

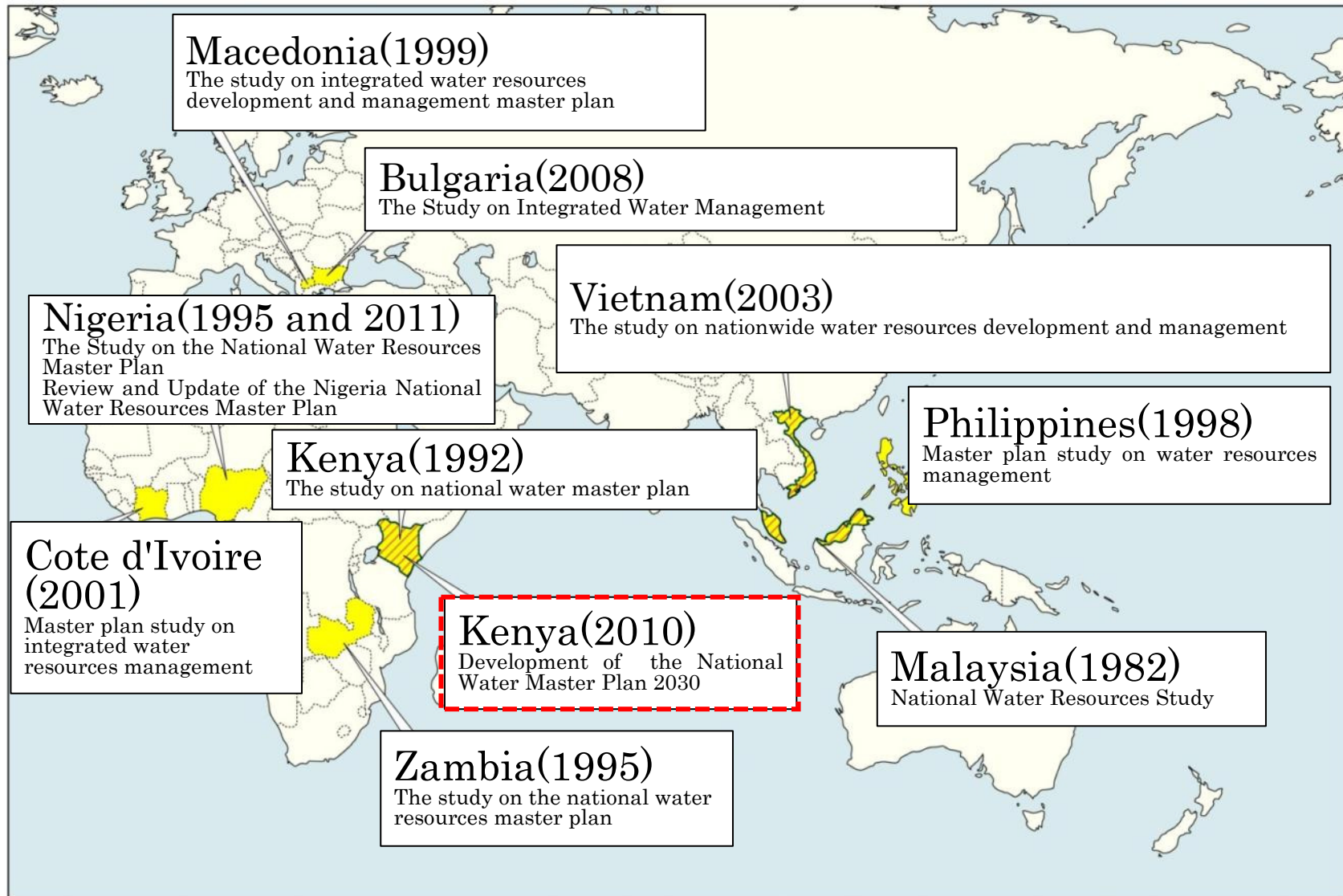


# JICA's Cooperation on Water Resources Using Earth Observation Data

November 25, 2013

Masami FUWA  
Global Environment Department  
Japan International Cooperation Agency (JICA)

# JICA's cooperation in formulation of National Water Resources Master Plans



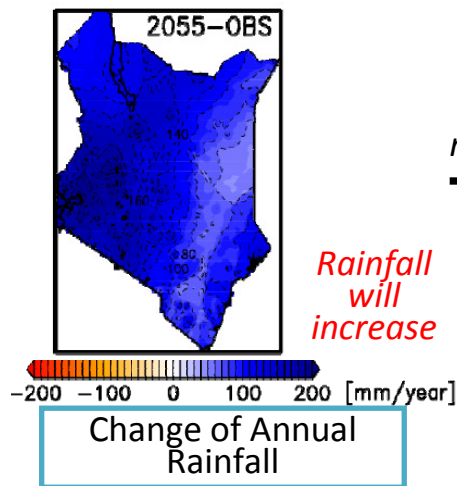
# Case : Kenya

## National WR Master Plan taking climate change into

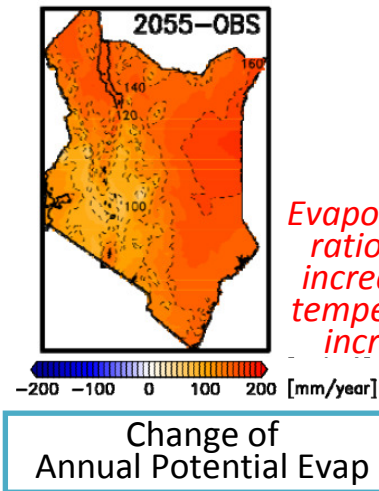
To assess and evaluate availability, reliability, quality, and vulnerability of country's water resources up to 2050 and recommend sound development and management of WR

### 1. Projection of Future Rainfall

- Selection of General Circulation Models (GCMs)
- Bias Correction of GCM Outputs
- Evaluation of Uncertainty of Projected Future Climate
- Evaluation of Projected Future Climate of Kenya

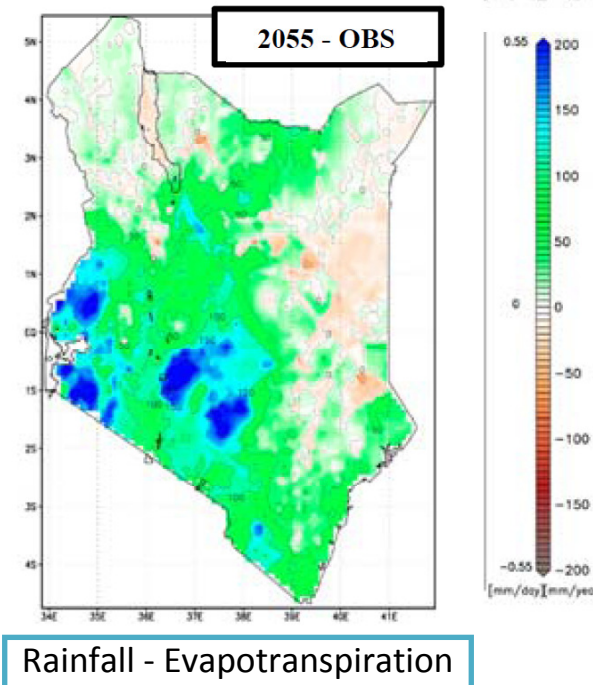


minus



equal

Evapotranspiration will increase by temperature increase



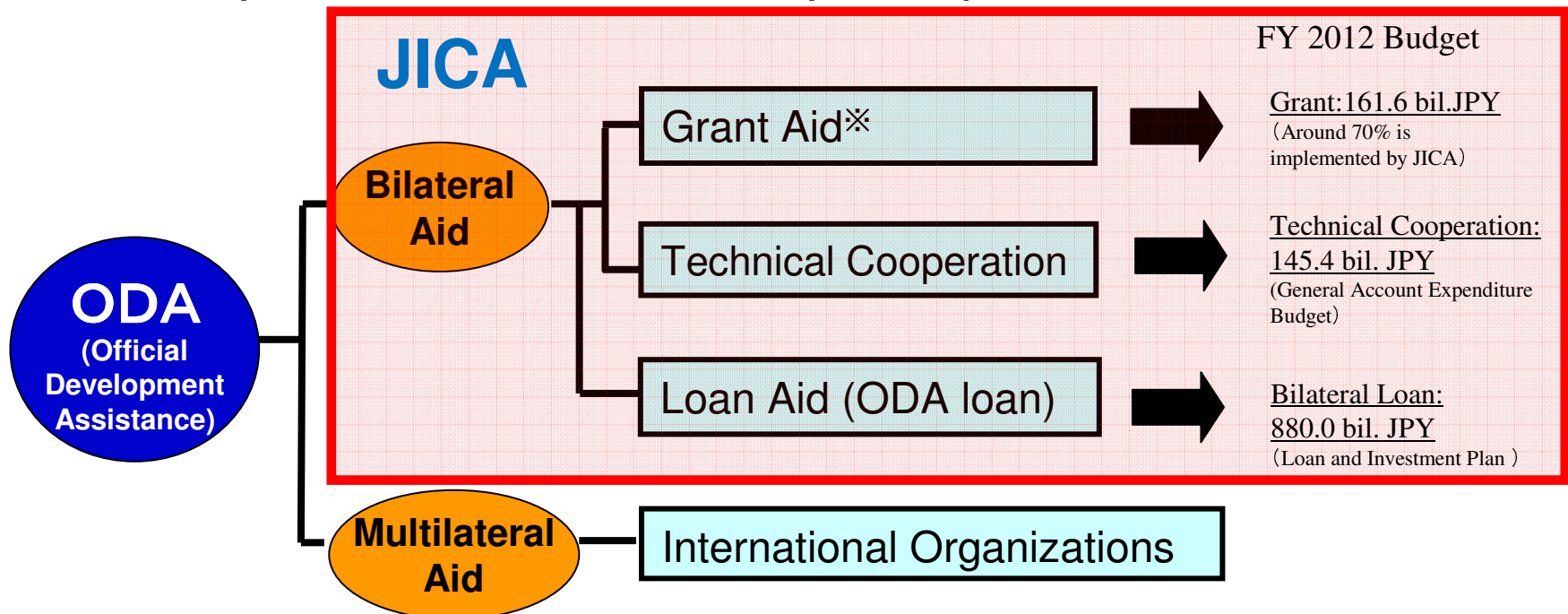
### 2. Rainfall – Runoff Analysis

- Preparation of Rainfall-Runoff Model
- Estimation of Future Runoff
- Assessment of Climate Change Impact to Runoff (River Flow)

The changes in water resources availability (rainfall – evap.) are unevenly distributed. **The western part of Kenya is expected to be more wetted, while the eastern part is anticipated to be drier.**

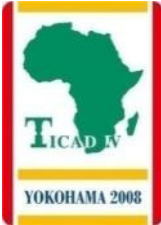
# Japanese ODA and JICA

- JICA is the implementing agency of Japanese **bilateral** ODA
- An **agreement** between governments of a recipient country and Japan, based on an **official request** through the diplomatic channel, is a prerequisite



※Non-project Assistance and Emergency Grant Assistance remain with MOFA

# Japan's Commitment in the TICAD IV (2008)



## Commitment for the Water Sector

1. Development of water facilities to provide safe drinking water to 6.5 million people for 5 years
2. Capacity building of 5,000 water managers/users for 5 years

## Achievements as of March 2012

1. More than **9.8 million people** have got access to safe drinking water
2. **More than 12,000 water managers/users** have been trained

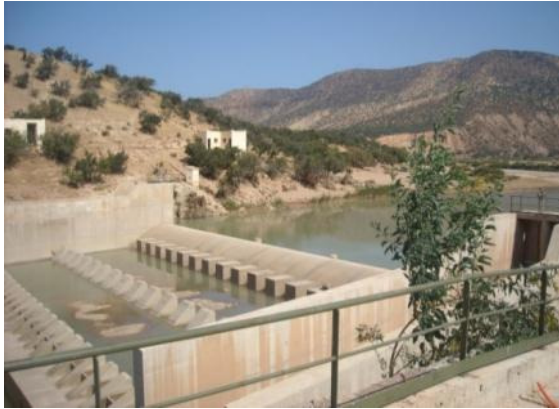


# Groundwater Dev. and Rural Water Supply





# Urban Water Supply



# JICA's support to Water Resources Management

## Case1

### **Formulation of a comprehensive WRM plan**

National water resources master plan in Kenya

## Case 2

### **Formulation of a comprehensive WRM plan with more focus on capacity development**

National water resources management and development master in Nigeria

## Case 3

### **Formulation of a specific WRM plan**

Flood management plan in Medjerda River Basin, Tunisia

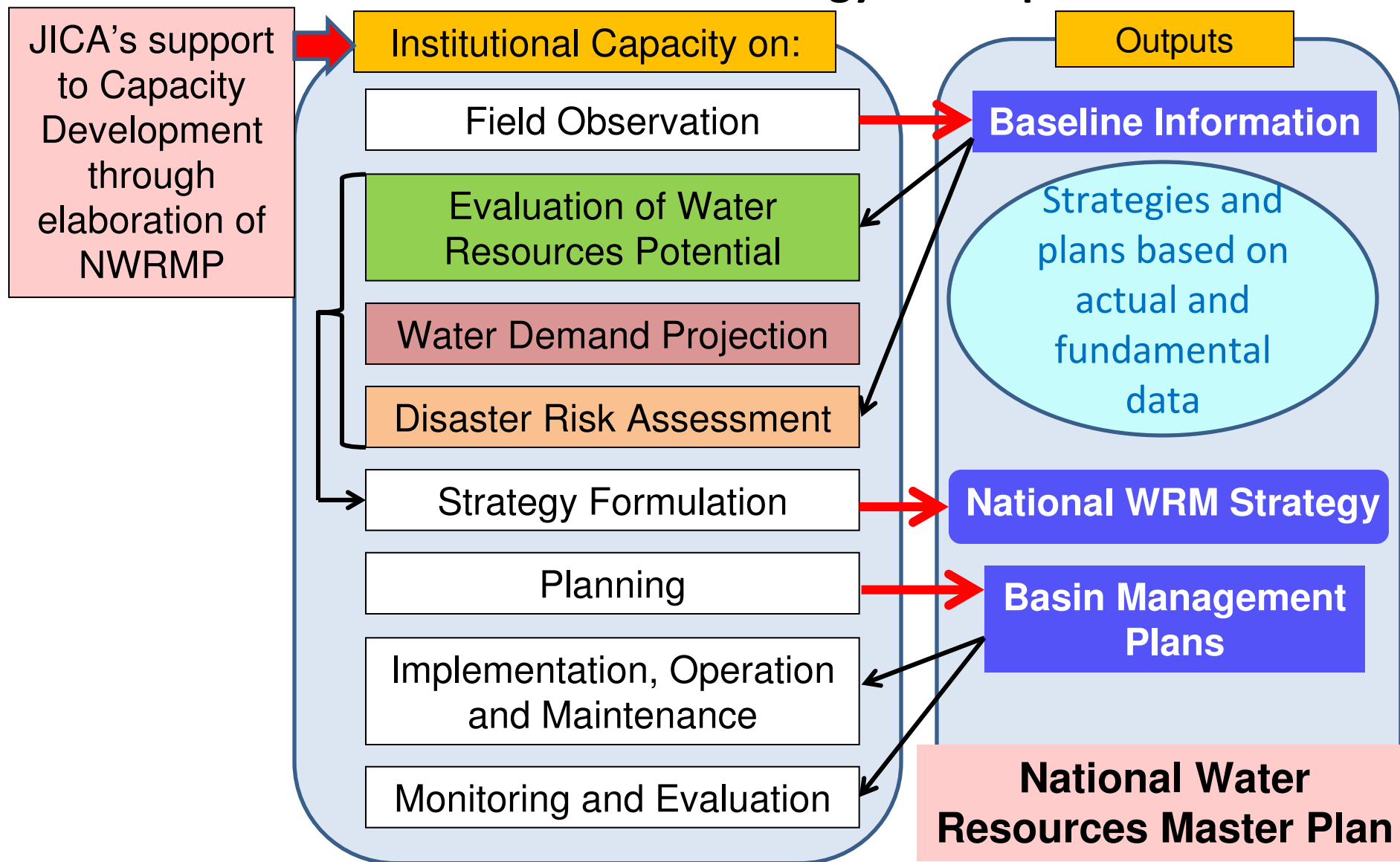
**Another keyword: Incorporating Scientific Method**



# Introduction to cases 1 & 2

## NWRMP: Building National Capacity on WRM

### from Field Observation to Strategy and Implementation



# Case 2: Nigeria

Capacity Development of a newly established IWRM institution through review and update of the National WR master plan



Nigerian Government's commitment for IWRM

Establishment of the Nigeria IWRM Commission (NIWRMC) in 2008



JICA's support

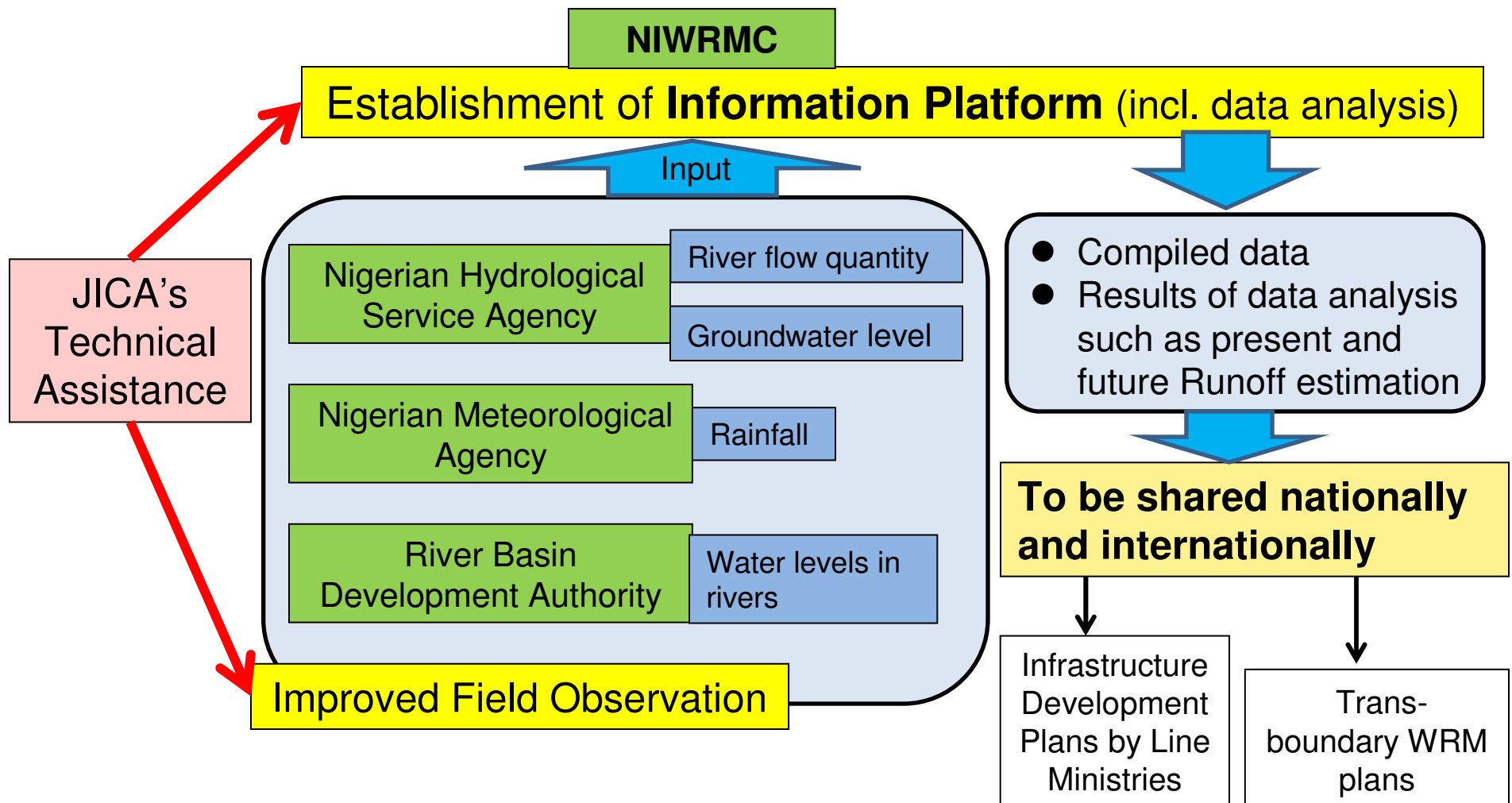
- Policy and Strategy on IWRM
- Formulation of Catchment Management Plans (CMPs)
- Development of Institutional Capacity

## ◆ CMPs for two Pilot Basins

- North Niger (trans-boundary basin along River Niger)
- West Littoral

# Case 2: Nigeria

## Strengthening National Capacity for Managing Baseline Information for WRM



# Case 3: Tunisia

## Flood Control Project for the Medjerda River Basin

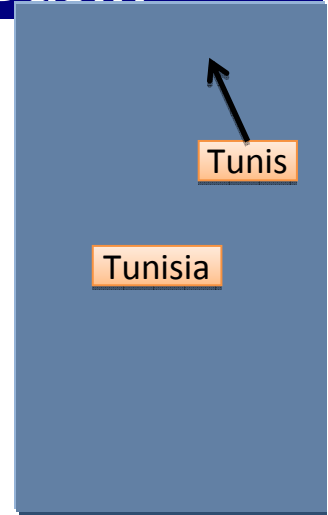
### 1. Background

- Increasing Flood events in the lower basin. ('03, '04, '05, '09 and '12. No flood between '81 - '02. )

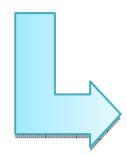
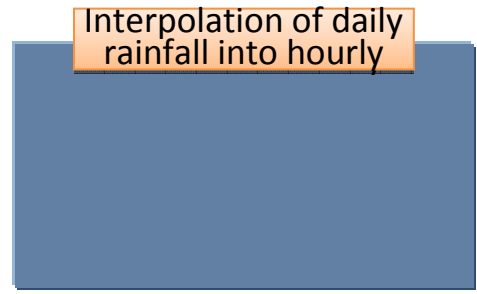
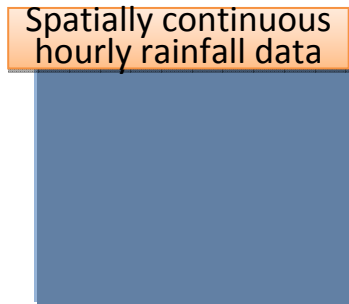
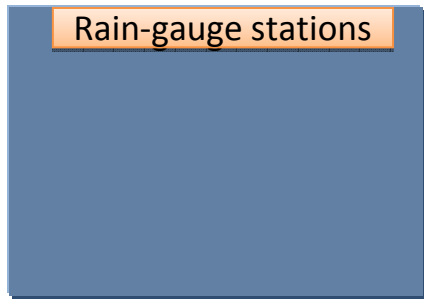
### 2. Objectives

- Determination of **design flood discharge** (10-year return period)
- Development of **flood control measures** (structural & non-structural)

### 3. Features

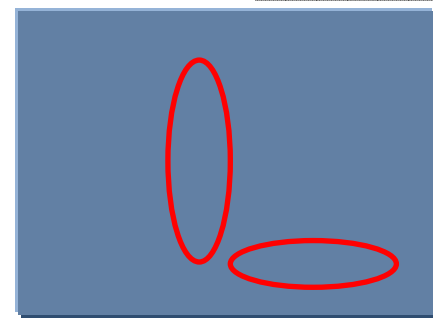


Generation of **spatiotemporal rainfall data** from daily rain-gauge data

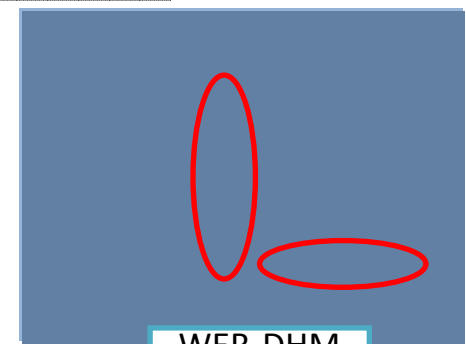


Application of advanced hydrological model (**WEB-DHM**: Wang, Koike et al., 2009)

Simulation results by:



MIKE BASIN



WEB-DHM

Future rainfall estimation with GCM results also to be incorporated...



GIZ-JICA Joint Seminar

## Resilience under climate change: Perspective for Water, Energy and Food Security

Ways to improve resilience against floods and draughts in Africa

- Keynote Presentations by Prof. Toshio Koike and representative of GIZ
- Panel Discussion moderated by Mr. Kenzo Hiroki
- Panelists include:
  - Minister of Water, Hydraulics and Sanitation, Burkina Faso
  - Minister of Infrastructure, Rwanda
  - Minister of Water Resources and Irrigation, Egypt

**Date: 2<sup>nd</sup> June 2013**

**Time: 9:30 ~ 12:00**

**Venue: JICA Yokohama, Kamome**



*Thank you very much  
for your kind attention.*