



IADS

Water Security in the Delta

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Your Delta issues & dreams with regard to Water Security



“Water Security is the capacity of a population to safeguard sustainable **access to adequate quantities of acceptable quality water** for sustaining livelihoods, human well-being, and socio-economic development, for ensuring **protection against water-borne pollution and water-related disasters**, and for **preserving ecosystems** in a climate of peace and political stability.”

–UN Water (2013)

What ?

Water Security in the Delta

What is Water Security?

"The capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability."

Working definition, UN-Water, 2013



GOOD GOVERNANCE

Adequate legal regimes, institutions, infrastructure and capacity are in place.



TRANSBOUNDARY COOPERATION

Sovereign states discuss and coordinate their actions to meet the varied and sometimes competing interests for mutual benefit.



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PEACE AND POLITICAL STABILITY

The negative effects of conflicts are avoided, including reduced water quality and/or quantity, compromised water infrastructure,



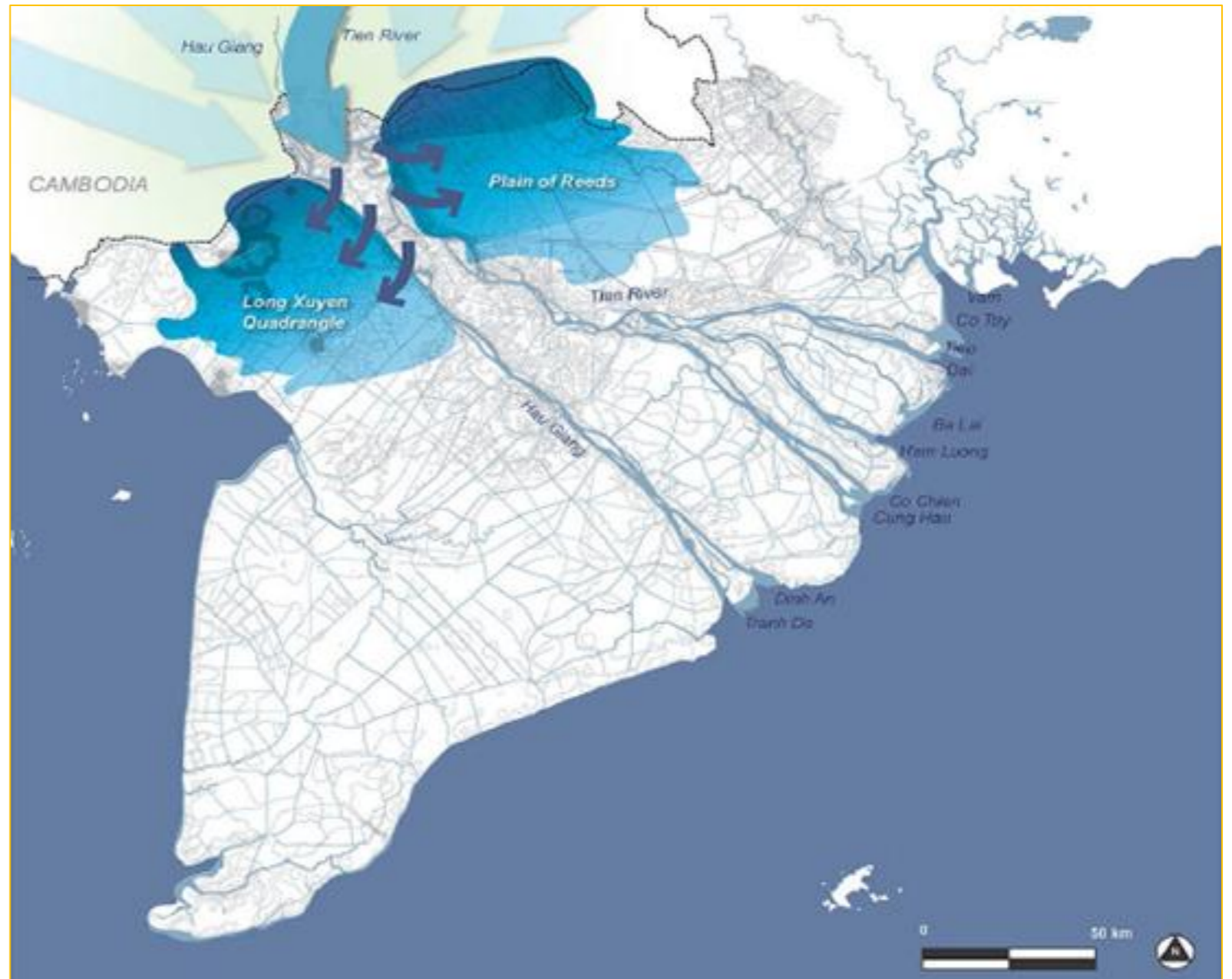
FINANCING

Innovative sources of financing complement funding by the public sector, including investments from the private sector and

Worldwide..Mekong Delta..

Challenges

- Conversion of upper delta to triple rice cropping has destroyed its “sponge” capacity: **absorbing** water in wet season and **releasing** it in dry
- Results are increased flood risk in wet and dry season water shortages



.. Bangladesh Delta..

Challenges

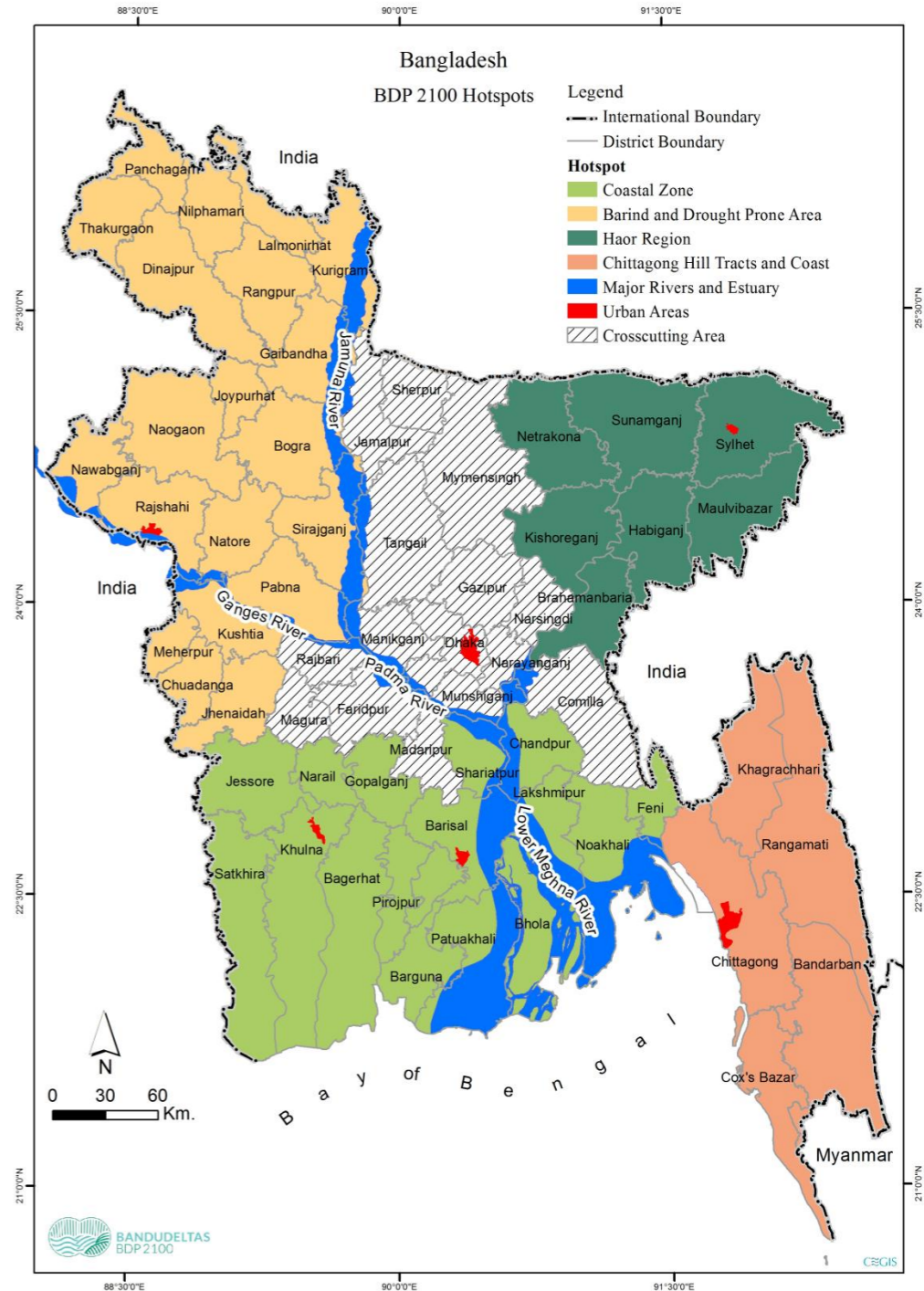
- Ambition to attain middle-income country status
- Extreme adverse climate variability, with frequent storm and tidal surges, flooding and droughts. (e.g. without action, by 2050, climate change impact could make an additional 14% extremely vulnerable to floods, dislocate more than 35M people)
- Recent and future anthropogenic changes in the hydrological cycle (e.g. construction of dams and barrages in the upstream countries and the increasing water demand)
- Need for an integrated holistic plan for long term future land and water management in relation to water safety and food security, supported by all relevant stakeholders



.. Bangladesh Delta..

Goals

- Ensure safety from floods and climate change related disasters
- Ensure water security and efficiency of water usages
- Ensure sustainable and integrated river systems and estuaries management
- Conserve and preserve wetlands and ecosystems and promote their wise use
- Develop effective institutions and equitable governance for in country and trans-boundary water management
- Achieve optimal use of land and water resources



... Dutch Delta..

- Netherlands protected after 1953 Storms
- Unprecedented protection level 1:10.000
- Completion of civil structures took 40 years

1st Dutch Delta Plan resulted in:

- Ecosystems degradation (algae)
- Impact on local economy (fisheries)
- Natural erosion/sedimentation balance
- Complete rely on prevention only
- Risk of catastrophic failure (O&M)



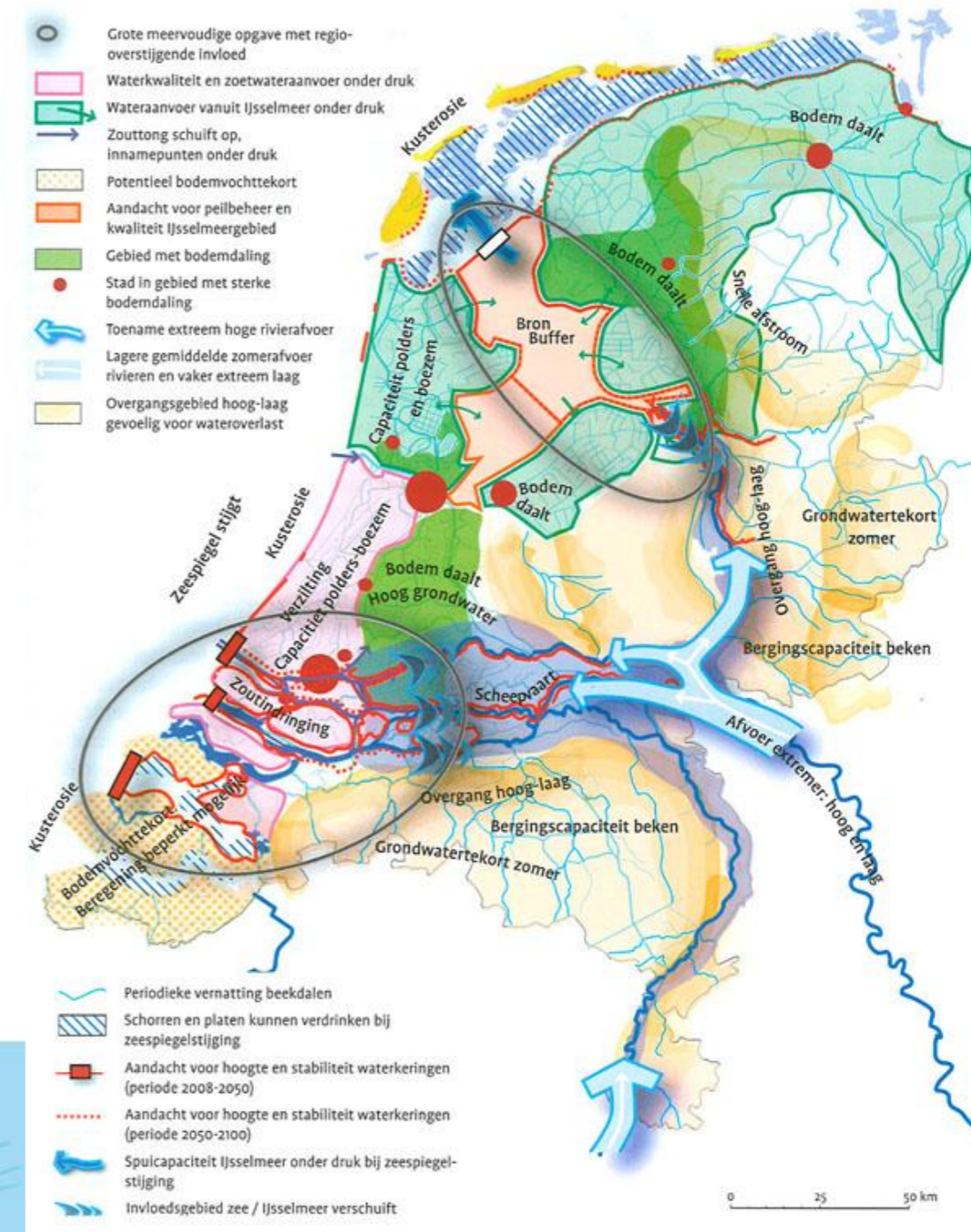
... Dutch Delta (2)

2nd Dutch Delta Plan includes:

- Adapting to climate change
- Public support, funding
- Systems/Multi-layer approach
- Living with Water
- Building with Nature
- Room for the River
- Long term
2100 - 2200



A. Belangrijkste wateropgaven



With Whom?

1. **Delta Coalition (G2G)**

First international coalition of governments a partnership to get things done to make Delta's more resilient

<http://www.deltacoalition.net/>

2. **Delta Alliance (K2K)**

international knowledge-driven network organization

Mission: *improving the resilience of the world's deltas*

<http://www.delta-alliance.org/>

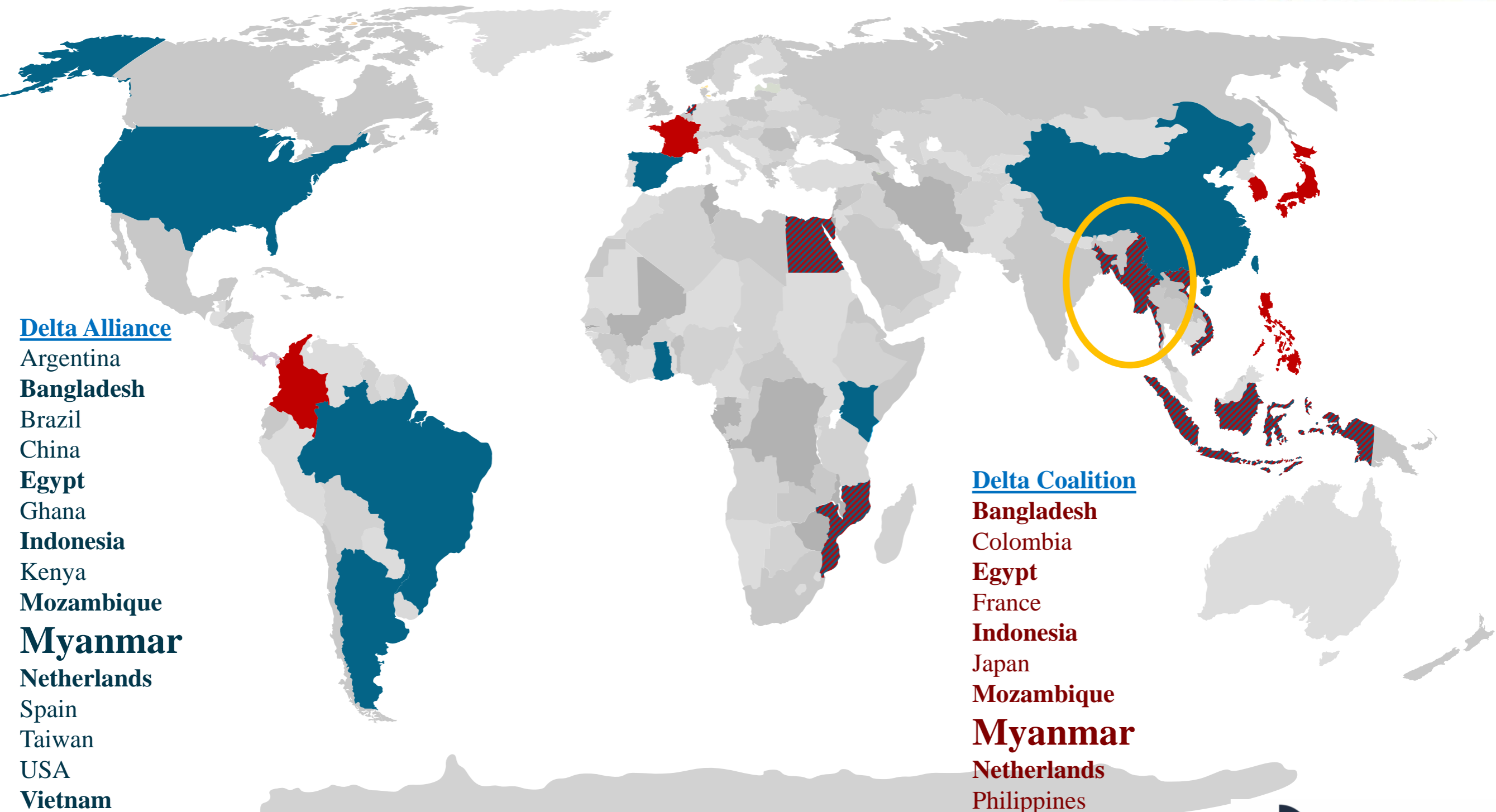
3. **MoU on IWRM Cooperation
Myanmar ↔ Netherlands (G2G)**

4. **Delta Development Working Committee
(Myanmar) & IADS Working Groups**





Delta Coalition and Delta Alliance countries

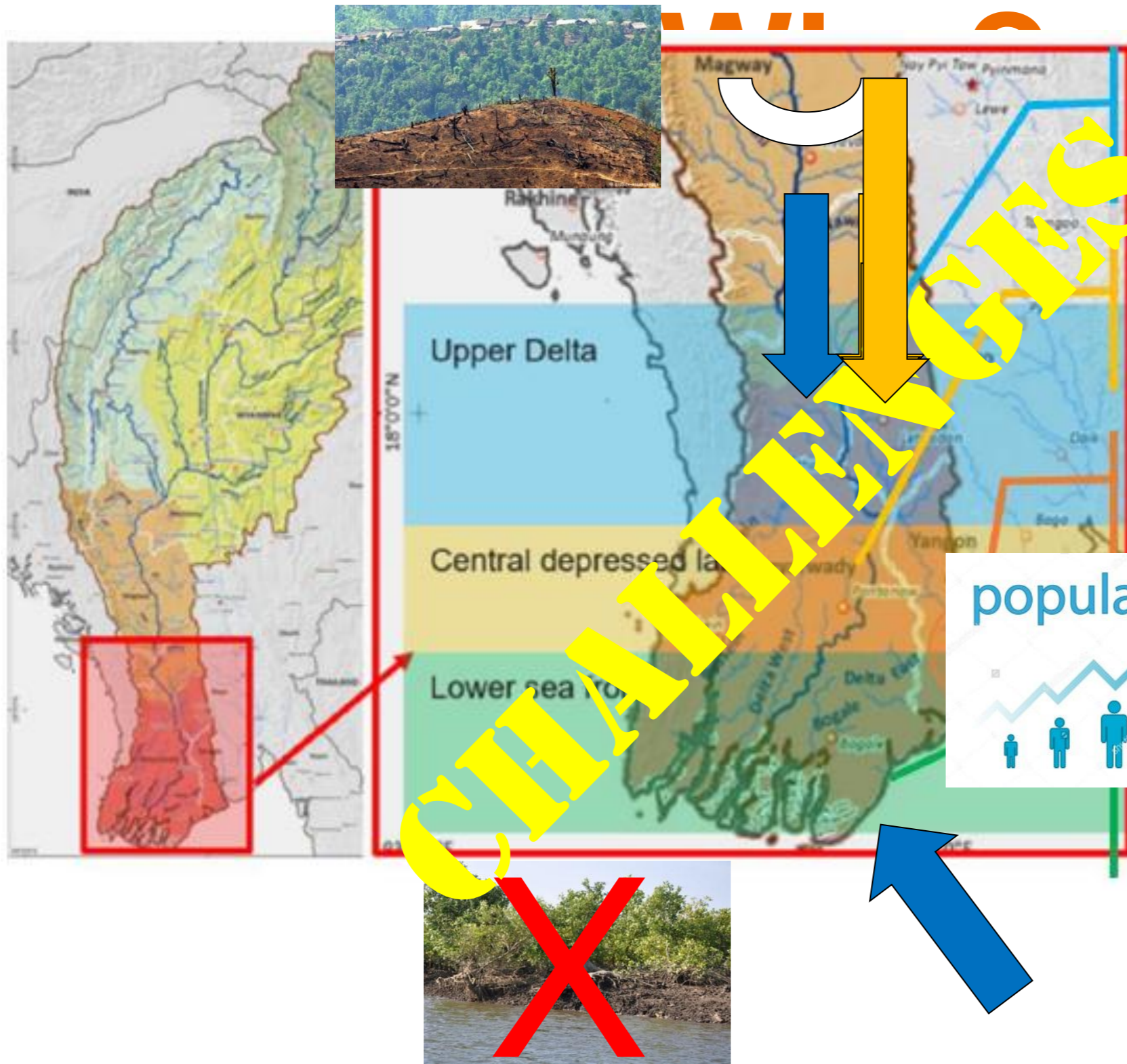


Delta Alliance

- Argentina
- Bangladesh**
- Brazil
- China
- Egypt**
- Ghana
- Indonesia**
- Kenya
- Mozambique
- Myanmar**
- Netherlands
- Spain
- Taiwan
- USA
- Vietnam

Delta Coalition

- Bangladesh**
- Colombia
- Egypt**
- France
- Indonesia**
- Japan
- Mozambique
- Myanmar**
- Netherlands**
- Philippines
- South-Korea
- Vietnam**



- Small tidal movement
- Horseshoe shaped dike system
- Extreme high water levels after cyclone (2015)
- Concerns for future high water levels

- Tidal movement
- Availability of freshwater in the estuaries and creeks
- Some dike protected islands/polders
- Flooding in areas without dikes /lower parts

- Fast growing population
- Industrialization
- Changes in land use



- Tidal movements
- siltment deposits
- saltwater intrusion
- due to cyclone-induced storm surges
- in some dike protected islands/polders
- Tipping point of accretion coast
- Coastal erosion
- Serious degradation of mangroves

Ayeyarwady River Basin

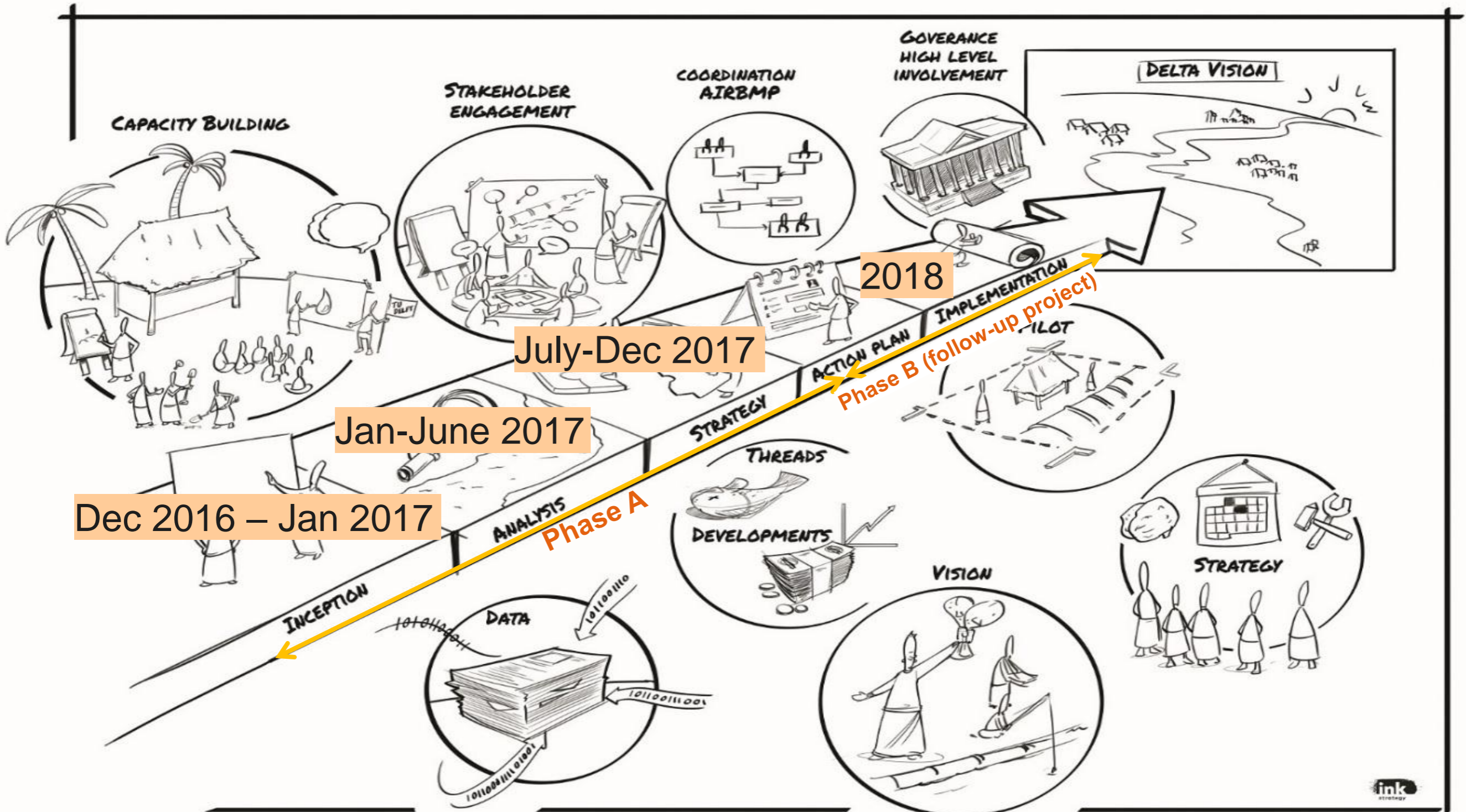
Ayeyarwady Delta

Issues and Developments

Benefits of flooding

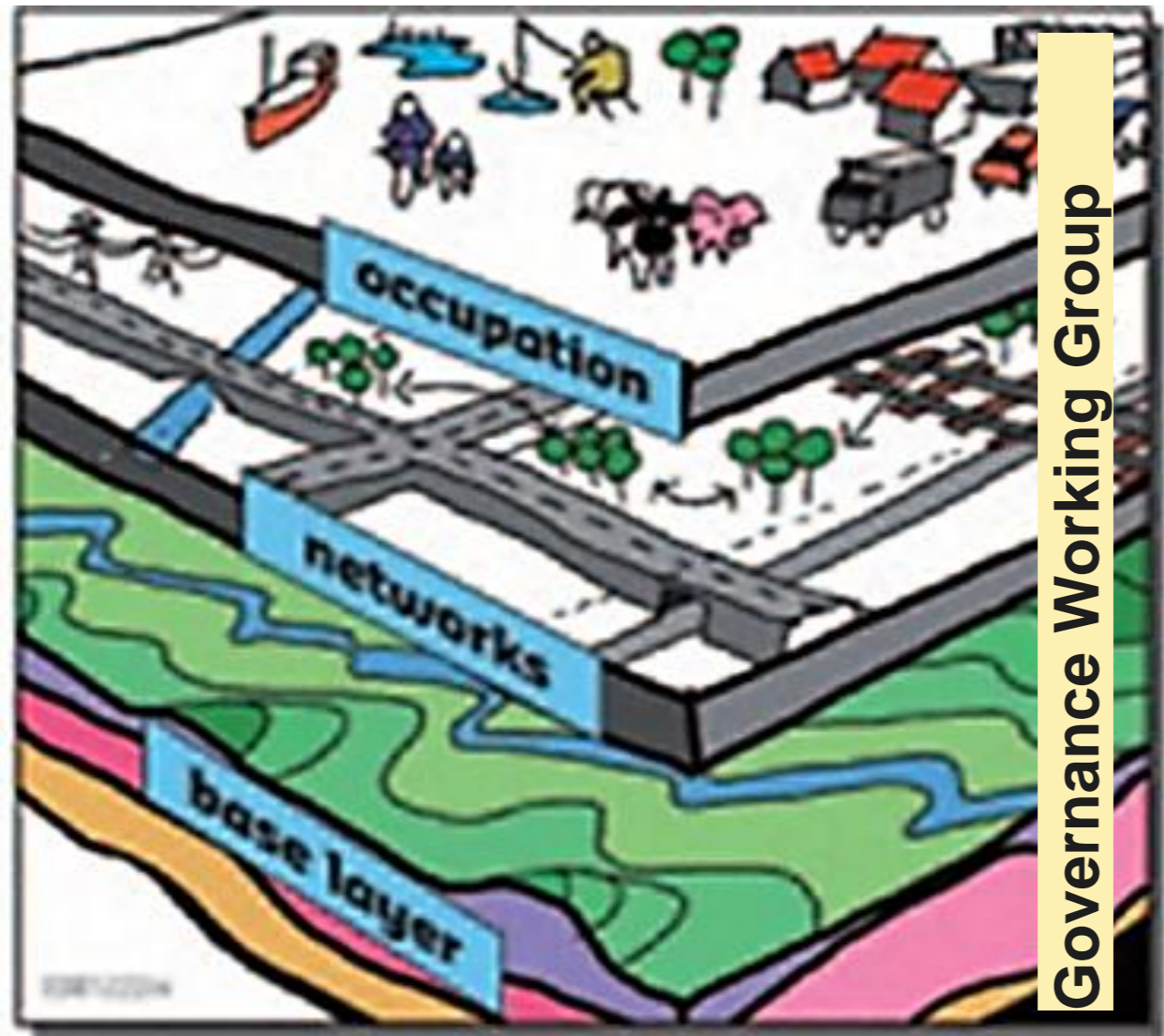
- water supply for the dry season,
- floods will bring sanitation of the land,
- enhance pest control, discharge accumulated pollutants,
- replenish the fish in ponds and open fields,
- enhance fish migration and spawning,
- provide more opportunities for navigation and recreation,
- bring fertile sediments to the soils, delta, coastal waters,
- enhance delta formation, bring nutrients to the delta,
- rejuvenation of wetlands,
- replenish groundwater storage,
- flush the water systems, improve water quality,
- cultural/religious values and esthetic aspects.

How?



Integrated Ayeyarwady Delta Strategy Project (IADS) – Step by Step together

Delta Layers Approach



Occupation



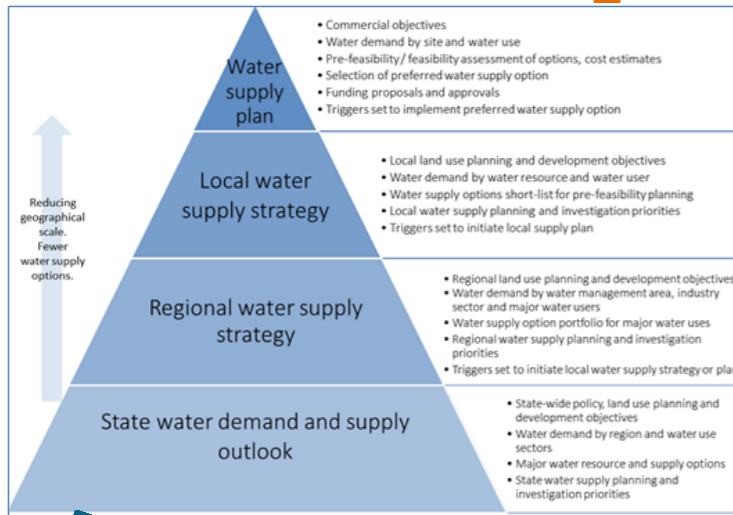
Network



Baseline

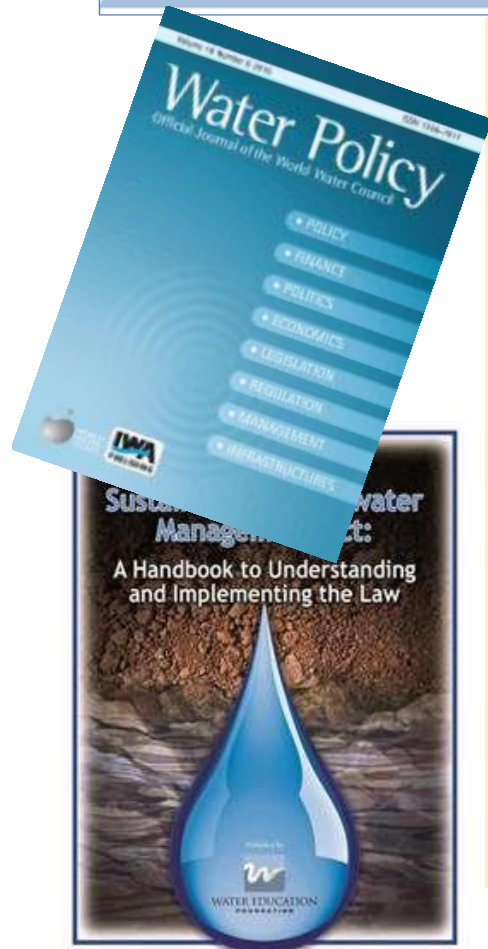


Example Layer Approach



Occupation: Water extraction for houses

Data: Number of settlements requesting for water. Water uses at the moment by houses and other sectors. Water demand.



Governance: Policies for groundwater use
Underground water Act
Plans on water supply

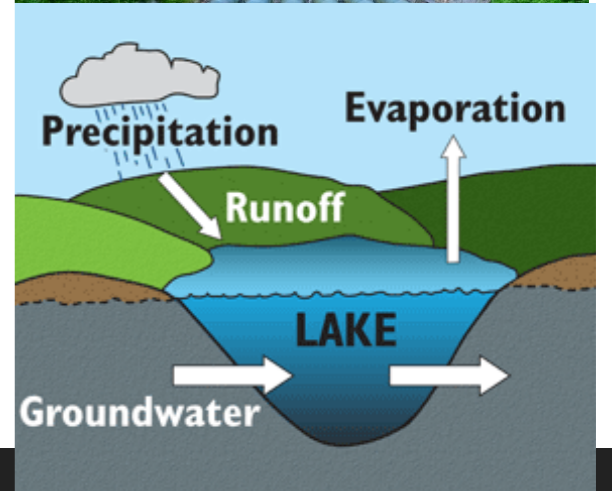
Network: Water supply system

Data: Existing water supply systems. Using rainfall or groundwater.



Baseline: Water quantity and ground water and rainfall

Data: Groundwater availability in which seasons. Water quality. Rainfall.



MYANMAR DELTA DEVELOPMENT WORKING COMMITTEE

U Ko Ko Oo (Chairman) – DWIR MoTC + 28 representatives of different depts, national and regional level & YCDC

PROJECT MANAGEMENT Consortium

GOVERNANCE WORKING GROUP

- MOTC – DWIR
- MOALI – Land Record Dept
- MONREC – Aerial Survey & Photography Div.
- Ministry of Planning & Finance
- General Administration Department



OCCUPATION WORKING GROUP

- MOTC – DWIR
- MOALI – Dept. of Fisheries
- MOALI – Dept. of Agriculture
- MOALI - Dept. of Rural Development
- MOALI – Land Record Dept
- MONREC – Forest Dept.
- MSWRR – Relief & Resettlement Dept.
- YCDC – Water & Sanitation



Peter Kerssens

Arie van Duijn

CORE TEAM Consortium

Enrico Moens

Rob Steijn
Marjolijn Haasnoot

Tjitte Nauta

NETWORK WORKING GROUP

- MOTC – DWIR
- MOALI – IWUMD
- MONREC – Environmental Conservation Dept.
- MOC – Urban & Housing Dept
- YCDC – Water & Sanitation
- MoE – Yangon Technological University (YTU)



BASELINE WORKING GROUP

- MOTC – DWIR
- MOTC - DMH
- MOALI – IWUMD
- MONREC – Survey Dept.
- MONREC – Environmental Conservation Dept.
- MONREC – Forest Dept.







IADS Core team & Key Experts

Governance



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Catharien Terwisscha

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Coach Governance Group



Arie van Duijn
Coach Occupation layer Group



Occupation

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Cor van Duin

Network



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Coach Network Layer Group



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Andrew Wyatt



Johannes de Groot

Baseline

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expert (Baseline)



Johannes de Groot (Arcadis)
Delta Atlas
Geotechnical Expert
(Baseline & Network)

Step by Step together..



- 1. Issues in the Ayeyarwady Delta?***
- 2. Changes and trends in the Delta?***
- 3. Dreams for the future Development of the Delta?***

**Work Water Day's IADS
Online Survey:**

www.iadsmyanmar.com/survey

IADS



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WORLD WATER DAY 2017 - IADS ONLINE SURVEY:
WWW.IADSMYANMAR.COM/SURVEY

Your
Opinion
matters

