



## Basin versus project planning: Who should do what and where?

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Oslo Hydropower Sustainability Forum  
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## SANTA EULALIA SUB-BASIN, LIMA, PERU

Sustain  
Generate

**10 million inhabitants in Lima**  
**50% of the water**  
**70% of the energy**



1.) Aerial view of the Lima City



2.) Sheque dam, in the upper part of the Santa Eulalia's sub basin

*Source: Publio Metronews*

## SANTA EULALIA SUB-BASIN, LIMA, PERU

### CHALLENGES

- Population suffers from **water, food and energy insecurity** (nexus)
- Growing concerns on glaciers melt and **Climate Change and uncertainties ie.flood events, etc.**

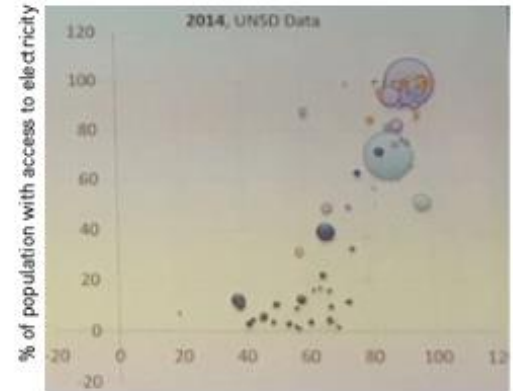
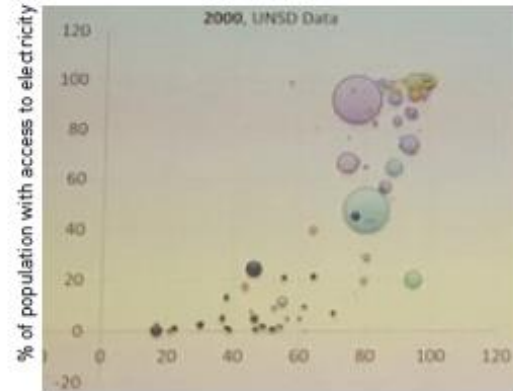


3.) Deteriorated glacier of the upper part of Santa Eulalia's sub basin



4.) Callahuanca's hydroelectrical power plant in Santa Eulalia's sub basin, after the flood disaster in March 2017

## WATER - ENERGY & SOCIAL EQUITY



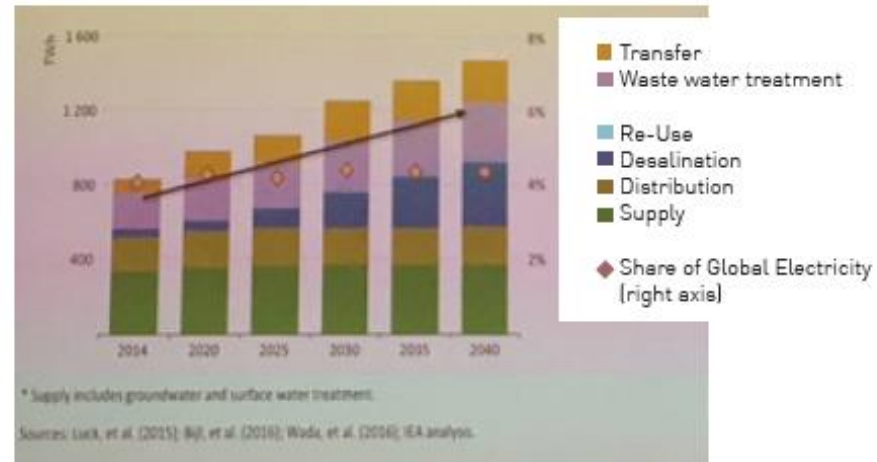
- Australia and New Zealand
- Eastern and South Eastern Asia
- Latin America and the Caribbean
- Oceania
- Central and South Asia
- Europe and Northern America
- Northern Africa and Western Asia
- Sub-saharan Africa

## ENERGY FOR WATER

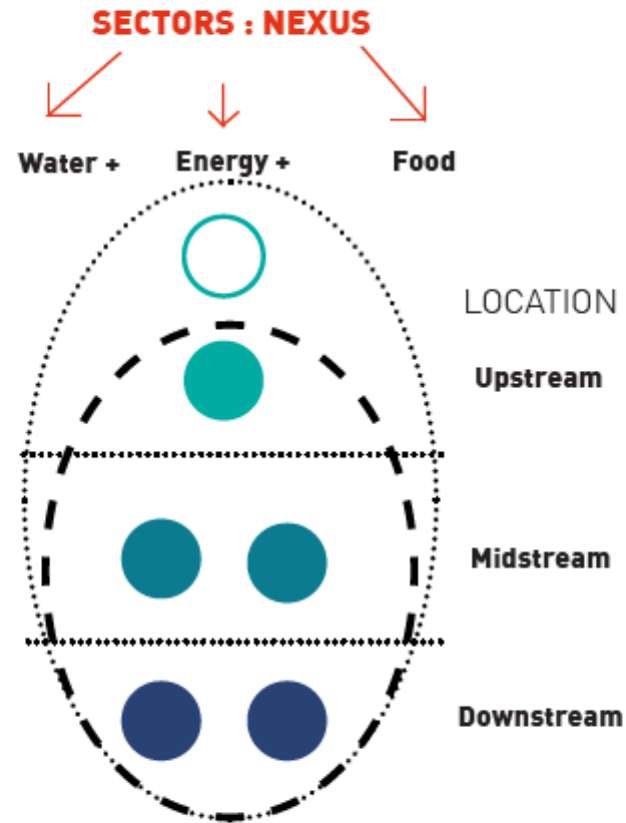
In 2014, water sector consumed

- 4% of total electricity consumption
- 40% for extraction
- 25% for wastewater treatment
- 20% for water distribution

To 2040s, the amount of energy used for the water sector is projected to double (IEA,2016c)



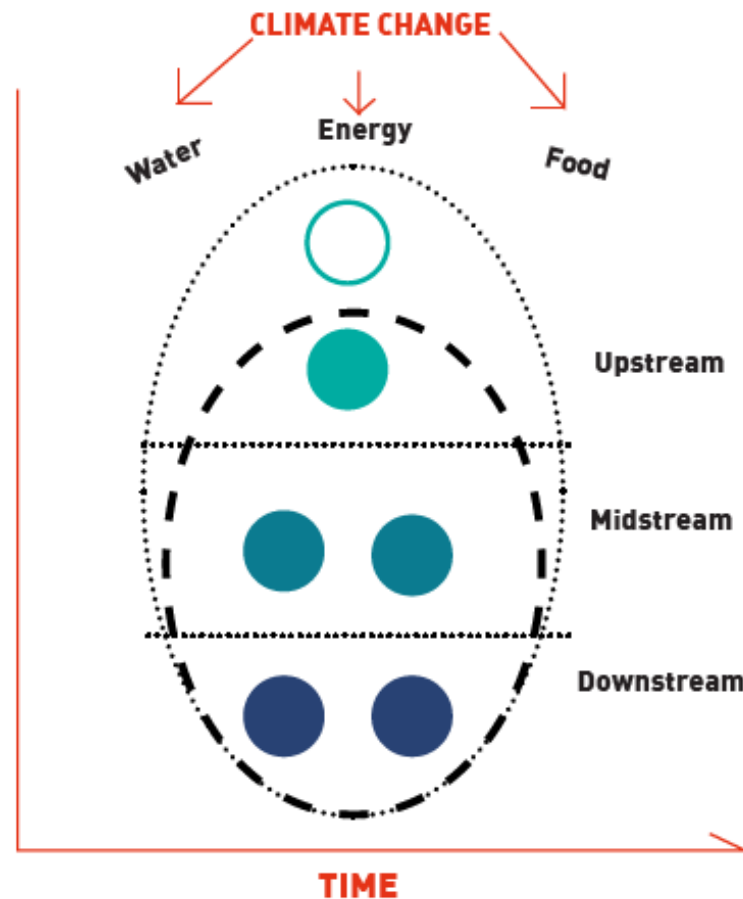
# 1.) PROJECT → PROGRAMME



Source: Lower Mekong Institute, Food Security

### 3.) PROJECT → NATURE

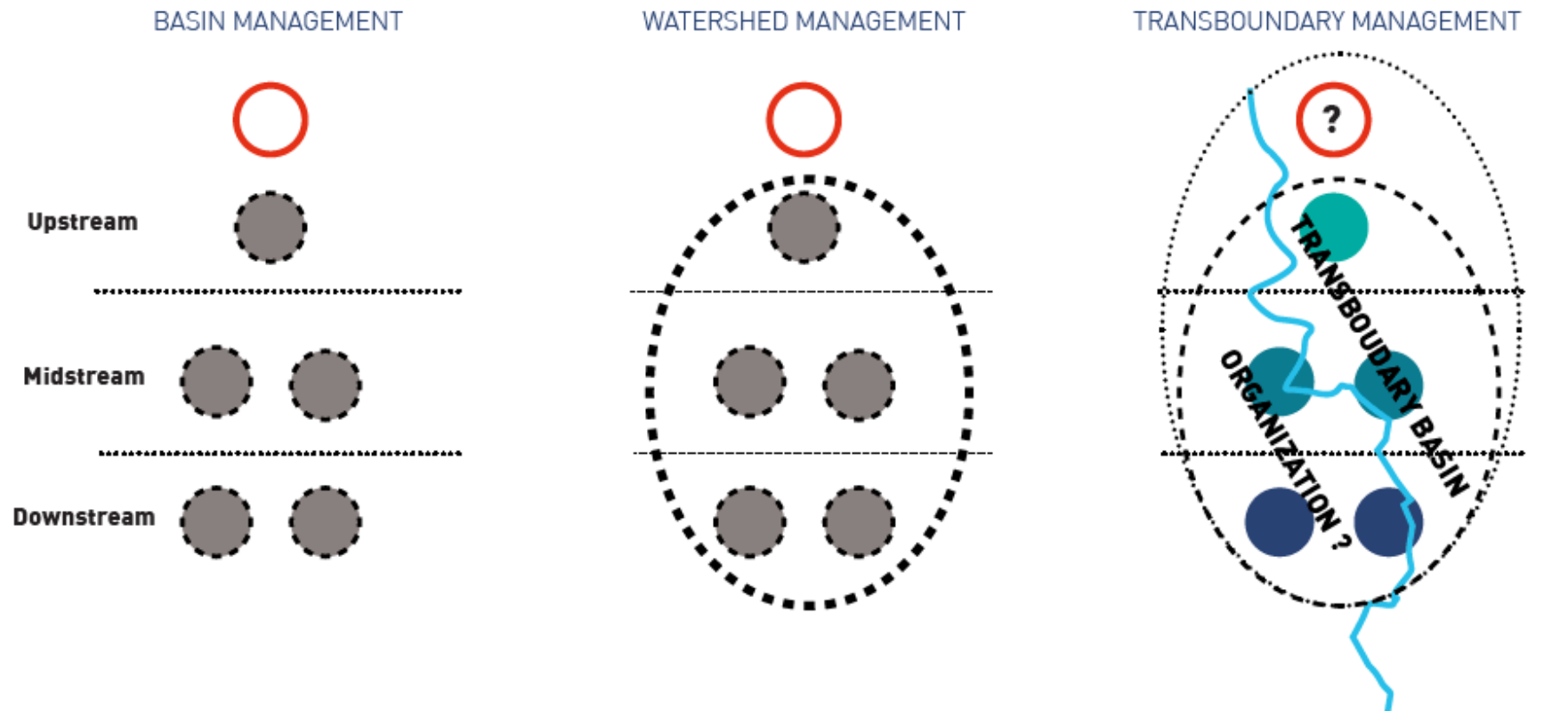
- Lack of consideration in the time-scale
- Lack of anticipation to changes
- No **'Adaptation Strategies'**



#### 4.) SILO VISION : Limiting Factors

##### 4.1) Scale Management Issue ↑ Basin and watershed division

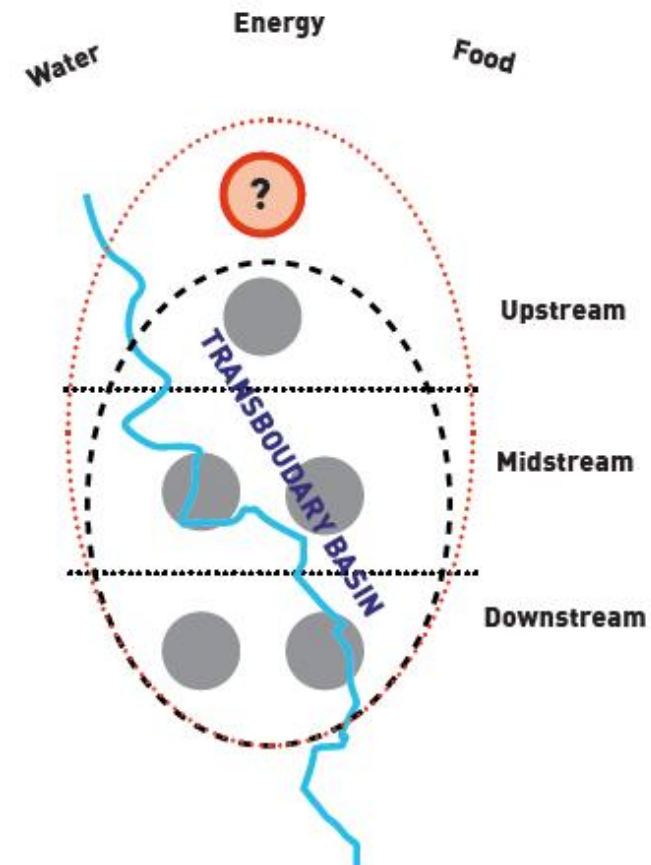
##### 4.2) International Trading Economy



#### 4.) SILO VISION : Limiting Factors

4.1) Scale Management Issue → Basin and watershed division

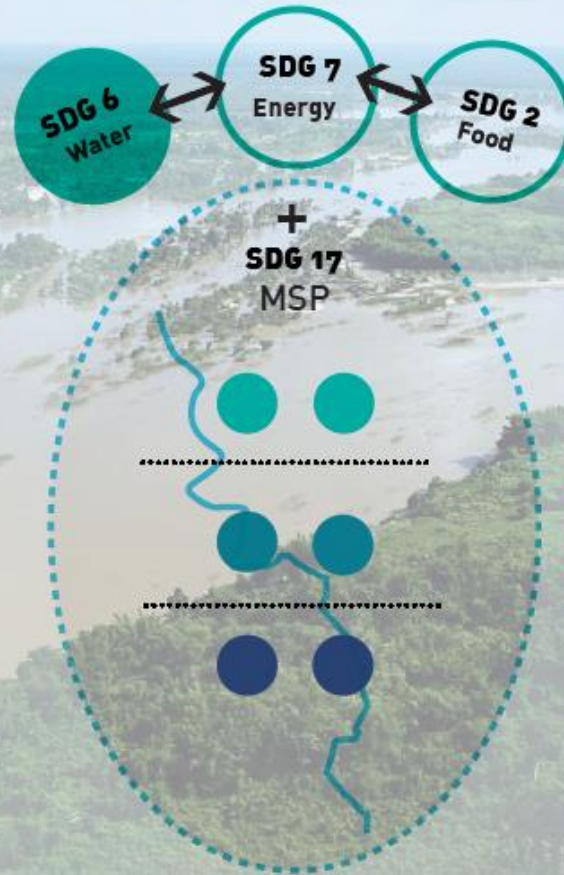
**4.2) International Trading Economy → Silk Road / New Economic Zone initiated by China**





## RETHINKING THE WAY FORWARD

GWP VISION : Water Secure World through **SDG 6.5 (IWRM)**



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