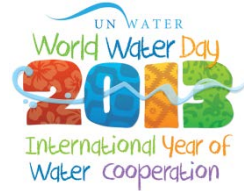




United Nations
Educational, Scientific and
Cultural Organization



Integrated Water Resources Management

NARBO 8th IWRM Training

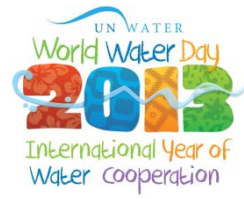
29 November 2013

Kazuaki Yoshida

Programme Specialist,
Section for Sustainable Water Resources
Development and management,
Division of Water Sciences, Natural Sciences,
UNESCO



United Nations
Educational, Scientific and
Cultural Organization



Integrated Water Resource Management

Definition by the Global Water Partnership as
(GWP 2000)

'A process which promotes the coordinated development and the management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems'



Overview of IWRM history in the International Community

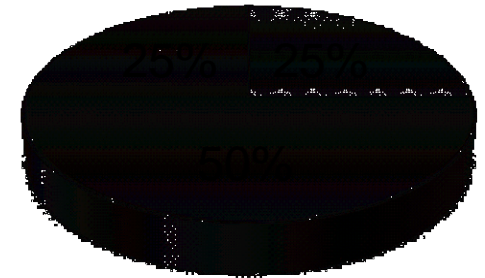
| | |
|-------|---|
| 1930s | Initially integrated approach took place ex) Tennessee Valley Authority in USA |
| 1940s | Evolve many forms of integration methods by UN and other int'l Org |
| 1970s | A rise in the global awareness of water |
| 1977 | UN conference on Water* at Mar del Plata in Argentina *First international gathering to have major impact on water |
| 1992 | International Conference on Water and the Environment at Dublin, Ireland Dublin Principles: Gov. must also assess their capacity... to implement activities for IWRM Agenda 21 in the UN Conference on Environment and Development in Rio, Brazil |
| 2002 | Johannesburg Plan of Implementation (World summit on Sustainable Development) "Countries to develop IWRM and Water Efficiency Plans by 2005, with support to developing countries" |
| 2004 | NARBO was established and 1st IWRM training was implemented |
| 2005 | CSD (UN Commission on Sustainable Development) 13: Decision to accelerate preparation of national IWRM Plans |
| 2006 | UNSGAB (UN Secretary-General's Advisory Board on Water & Sanitation) Hashimoto Action Plan "IWRM is a flexible tool for addressing water challenges and optimizing water's contribution to SD" |
| 2008 | CSD 16: UN-Water Report Road Mapping for Advanced IWRM by UN-Water/ GWP |
| 2009 | <u>Launching of the IWRM guidelines</u> by UNESCO IHP (International Hydrological Programme) |

Planning and Implementation of IWRM

Based on the concept of Dublin principles, the target to *'develop integrated water resources management (IWRM) and water efficiency plans by 2005, through actions at all levels'* was agreed through the Johannesburg Plan of Implementation (JPOI) in 2002 with support to developing countries.

**Progress in 2008
toward 'IWRM Target'
(IWRM planning)***

Implementation of IWRM Plans



- Good progress
- Some progress
- Limited or No

IWRM implementation in Basin, Sub-basins and Aquifers

State of the art review IHP-VI(2007-08)

1. **Guidelines for development of institutions for IWRM implementation at BSA level** should be developed.

Institutional arrangement to facilitate IWRM approach at BSA level are missing.


Follow up of the review

2. **Tools for IWRM** should be documented with respect to the existing and emerging capacity for BSA, in particular for carrying out multi-disciplinary process in IWRM

3. Broader recognition that the 'Integrated' approach is feasible and beneficial should be strengthened.

Preparing **guidelines for operational implementation of IWRM**, and a series of examples to illustrate the **implementation of IWRM at basin level** are recommended.

4. **Case histories** should be adequately documented, collected and disseminated.



**IWRM Guidelines
at
River Basin Level
Initiative**

Improve IWRM at all levels and Support through CB* and tech-transfer

*Capacity Building

Rio +20 United Nations Conference on Sustainable Development 20-22 June 2012

The future we want

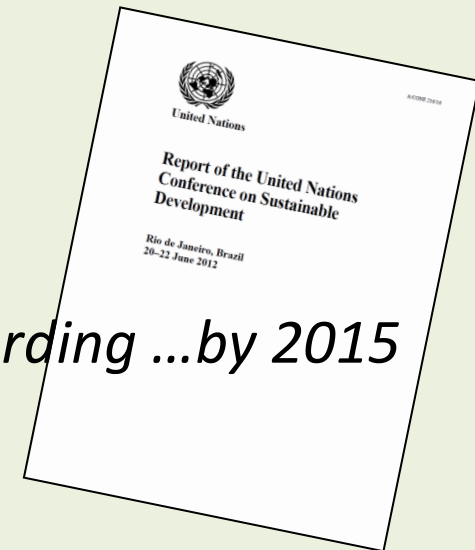
V. Framework for action and follow-up

A. Thematic areas and cross-sectoral issues

Water and Sanitation

120. We reaffirm the commitments made in JPI...regarding ...by 2015 ...the **development of integrated water resource management** and water efficiency plans, ensuring sustainable water use.

We commit to.... and **to significantly improve the implementation of integrated water resource management at all levels** as appropriate. In this regard, we reiterate the commitments to **support these efforts**, in particular for developing countries, **through the mobilization of resources from all sources, capacity-building and technology transfer.**



IWRM Guidelines at River Basin Level Initiative



Framework of IHP

(International Hydrological Programme)

FRIEND



G-WADI



G-WADI

HELP



HELP

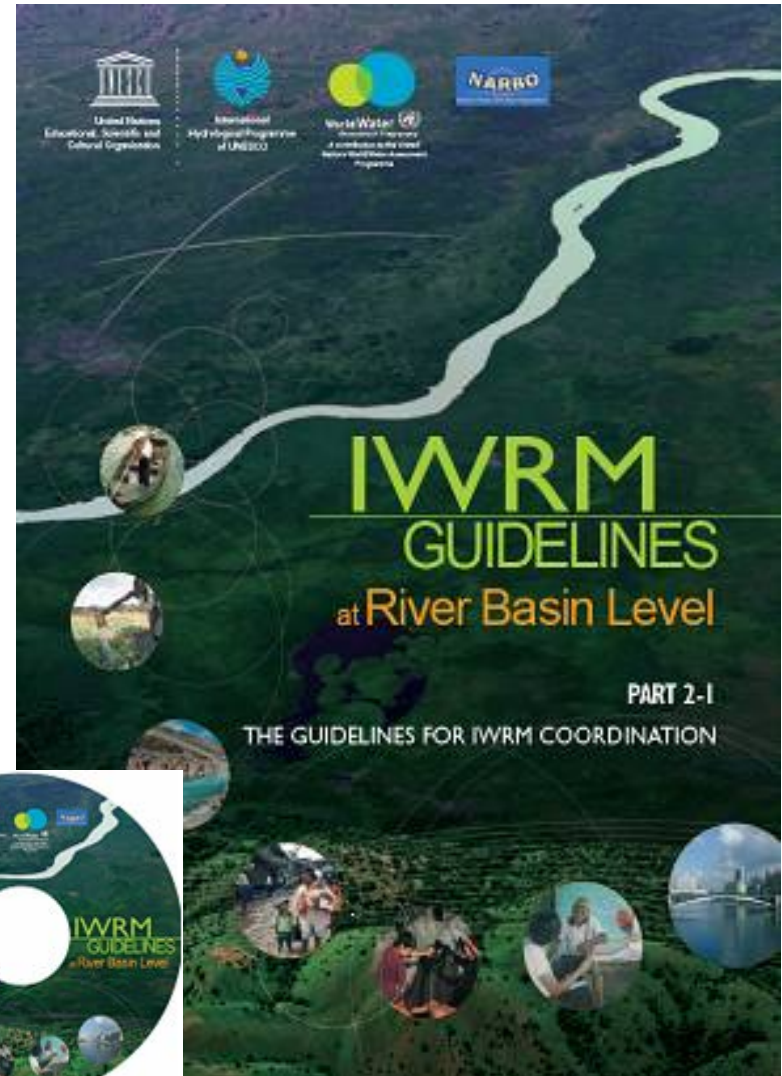
Hydrology for the Environment, Life and Policy

IFI

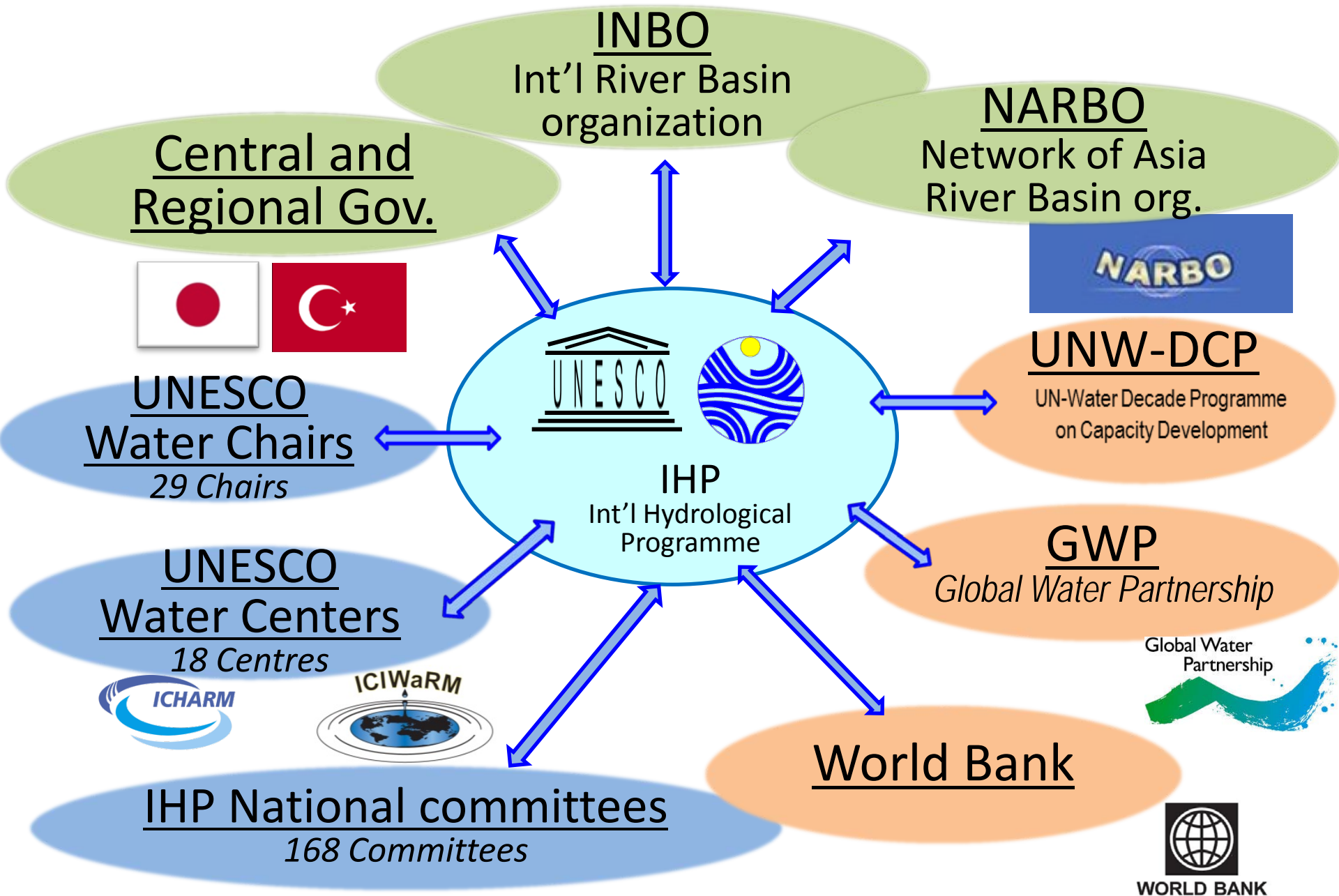


IWRM (IWRM guidelines at River Basin Level Initiative)

⋮

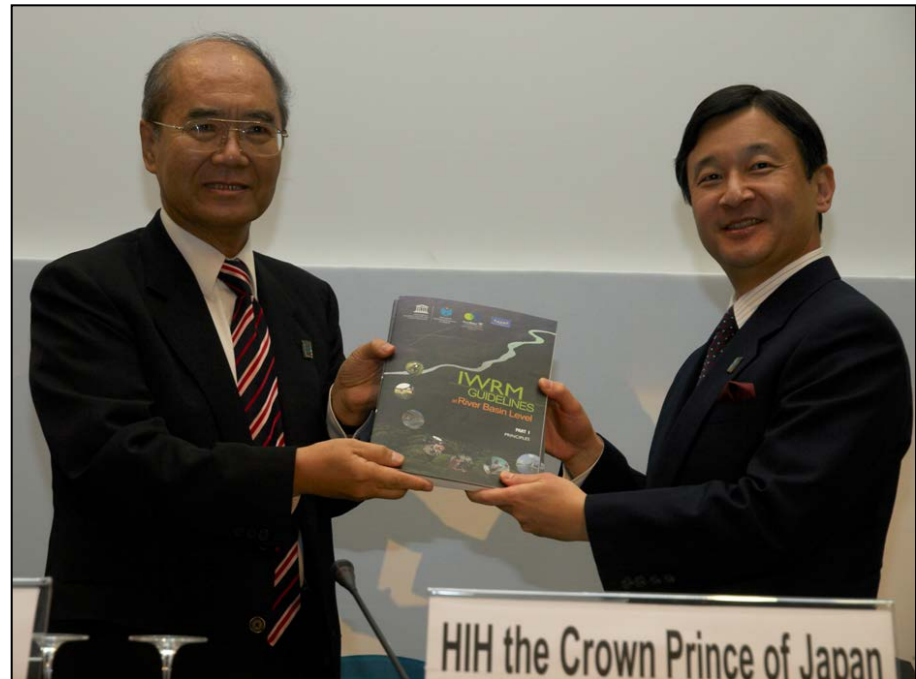
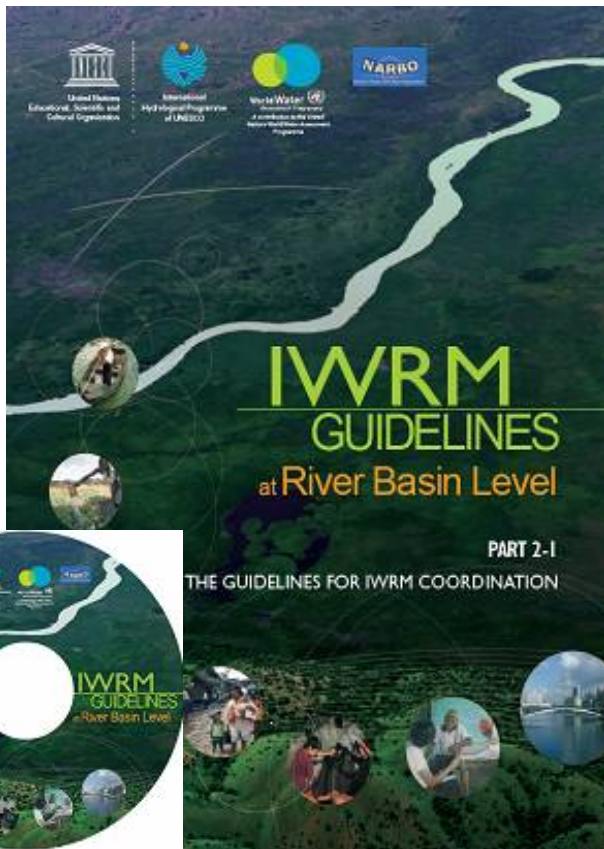


IWRM Initiative Partner organization



Launching of IWRM Guidelines at River Basin Level (2009)

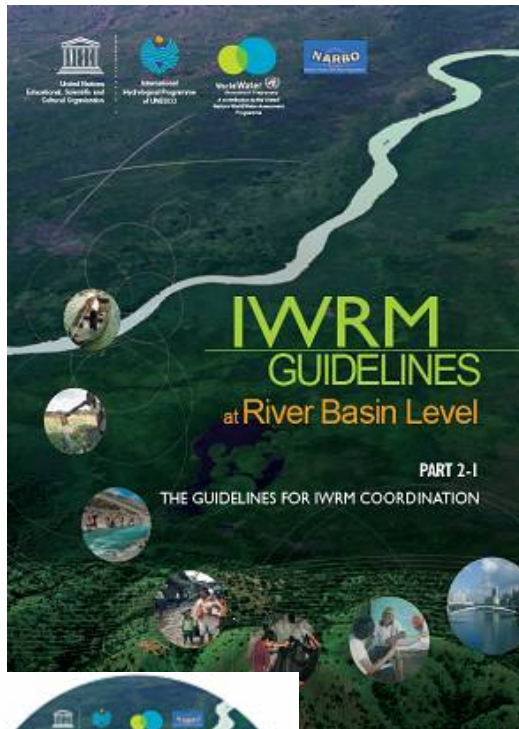
5th World Water Forum on March 16th, 2009 in Istanbul



The Guidelines were handed over to HIH the Crown Prince of Japan from Mr. Matsuura, Director General of UNESCO

Structure of IWRM Guidelines

Modality of the Guidelines



Inclusive Partnership

Practitioners, Int. Org, Governments, Donors etc.

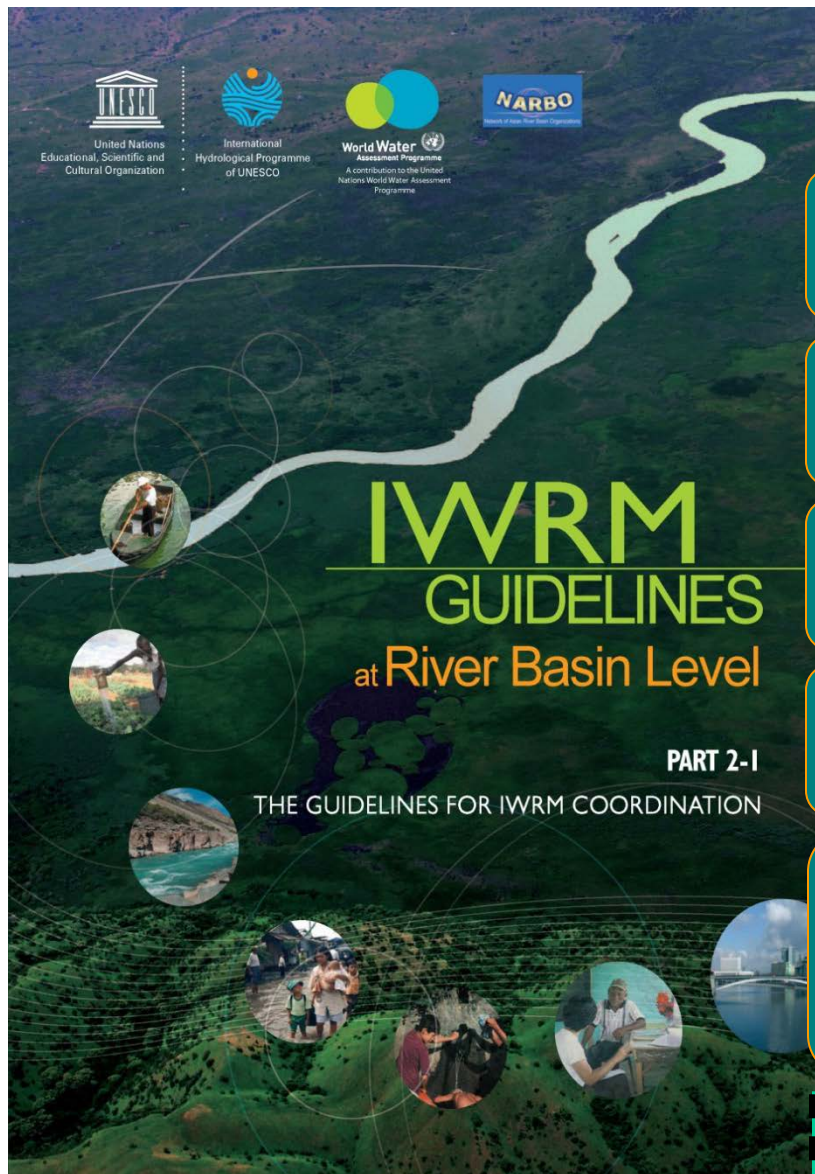
Knowledge integration

Collected and disseminated comprehensive sources

Interaction with users

Early interaction with guidelines users for practical value

Components of the Guidelines



Part 1 Principles

Part 2-1 The Guidelines
for IWRM Coordination

Part 2-2 The Guidelines
for Flood Management

Part 2-3 Invitation to IWRM
for Irrigation Practitioners

Part 2-4 The guidelines
for Managing
Environmental Sustainability

New Volume
on Adaptation to Climate Change

History of IHP

(International Hydrological Programme)

Experimental Basins,
Categorization of Large Floods,
World Water Balance

Hydrology and Water Resources Sustainable
Development in a Changing Environment

International Cooperation
in Hydrological Sciences

Hydrology and Water Resources
Development in Vulnerable Environment

Water Interactions:
Systems at Risk and Social Challenges

Water Dependencies:
Systems under Stress and Societal Responses

1965
International
Hydrological
Decade (IHD)

1975
IHP-I

1981
IHP-II

1984
IHP-III

1990
IHP-IV

1996
IHP-V

2002
IHP-VI

2008
IHP-VII

2014
IHPVIII
2021

**Water
Security:**
Responses to Local,
Regional, and Global
Challenges

Water Resource Management

Societal Aspects

Holistic/System-wide

History of IHP (International Hydrological Programme)



 UNESCO HQ

 UNESCO-IHE Institute

 WWAP

 UNESCO's Regional and Cluster Offices

 Water-related Institutes and Centres

 Water-related Chairs



WATER SECURITY

is defined as the **capacity of a population to safeguard access to adequate quantities of water of acceptable quality for sustaining human and ecosystem health on a watershed basis, and to ensure efficient protection of life and property against water related hazards -- floods, landslides, land subsidence,) and droughts.**

IHP- VIII 2014-2021

Axis 1

Mobilizing International cooperation to Improve knowledge and innovation to address water security challenges

Axis 3

Developing institutional and human capacities for water security and sustainability



Axis 2

Strengthening the Science-Policy interface to reach water security at local, national, regional, and global levels

Water Security: Responses to local, regional, and global challenges

Water-related Disasters and Hydrological Change

1. Risk Management as adaptation to global changes
2. Understanding coupled human and natural processes
3. Benefiting from global and local Earth observation systems
4. Addressing uncertainty and improving its communication
5. Improve scientific basis for hydrology and water sciences for preparation and response to extreme events

Groundwater in a Changing Environment

1. Enhancing sustainable groundwater resources management
2. Addressing strategies for management of aquifers recharge
3. Adapting to the impacts of climate change on aquifer systems
4. Promoting groundwater quality protection
5. Promoting management of transboundary aquifers

Addressing Water Scarcity and Quality

1. Improving governance, planning, management, allocation, and efficient use of water resources
2. Dealing with present water scarcity and developing foresight to prevent undesirable trends
3. Promoting tools for stakeholders involvement and awareness and conflict resolution
4. Addressing water quality and pollution issues within an IWRM Framework – Improving legal, policy, institutional, and human capacity
5. Promoting innovative tools for safety of water supplies and controlling pollution

Water and Human Settlements of the Future

1. Game changing approaches and technologies
2. System wide changes for integrated management approaches
3. In situation and leadership for beneficitation and integration
4. Opportunities in emerging cities in developing countries
5. Integrated development in rural human settlement

Ecohydrology, Engineering Harmony for a Sustainable World

1. Hydrological dimension of a catchment – identification of potential threats and opportunities for a sustainable development
2. Shaping of the catchment ecological structure for ecosystem potential enhancement – biological productivity and biodiversity
3. Ecohydrology system solution and ecological engineering for the enhancement of water and ecosystem resilience and ecosystem services
4. Urban ecohydrology – stormwater purification and retention in the city landscape, potential for improvement of health and quality of life
5. Ecohydrological regulation for sustaining and restoring continental to coastal connectivity and ecosystem functioning

Water Education, Key for Water Security

1. Enhancing tertiary water education and professional capabilities in the water sector
2. Addressing vocational education and training of water technicians
3. Water education for children and youth
4. Promoting awareness of water issues through informal water education
5. Education for transboundary water cooperation and governance

Integrated Water
Resource Management

Transboundary or
Shared Waters

Human Dimension

Governance

Global Change

IWRM Activities by UNESCO

2012.1 Training Workshop in Nairobi Kenya

“Workshop on Earth Observations and Capacity Development for Integrated Water Resources Management (IWRM) at River Basins in Africa” from 12 to 16 January 2012



Participants : 70
Country : 24
River Basin : 8

2012.5 Training in Kaduna Nigeria

Trained in Africa for the development of modular courses for applying IWRM training programme in university education system.

Participants : 100
Country : 8

IWRM Activities by UNESCO

2012.5 Training Workshop in Namibia

“IWRM training workshop with a focus on flood management and planning” was held for the post flood assistance from 7 to 10 May in close collaboration with the government of Namibia. The workshop aimed at providing targeted training in flood modelling, flood plain mapping and developing a road map for integrated disaster management.

Participants : 50

2012.10 IWRM Training workshop in Sri Lanka

IWRM training course organized by NARBO was held from 2 to 9 November 2012 at MAS Fabric Park in Sri Lanka.

It expects to study and enhance knowledge about IWRM through other river basins experiences. The total eight day



Participants : 26

Country : 8

Future Activities on IWRM guidelines

2013.5 **Capacity Building for the IWRM Process**
at the 2nd Asia-Pacific Water Summit in Chiang Mai, Thailand

NARBO and UNESCO co-coordinated the Thematic workshop at APWS in Chiang Mai, Thailand 17 May 2013 on the Capacity building for IWRM process. Based on the discussions, NARBO intended to contribute to enhancing capacity building for all levels by offering it experiences in Asia-Pacific Region with other network including UNESCO.

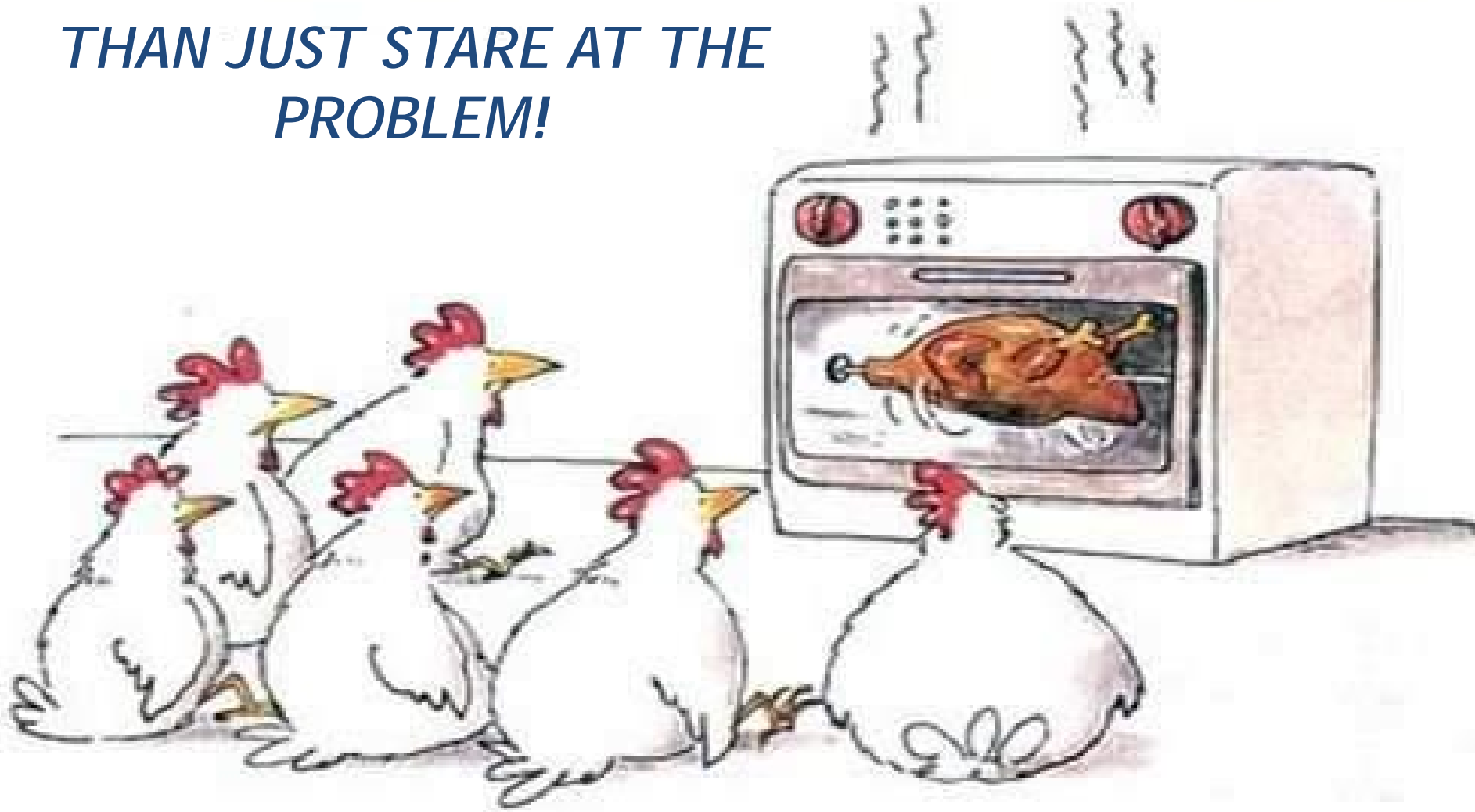
Participants : 200



Future Activities within the frame work of IHP-VIII

- 2013.12* *Workshop on IWRM Guidelines for IFM*
in Faisalabad, Pakistan
- 2014* *Development of educational Material on IWRM guidelines*
in cooperation with NARBO
- 2014 ~* *IWRM project in Asia region lead by UNESCO Jakarta office*
- 2014 ~* *New Volume of IWRM guidelines on Climate Change*

*WE NEED TO DO MORE
THAN JUST STARE AT THE
PROBLEM!*



Thank you for your attention

Further information : k.yoshida@unesco.org