

# **Reservoir & Lake Management**

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**17 persons**

**8 countries**



# Open Discussion

## Reservoir as an unique ecosystem

**In social aspect, how do human activities influence reservoir dynamics?**

- cultural change
- tourism
- social activity
- landuse + development on water quality
- Migration population problem
- flooding pattern change

**Temperate vs tropical reservoirs?**

**Natural lakes versus reservoirs?**

**Does reservoir usage affects its physics, chemistry and biology?**

- hydropower;
- drinking water supply;
- agricultural water supply;
- combination of these.

# Open Discussion

## HF buoy and Model in Reservoirs

**What aspects of reservoir dynamics can we better understand by using buoys?**

- stratification;
- TSI;
- residence times
- metabolism.

**Which reservoirs has HF data?**

- Kentucky, Korea, Qiandao, Dashahe, NY DEP reservoirs, Ford Lake, FCR ... ..

**Where to set a buoy system in a reservoir to meet the model and management need?**

- Inflow, for calibration model in Korea
- Dam, for ecological process monitoring

**What kind of models we use to analyze a reservoir?**

- 2D CEQUAL – W2 model from USA, simulate turbidity current, TP, TN etc.
- 3D ELCOM-CAEDYM for temperature, DO, TN, NO<sub>3</sub>, NH<sub>4</sub>

# Open Discussion

## GLEON meet management demand

**How our high frequency data meet the public and management demand?**

- DO, Turb, Chla, flow rate in Korea
- DO as an indicator of reservoir restoration in Brazil

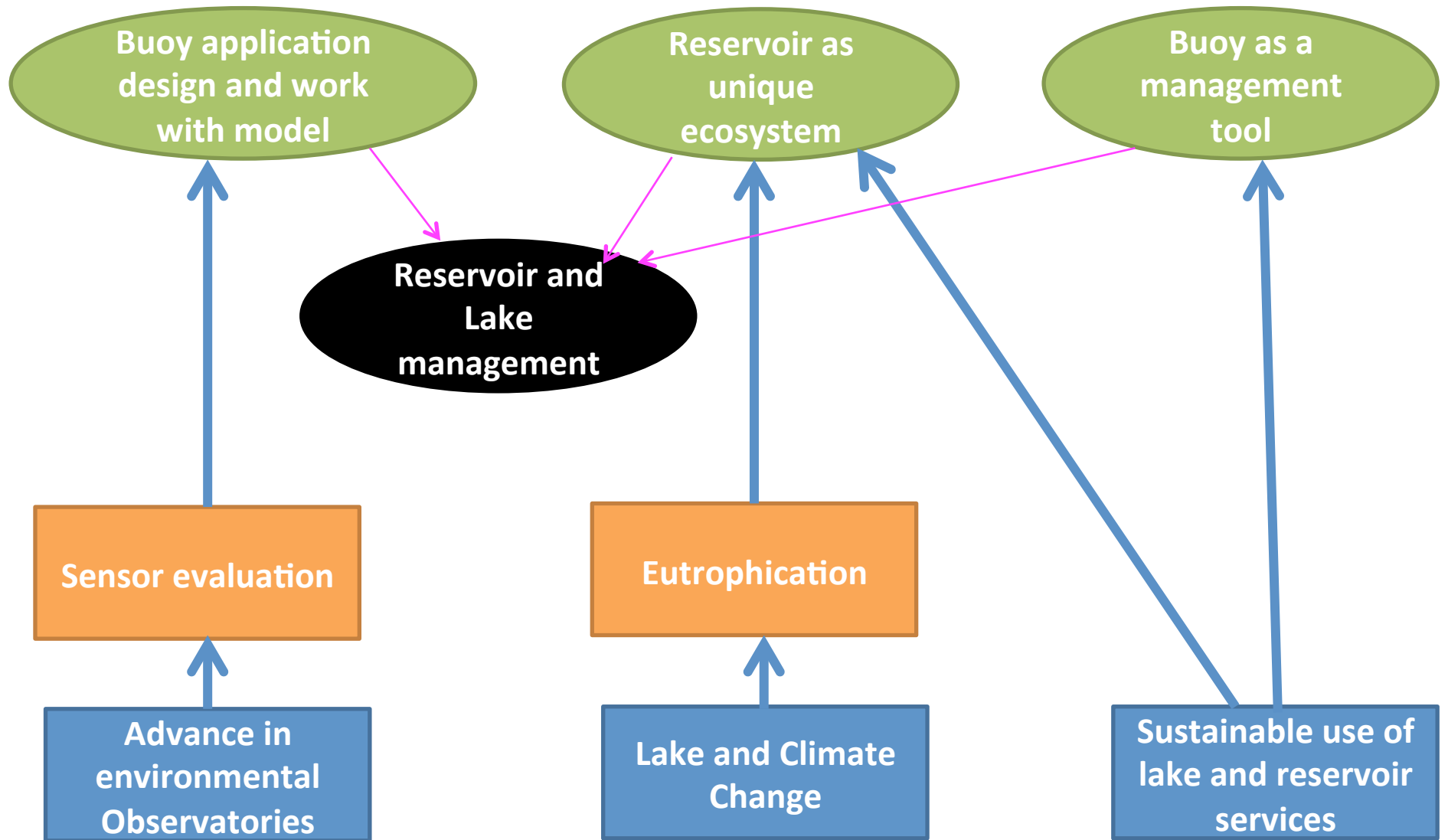
**What kind of ecological, environmental and social problems we meet in reservoir management.**

- Turbidity
- Bloom
- Fishery
- migration fish protection
- biodiversity

**Management strategies to control or improve reservoir water quality.**

- oxygen systems
- selective water withdraw from Dam

# Relation to Purple Wall



# Products and timeline

## Collect basic reservoir information inside of WG and GLEON.

- Response person: Guangwei
- geography, hydrology - environmental issues - drivers of ecological change
- Deadline: 30NOV13 – release survey form  
31DEC13 – end of data input and share to result to WG participants

## Paper 1: Link HF buoy monitoring to lake management.

- Response person: Lisa
- Case: - NY reservoir; - Taihu; - Sunapee; - Rotorua; - Ford Lake ... ..
- Deadline: 15 Dec – Outline; 15Dec - Case study sites, 31JAN14 – Draft

## Paper 2: Apply HF buoy for bloom forecasting in reservoir.

- Response person: Guangwei
- Case: - Xinanjiang reservoir and other interesting cases
- Deadline: 15 Dec – Outline; 15Dec - Case study sites, 31JAN14 – Draft

## Paper 3: Management strategy overview to control water quality in Reservoir.

- Response person: Jonathan
- Deadline: 31JAN14 – Outline; Summer 2014 - Draft