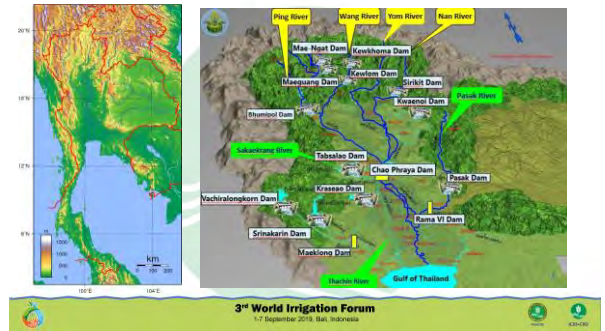
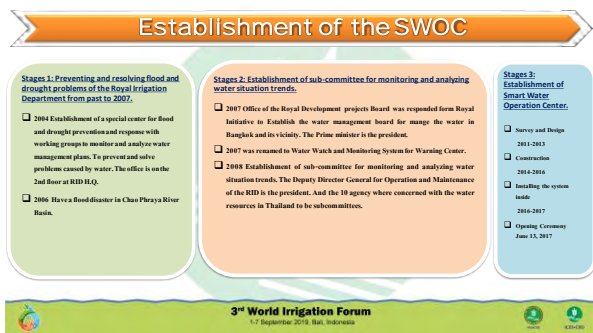




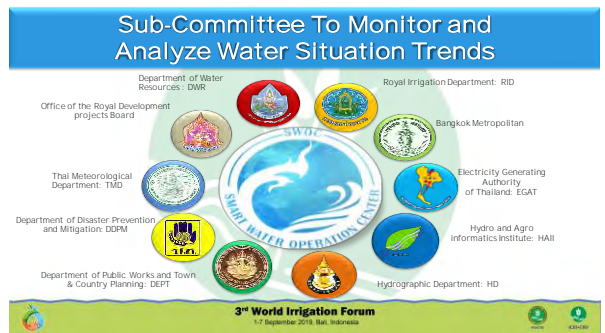
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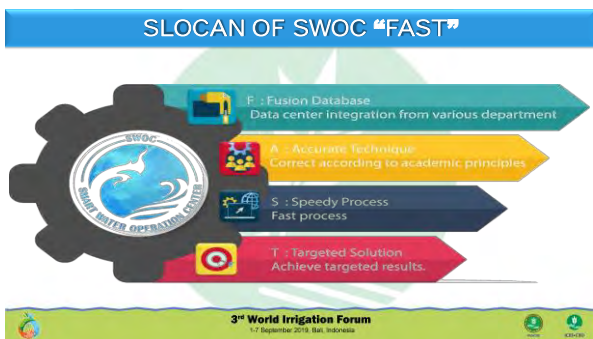
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### ROLE OF SWOC : MONITORING

Data : weather rainfall by TMD

Data : water level Reservoir by RID, HAI, DWR

3<sup>rd</sup> World Irrigation Forum  
1-7 September 2019, Bali, Indonesia

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### ROLE OF SWOC : EVALUATE

#### Evaluate and tracking the rainfall run-off for public warning

Track satellite and hourly weather data from the Meteorological Department. To check the rain forecast map.

Hourly rainfall analysis  
Considering hourly rainfall.

Track the runoff from the observation station with hourly rainfall to monitor the water situation.  
Specify excessive rain warning.

Analyze the results and announce surveillance of flood risk area for overflowing water to irrigation office nationwide. Ask other agencies involved to prepare for the water situation.

3<sup>rd</sup> World Irrigation Forum  
1-7 September 2019, Bali, Indonesia

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### ROLE OF SWOC : ANALYSING AND FORECASTING

#### Flood forecasting Model

Model - Develop by RID  
ANNs - Artificial Neuron Network System  
<http://www.rid.go.th/irrigation/irrigation/forecast.html>

Model - Develop by JICA  
Flood Risk Information  
<http://www.rid.go.th/irrigation/irrigation/forecast.html>

3<sup>rd</sup> World Irrigation Forum  
1-7 September 2019, Bali, Indonesia

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### Water allocation Model

#### NARK 4.0

N : National Research  
A : Agricultural research development agency  
R : Royal Irrigation Department  
K : King Mongkut's of Technology North Bangkok

3<sup>rd</sup> World Irrigation Forum  
1-7 September 2019, Bali, Indonesia

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### SWOC 's TOOLS : Web Application

[swoc.rid.go.th](http://swoc.rid.go.th)  
[wmisc.rid.go.th](http://wmisc.rid.go.th)

3<sup>rd</sup> World Irrigation Forum  
1-7 September 2019, Bali, Indonesia

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### Video Wall

System Diagram ภายใต้นโยบายศูนย์ปฏิบัติการศูนย์ - ควบคุมและป้องกันน้ำท่วม

3x3 ODE-721 Total Wall resolution = 9,600x2,160 pixels

3x3 ODE-721 Total Wall resolution = 9,600x2,160 pixels

3<sup>rd</sup> World Irrigation Forum  
1-7 September 2019, Bali, Indonesia

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### Conclusions

- SWOC does improve water management in Thailand immensely.
- Most impressive is the way decisions and implementations can be done seamlessly.
- "The process" keep all operation units and decision units operate in one large synchronize integrated unit without lack time.
- NARKS help to make water planning, allocation, and monitoring in normal and not too erratic condition smooth and effective; but watch out for extreme climatic condition.

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### Planning In Future

Development of water monitoring center, Royal Irrigation Department to SWOC1-17

Criteria for Performance

SWOC  
+  
SWOC 1-17

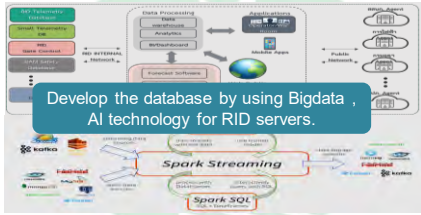
17

### Planning In Future

Use technology internet of thing to develop remote control system to make automation system for open-shut the water regulator from far away.

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Linking and developing a database on water management of the Royal Irrigation Department.



Suggestion for Future

- Should stress on present operating system; practice for smooth coordination instead of increasing smaller nodes.
- Improve on long term weather forecast and act well in advance of severe condition.
- Use more statistics and monitor closely on trends in development.
- Experience and intuition and common senses are sometimes better than following model computation blindly.