planning** • **Climate change adaptation** • …		

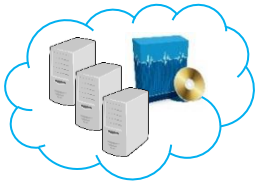


Water Management - Solutions

Providing the best basis for sound decisions



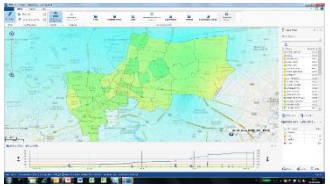
Data



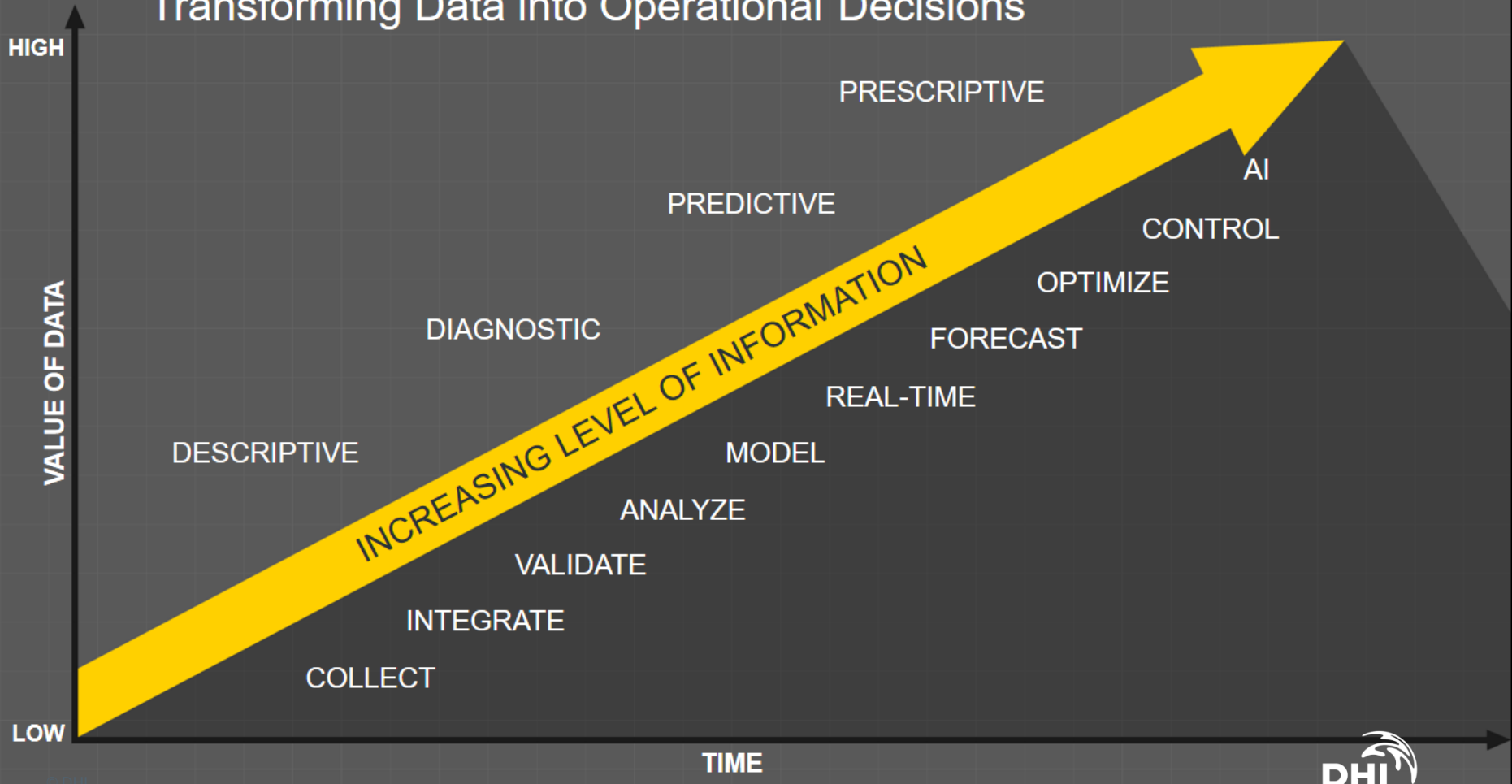
Numerical models

Analysis

Decision process



Transforming Data into Operational Decisions



Optimised real-time control of river and reservoir systems

- Reduce flood risk
- Optimise water use and minimise spills
- Meet regulatory requirements on water quantity and quality
- Reduce costs of new water infrastructure

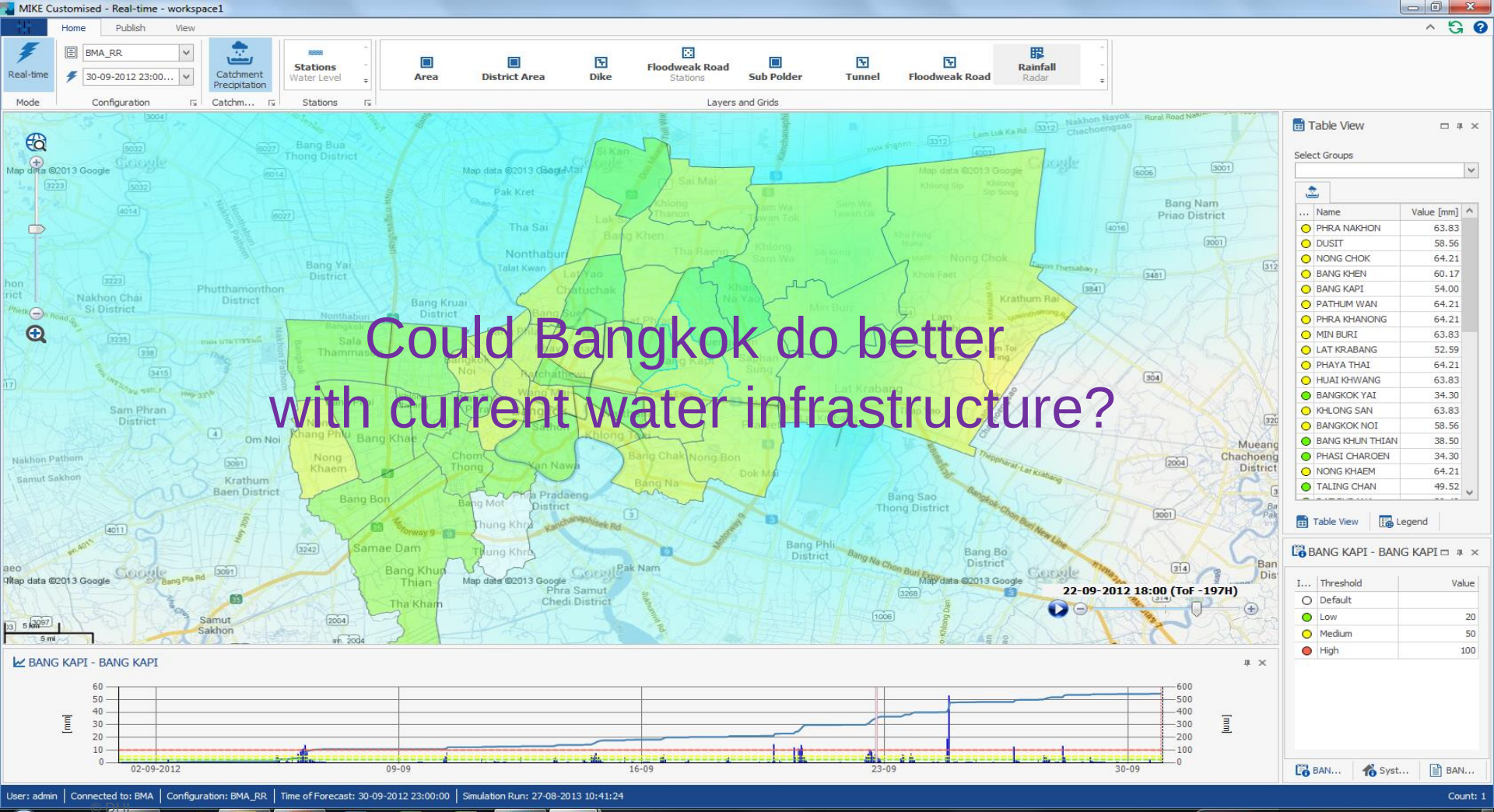
Reduced flooding

More hydropower

Efficient water use

Environmental protection

Reduced costs


MIKE Customised - Real-time - workspace1
Home
Publish
View
Real-time
Mode
BMA_RR
30-09-2012 23:00...
Configuration
Catchment Precipitation
Catchm...
Stations
Water Level
Stations
Area
District Area
Dike
Floodweak Road
Stations
Sub Polder
Tunnel
Floodweak Road
Rainfall
Radar
Layers and Grids
Could Bangkok do better
with current water infrastructure?
Table View
Select Groups
... Name Value [mm]
PHRA NAKHON 63.83
DUSIT 58.56
NONG CHOK 64.21
BANG KHEN 60.17
BANG KAPI 54.00
PATHUM WAN 64.21
PHRA KHANONG 64.21
MIN BURI 63.83
LAT KRABANG 52.59
PHAYA THAI 64.21
HUAI KHWANG 63.83
BANGKOK YAI 34.30
KHLONG SAN 63.83
BANGKOK NOI 58.56
BANG KHUN THIAN 38.50
PHASI CHAROEN 34.30
NONG KHAEM 64.21
TALING CHAN 49.52
Table View
Legend
BANG KAPI - BANG KAPI
I... Threshold Value
Default
Low 20
Medium 50
High 100
22-09-2012 18:00 (ToF -197H)
BANG KAPI - BANG KAPI
[mm]
02-09-2012
09-09
16-09
23-09
30-09
User: admin
Connected to: BMA
Configuration: BMA_RR
Time of Forecast: 30-09-2012 23:00:00
Simulation Run: 27-08-2013 10:41:24
Count: 1
DA
100%
16:22
10-09-2013

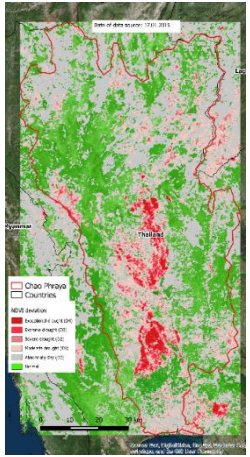
Water Management in Thailand…in the coming years

Water Resources Management at national, provincial and local level (Office of National Water Resources)

Drought forecasting and management

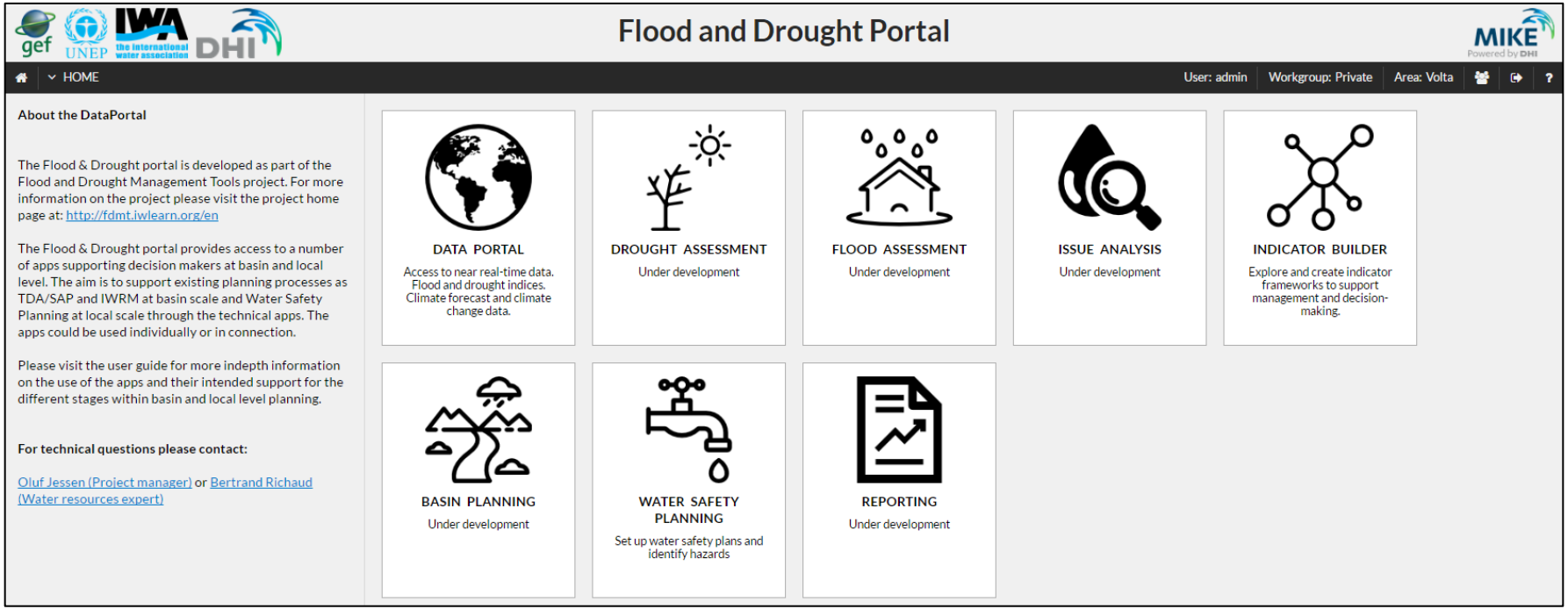
Operational Decision Support System supporting water management seamlessly across time scales

Data and engines as **operational services** in the cloud



CloudBridge

Water Management – Floods & Drought project



www.flooddroughtmonitor.com

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www.flooddroughtmonitor.com

For more information, contact

DHI, Oluf Zeilund Jessen
ozj@dhigroup.com

IWA, Katharine Cross
katharine.cross@iwahq.org

Or learn more at

fdmt.iwlearn.org

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UN environment

DHI

IWA the international water association