

RESULTS OF WEPA QUESTIONNAIRE

WEPA INTERNATIONAL WORKSHOP

23 FEBRUARY 2011

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WEPA QUESTIONNAIRE ON CC AND WATER ENVIRONMENT

FY2009: One Questionnaire

Climate Change in Water Resource and Environment
Policies/Strategies

FY2010: Two Questionnaire

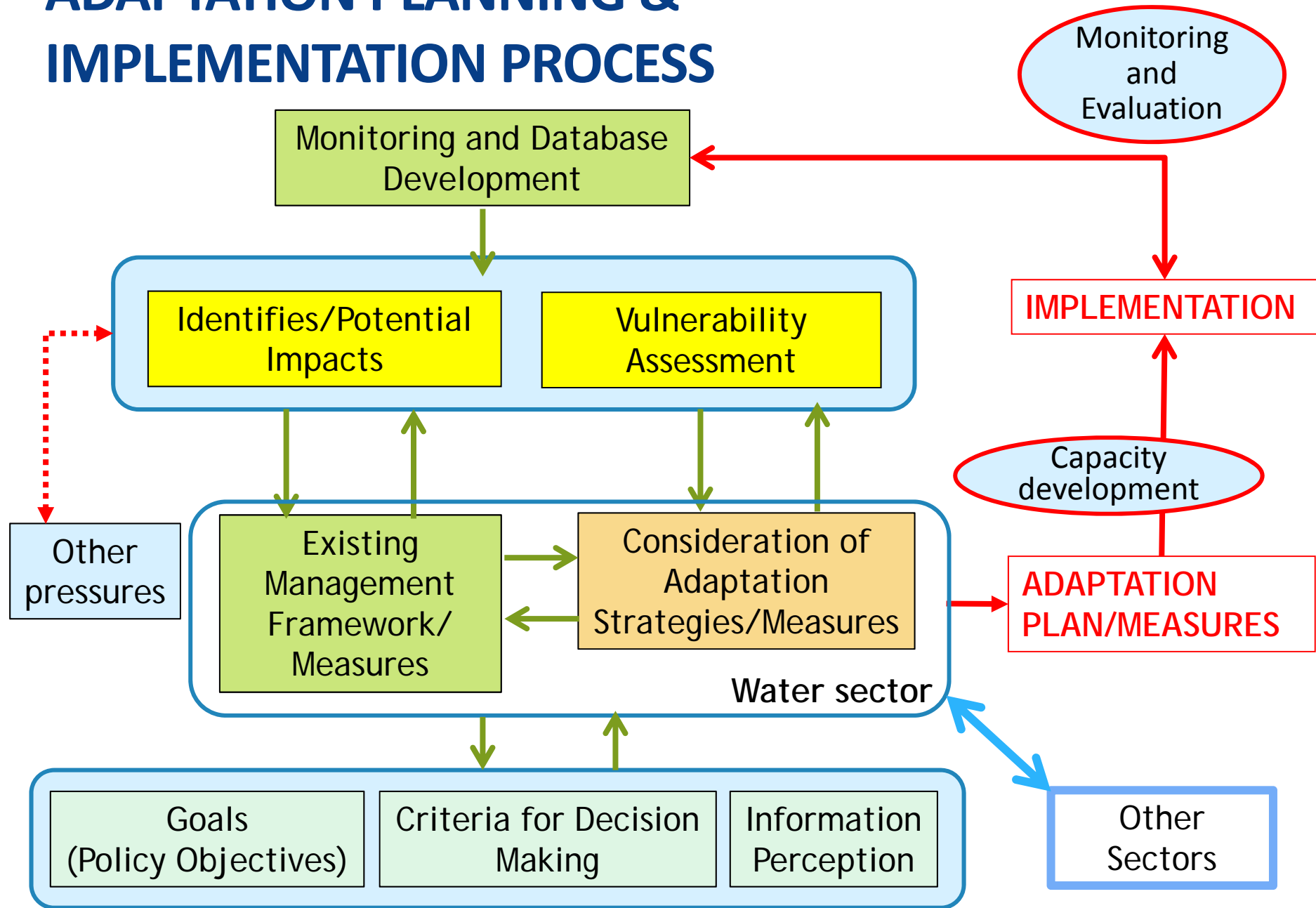
C1:

Climate-Water Related Information to Investigate Impacts of
Climate Change to the Water Environment

C2:

Perception Survey on Climate Change Impacts on the Water
Environment in WEPA countries

ADAPTATION PLANNING & IMPLEMENTATION PROCESS



CLIMATE CHANGE IN WATER RESOURCE AND ENVIRONMENT POLICIES/STRATEGIES (FY2009) - BASICS

OBJECTIVE

To understand to what extent climate concerns are included in the current water resource/environment policy/strategies

TARGET

WEPA focal point (or the person who participated in the 1st Workshop in March 2010)

ANSWERS

Answer from 10 country representatives
(Ref. 1)

CLIMATE CHANGE IN WATER RESOURCE AND ENVIRONMENT POLICIES/STRATEGIES (FY2009) - FINDINGS

National plan or strategies related to climate and water

- A part of National adaptation program of action, framework, strategies (5 countries + 1 country under consideration)
- National communications (1 country)
- No mention about plans/strategies, but there are adaptation measures identified in agri. Sector (1 country)

Climate change concerns in water resource management plan/strategies

No national strategies/plan names were not in any answers.

However, there are project/program based approaches, in relation to disaster management.

CLIMATE CHANGE IN WATER RESOURCE AND ENVIRONMENT POLICIES/STRATEGIES (FY2009) - FINDINGS

Climate change concerns in water environmental management plans/strategies

- Malaysia (national policy on environment)
- Philippines (IWRM plan)
- Laos (to be drafted)
- Thailand (OEPP document)

CLIMATE-WATER RELATED INFORMATION TO INVESTIGATE IMPACTS OF CLIMATE CHANGE TO THE WATER ENVIRONMENT(FY2010) - BASICS

OBJECTIVE

To identify availability of relevant data related to water and climate that needs to investigate climate change impacts to the water environment

TARGET

WEPA focal point (or the person who participated in the 2nd Workshop)

ANSWERS

Answer from x country representatives
(Ref. 2)

CLIMATE-WATER RELATED INFORMATION TO INVESTIGATE IMPACTS OF CLIMATE CHANGE TO THE WATER ENVIRONMENT(FY2010) - FINDINGS

1) Air temperature data exists in most countries.

2) Water temperature data is available in river is available more than that in other water bodies (lakes, coastal).

→ Do different authorities have water data in lakes and coastal areas?

3) Water quality data at the monitoring stations that has longer data of water temp. are not much available.

→ How about the status of water quality monitoring?

4) Insufficient long-term data for checking correlation of climate change and water related.

PERCEPTION SURVEY ON CLIMATE CHANGE IMPACTS ON THE WATER ENVIRONMENT IN WEPA COUNTRIES - BASICS

OBJECTIVE

To collect the views of water experts in different fields about potential impacts of climate change to the water environment

TARGET

More than 200 experts working in WEPA countries

More than WEPA country representative (12) + the past WEPA meeting participants (163) + selected experts working in WEPA countries (20+)

ANSWERS

up to date, 41 answers are collected.

Nepal (16), Malaysia (5), Indonesia (4), Philippines (3), China (3), Laos (2), Thailand (2), Viet Nam (2), ROK (1), Myanmar (1), Sri Lanka (1); India (1)

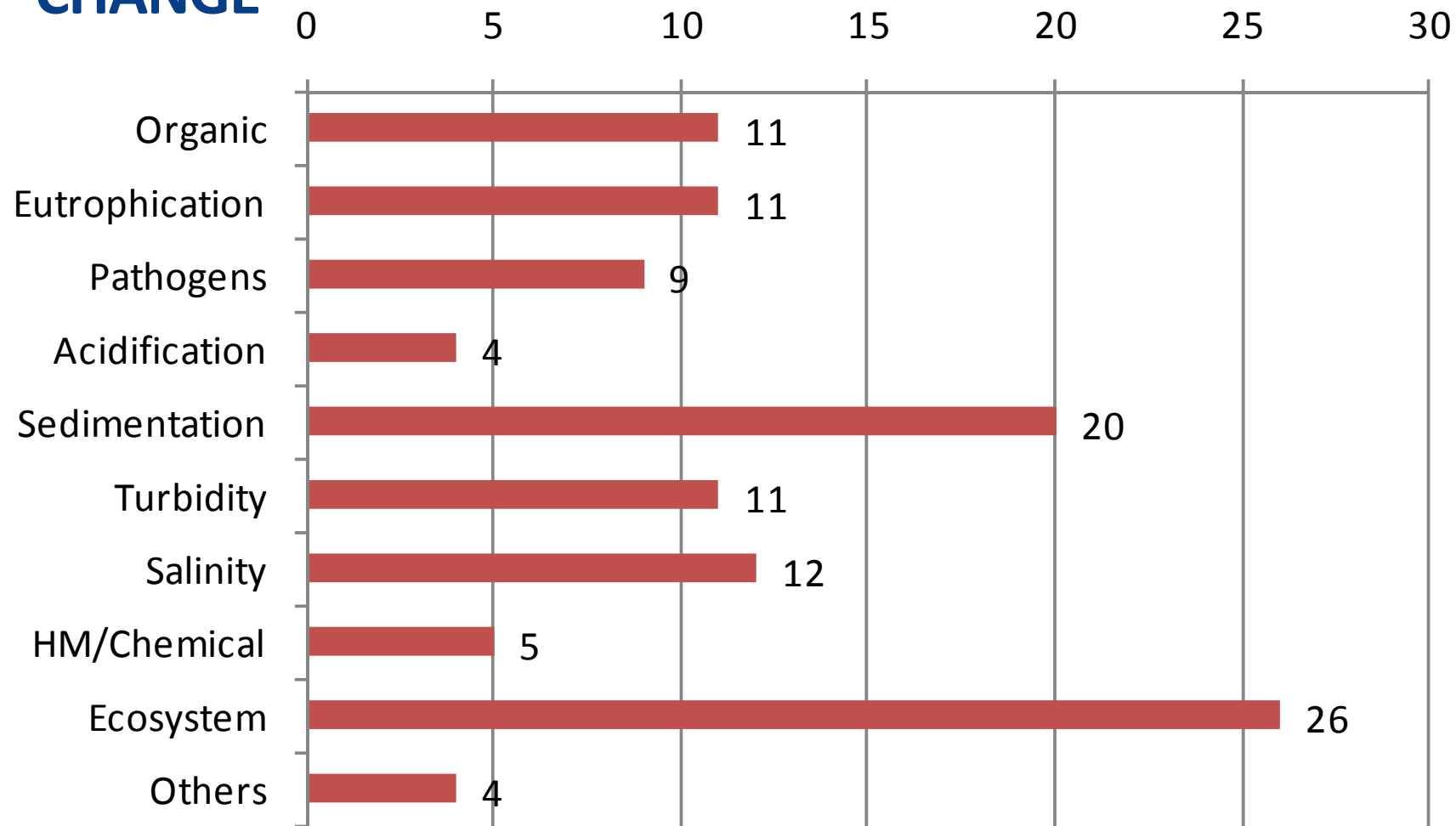
PERCEPTION SURVEY – RESULTS

(1) IMPACTS OF CLIMATE CHANGE ON WQ

Intensifying/Emerging water quality degradation because of climate change	Reason
Strongly Agree (14)	<ul style="list-style-type: none"> ◆ Higher water temperature affects water quality(4) ◆ Salt water intrusion increase salinity (2) ◆ Change in rainfall pattern (5)
Agree (23)	<ul style="list-style-type: none"> ◆ Prolonged dry period/drought (3) ◆ Water shortage (2) ◆ Less discharge, lower flow (8) ◆ Flood (3) ◆ Change in water use (1) ◆ More exploitation of groundwater (3) ◆ Poor wastewater infrastructure increases risks (1) ◆ Impact to local livelihood --- climate impact or other impacts? (how to differentiate?)
Disagree (5)	<ul style="list-style-type: none"> ◆ Unsustainable development is the main cause of degradation and climate Impact is little. ◆ No direct impacts to water quality
Strongly Disagree (0)	-----

PERCEPTION – RESULTS

(2) WATER ENVIRONMENT ISSUES TO BE INTENSIFIED EMERGED BECAUSE OF CLIMATE CHANGE



(Others: ammonical nitrogen, trace metal, POPs)

PERCEPTION – RESULTS

(3) SPECIFIC SITES AFFECTED

Indonesia:

Kampar, Musi, Batang, Hari (Sumatra);

Ciadane, Ciliwung, Citram, Citanduy, Progo, Bengawan Solo,

Bratanas(Jawa);

Barito (Kalimantan);

Saddang Mamasa (Sulawesi)

Viet Nam: Red river (water shortage), Hai Phong, Nam Dinh,

Ninh Thuan, Binh Thuan, Ca Mau (Saltwater intrusion)

Nepal: Bagmati

Sri Lanka: Beira Lake, Kandy Lake

PERCEPTION – RESULTS

(4) AREAS NEED POLICY INTERVENTION

1) Data and Information

- Inclusion of water quality parameter in hydro-climate projection
- Strengthening water quality monitoring
- Data sharing among relevant organizations

2) Strengthening water-climate links

- Incorporate climate adaptation concerns in policies (development, water development policies)
- Development of NAPA
- Categorization/prioritization of climate vulnerable water bodies (rivers)

PERCEPTION – RESULTS

(4) AREAS NEED POLICY INTERVENTION

3) Strengthening pollution source control

- Solid waste management
- Wastewater treatment

4) Wetland/Forest/Groundwater

- Wetland conservation plan/strategies/actions
- Forest management
- Groundwater policy/groundwater extraction control

5) Education/Awareness

- Education on climate change and water quality
- Community awareness program (both climate and water quality conservation)

SUMMARY OF RESULTS OF PERCEPTION SURVEY

-Limitation of this survey:

limited number of answers; unequal country distribution(need further investigation)

BUT

- More people thinks water quality will be affected by change of rainfall pattern

- higher concerns on lower flow/discharge in dry period.
- flood incidents

-Potential damage to aquatic ecosystems is highly recognized.

- Variety of areas need to be policy intervention

- information and data management
- integration of climate concerns and water related plan/strategies
- integrated management (forest-water-climate)
- strengthening of current water pollution control measures (?)

DISCUSSION SESSION

POSSIBLE DISCUSSION TOPICS

- Impacts of climate change - Where and What?
- Possible adaptation actions (areas for policy interventions)
- Data and information need to investigate impacts of climate change (in the future)
- Potential discussion topics/actions related to climate change and the water environment under WEPA

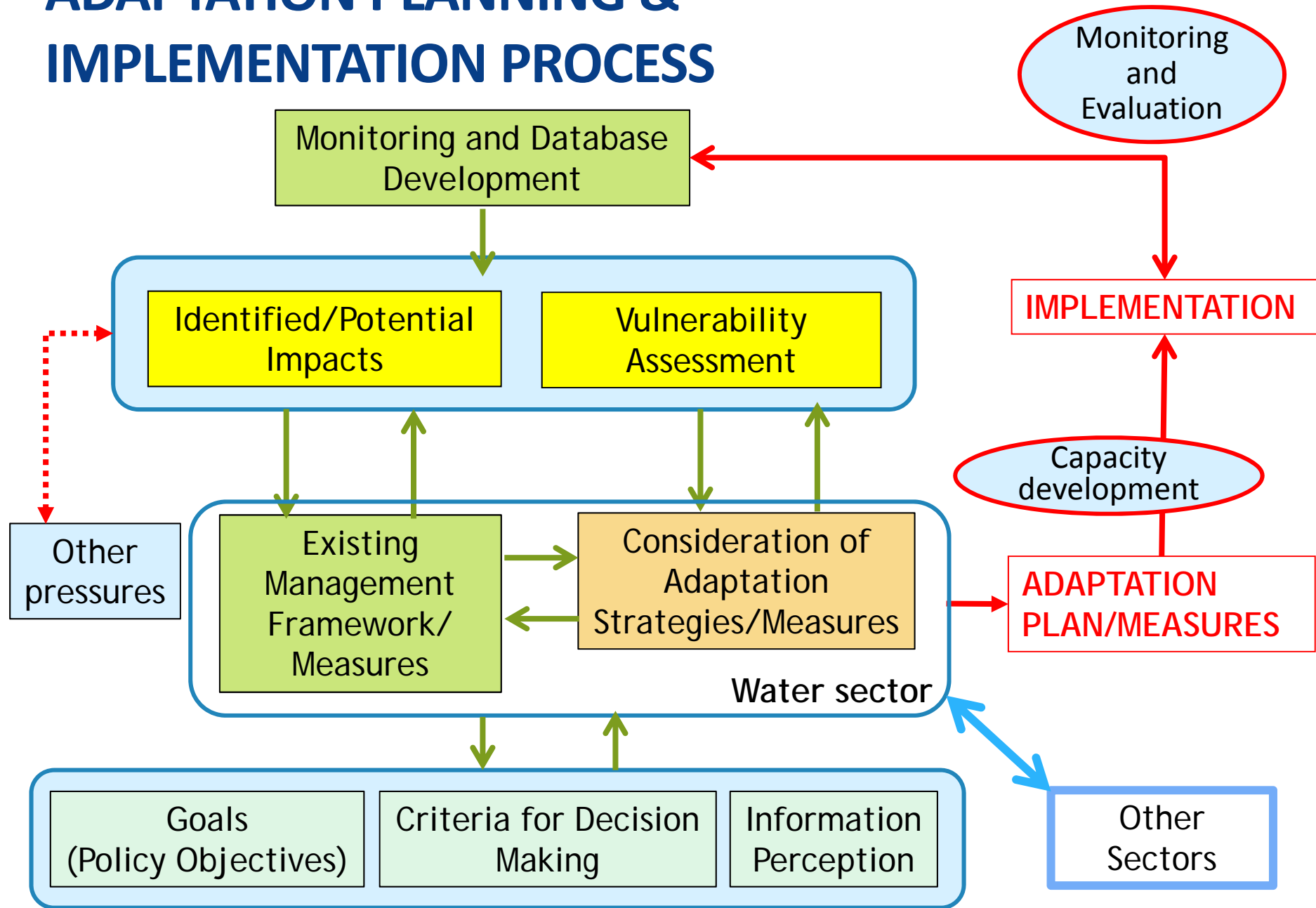
WHAT WILL HAPPEN?

- POTENTIAL IMPACTS TO DIFFERENT WATER BODIES IN YOUR COUNTRY? NO IMPACTS?

Name of Water Bodies	Country	Impact (low – high)



ADAPTATION PLANNING & IMPLEMENTATION PROCESS



CONSIDERING NECESSARY ADAPTATION ACTIONS – WHAT IS NECESSARY IN YOUR COUNTRY?

TYPE OF IMPACTS	LEVEL OF EMERGENCY	ADAPTATION OPTIONS
Impacts observed	Emergent Short-term	
	Less emergent Mid-term	
Potential Impacts (high probability)	Emergent Better to act now	
	Less Emergent Mid-term	
Increase of preparedness		

INFORMATION AND DATA NEEDS?

1. DATA MANAGEMENT

- Monitoring
- Accumulation
- Sharing
- Evaluation

2. Water quality data necessary to consider climate impacts to water quality (what are necessary element to promote strategic monitoring in consideration of climate change?)

3. Barriers to promote water quality data collection and accumulation (technical and institutional)