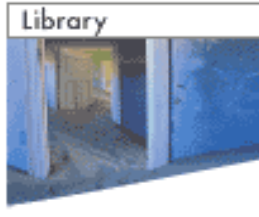


a water secure world

# GWP IWRM ToolBox: Overview

*Danka J. Thalmeinerova*



# About the ToolBox

## Main features of the ToolBox

Users of the ToolBox will find information organised into three main parts: operational tools; case studies, which support the use of tools; and references, organisations and websites. The structure for the Tools in the ToolBox is based on three fundamental elements of IWRM:

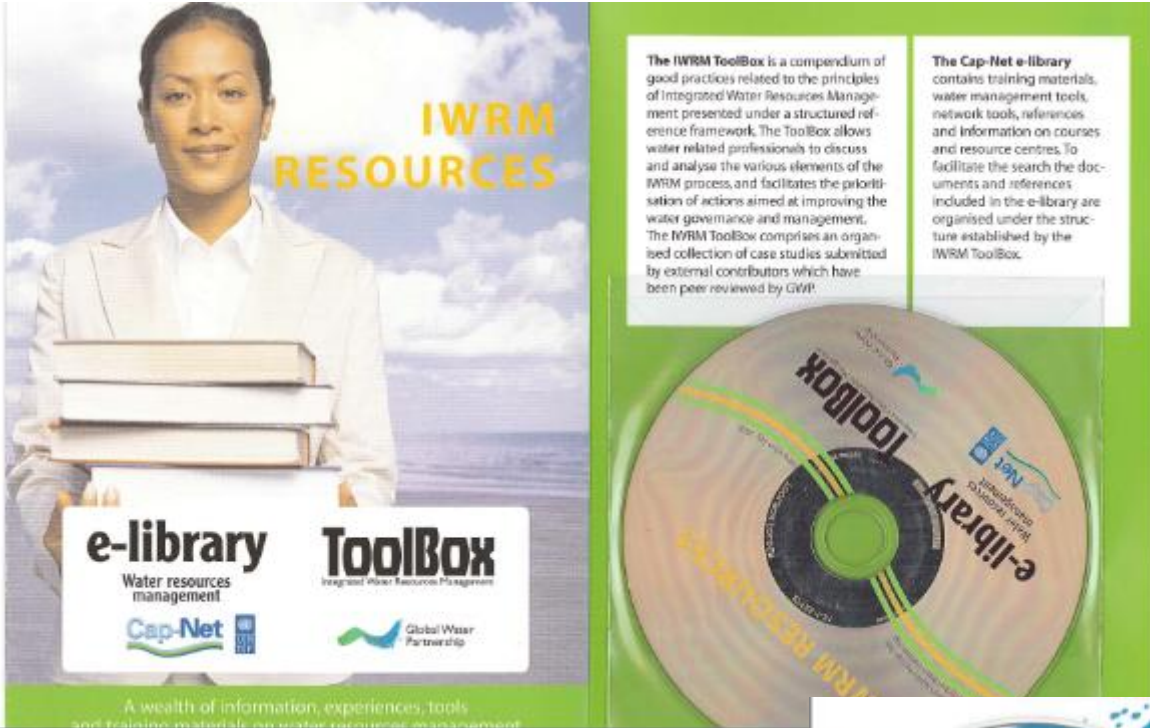
- A. **The enabling environment** or rules of the game created by legislation, policy and financing structures.
- B. **Institutional roles** of resource managers, service providers, water management agencies, utilities, river basin authorities, regulators and other water sector stakeholders. Capacity building supports the functions required for these roles.
- C. **Management instruments** - water resources assessment, demand management, public information and education, conflict resolution, regulatory devices, economic measures and information and communications.

Within these elements, the ToolBox offers a compendium of over 50 policies and actions or 54 tools for putting IWRM into practice. Each tool is illustrated by real case experiences, which give examples of how a tool has worked in a given combination and context.

IWRM ToolBox  
launched in  
2000 (WWF  
Hague)

On-line portal  
for IWRM

Regional Action:
Caribbean
Central Africa
Central America
Central and Eastern Europe
Central Asia and Caucasus
China
Eastern Africa
Mediterranean
Pacific
South America
South Asia
Southeast Asia
Southern Africa
West Africa



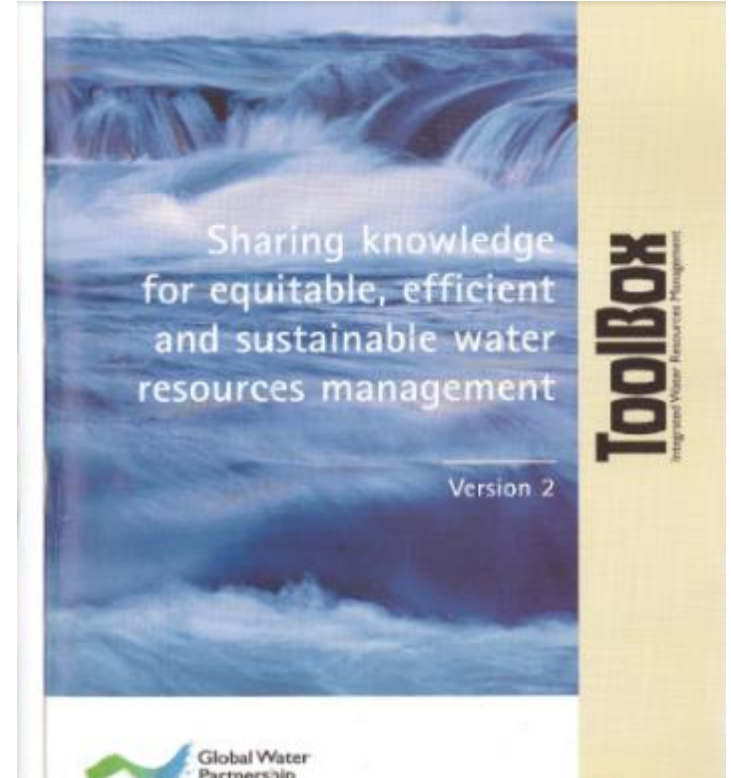
**IWRM RESOURCES**

**e-library Toolbox**  
Water resources management  
Cap-Net  
Global Water Partnership

**The IWRM Toolbox** is a compendium of good practices related to the principles of Integrated Water Resources Management presented under a structured reference framework. The Toolbox allows water related professionals to discuss and analyse the various elements of the IWRM process, and facilitates the prioritisation of actions aimed at improving the water governance and management. The IWRM Toolbox comprises an organised collection of case studies submitted by external contributors which have been peer reviewed by GWP.

**The Cap-Net e-library** contains training materials, water management tools, network tools, references and information on courses and resource centres. To facilitate the search the documents and references included in the e-library are organised under the structure established by the IWRM Toolbox.

A wealth of information, experiences, tools and training materials on water resources management



Sharing knowledge for equitable, efficient and sustainable water resources management

Version 2

**TOOLBOX**  
Integrated Water Resources Management

Global Water Partnership



**TOOLBOX**

How to Make the World's Water Resources Policy and Practice Water Secure

Global Water Partnership  
**TOOLBOX**  
Integrated Water Resources Management  
2010

GWP Technical Papers and Toolbox in several languages.

## Why the GWP IWRM ToolBox was created?

We wanted to share existing knowledge on IWRM

We wanted to describe a very complex concept of IWRM to practitioners

We wanted to capture real life stories

We wanted to create a platform for exchange of experience, discussion forum, debates on implementation

## How the GWP IWRM ToolBox was created?

No manual but a dynamic, growing resource

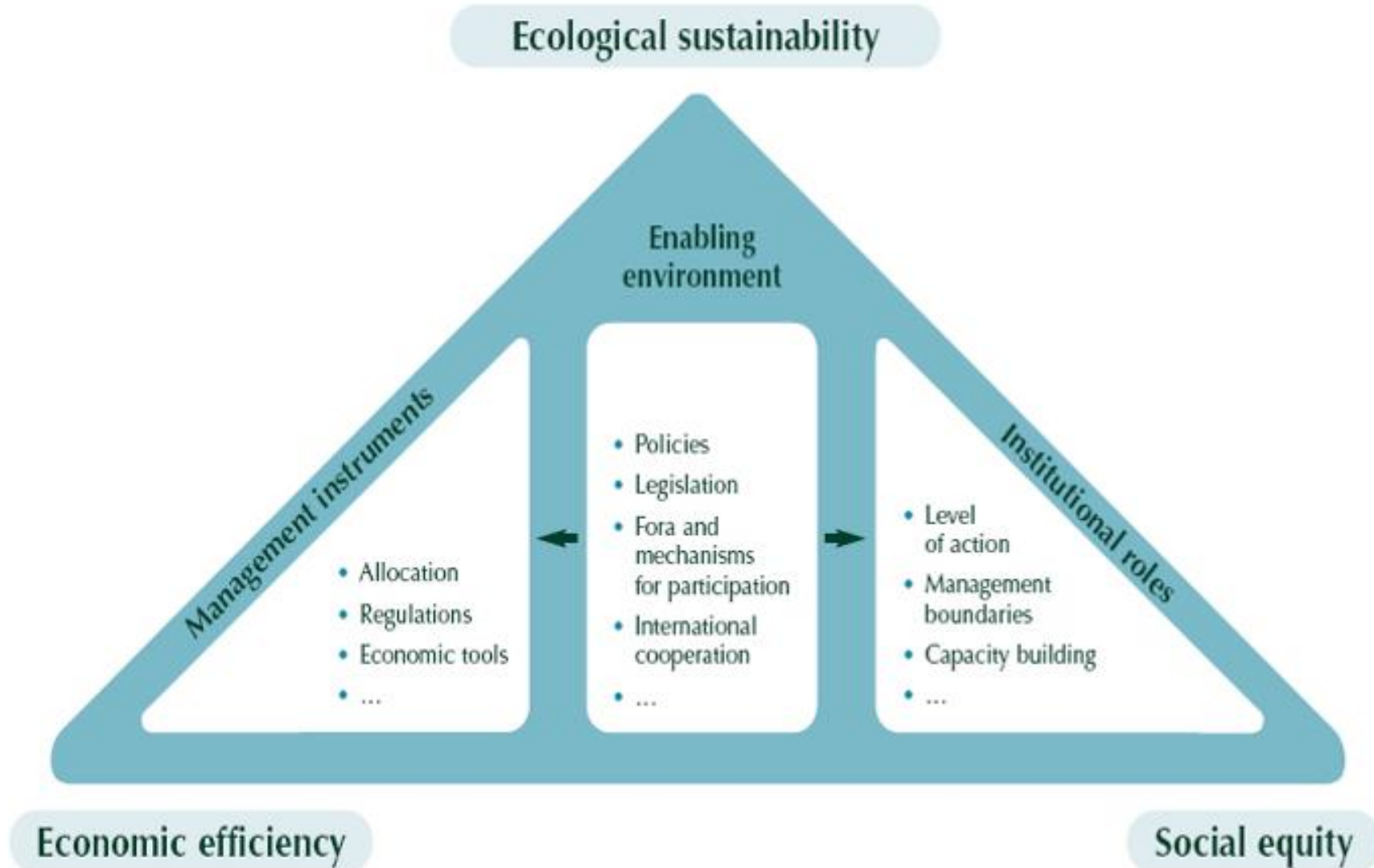
It describes the pillars and components of IWRM

It shows best practices and case studies on **application** of IWRM

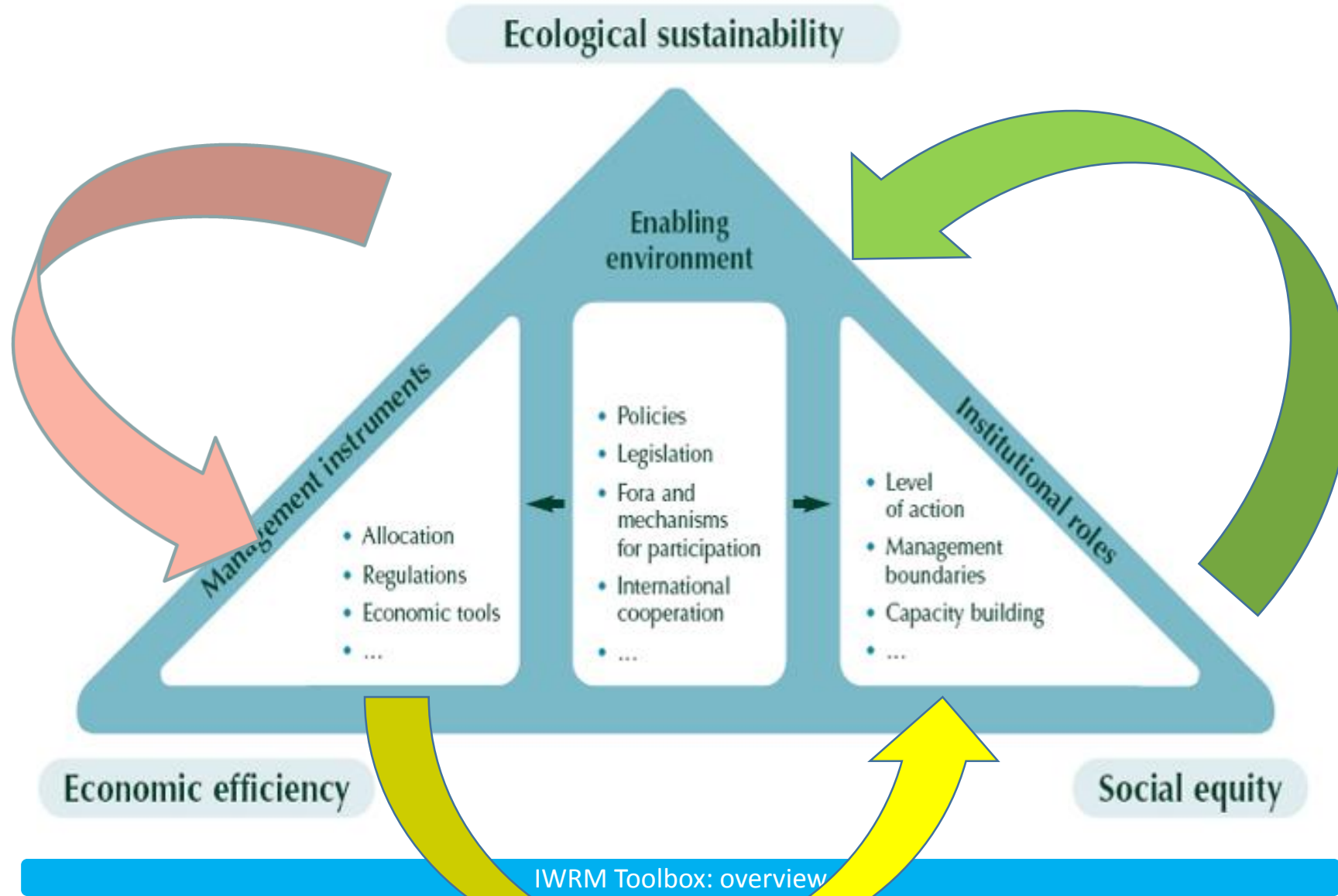
It gathers relevant publications, support documents, organizations and web links **on IWRM**

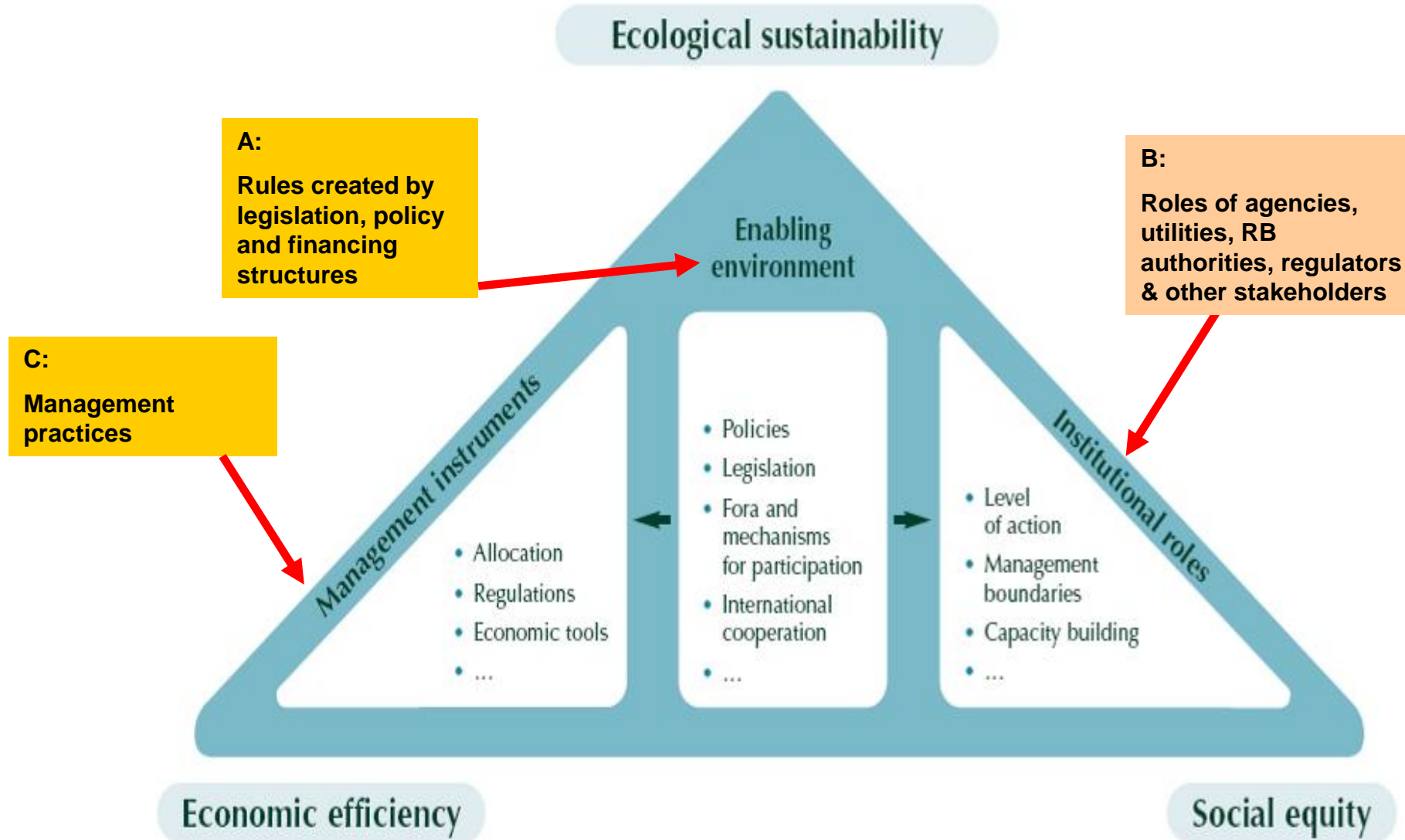
A structured vehicle for exchange of experience and knowledge within IWRM

## Three pillars IWRM: of Areas of Change

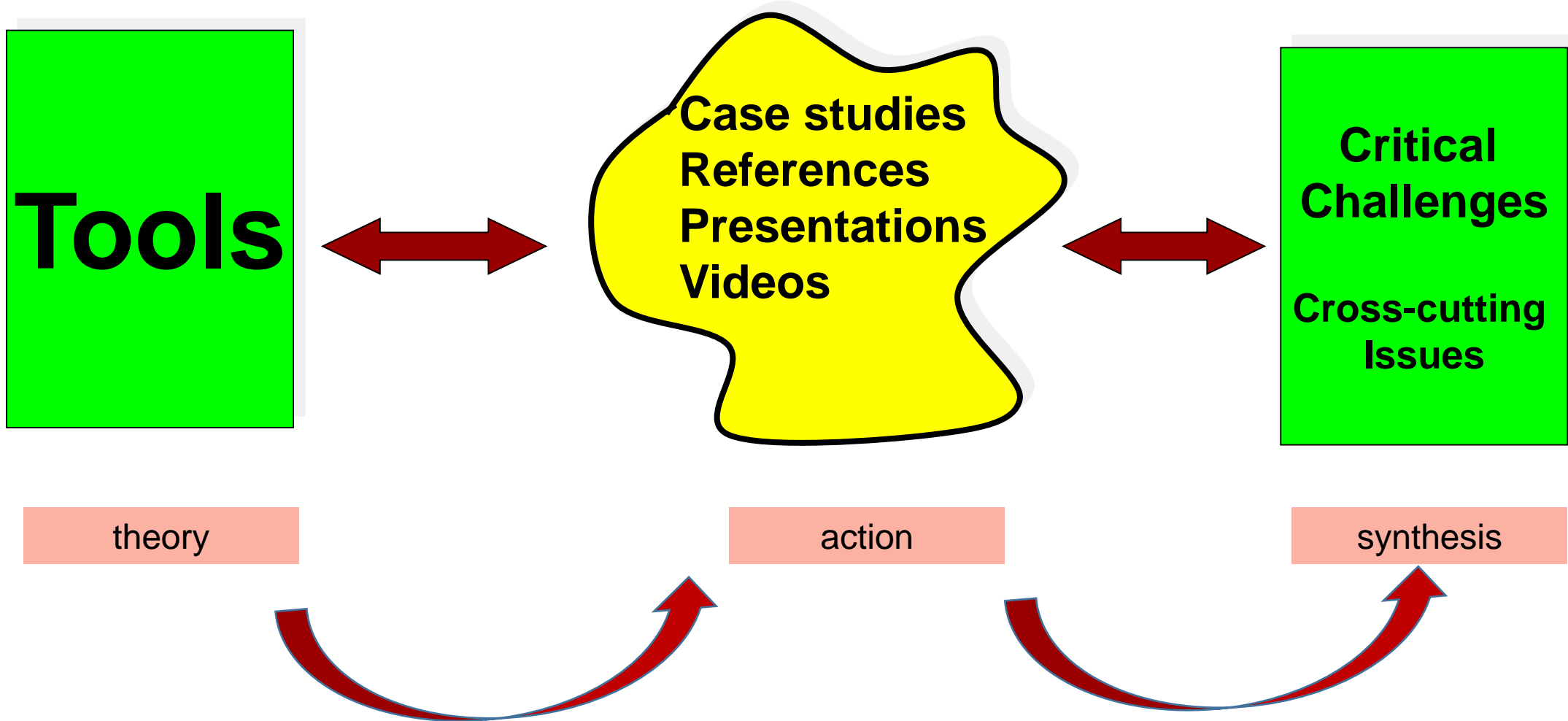


# Three pillars IWRM: of Areas of Change





# Dynamics in ToolBox





# GWP ToolBox on-line IWRM library



Search

HOME

IWRM

WHAT IS TOOLBOX?

ABOUT GWP

## TOOLBOX

A THE ENABLING ENVIRONMENT ▶

B INSTITUTIONAL ROLES ▶

C MANAGEMENT INSTRUMENTS ▶

## CASE STUDIES BY REGION

- Africa
- America

## Home

### WELCOME TO THE GWP TOOL BOX FOR IWRM

The IWRM Tool Management to discuss, and improving the water governance and management. The IWRM Tool studies submitted by external contributors which have been peer review to facilitate that professionals and specialists engage with a broader c problems.

### TOOLS: INDIVIDUAL POLICIES AND GUIDELINES ON IWRM

Altogether 54 different tools are presented in the GWP ToolBox. 1

**59 tools**

### CROSS-SECTORAL INTEGRATION

Enabling environment  
 Institutional roles  
 Management instruments

WATER FOR PEOPLE    WATER FOR FOOD    WATER FOR NATURE    WATER FOR INDUSTRY AND OTHER USES

What is IWRM? *IWRM Principles, Plans and Strategies*    Share: [f](#) [t](#) [in](#)

#### Latest Case Studies

- [Brazil: Integrated environmental assessment of agricultural production systems in the Toledo River Basin \(#441\)](#)
- [Pakistan: A Successful Model of the Urban Water Partnership in Karachi \(#440\)](#)
- [Uruguay: Capacity building for climate disaster risk management at local level in Pantanos watershed in Montevideo \(#439\)](#)
- [Armenia: Local solutions for waste water management in Armenia village \(#438\)](#)
- [Argentina: Drinking water supply system for rural population of Eastern Tucuman \(#437\)](#)



#### How to contribute

You can submit case studies and references to this site.

[Contribute to the IWRM ToolBox](#)



As part of our mission to improve water resources management, we

**Version 3.0 launched in August 2013**

Know IWRM...  
 Tto rela sha GWI prof basis to explore the appropriate tools for...  
 =107661

urban groundwater use, together with some harmful and persistent problems that groundwater can

Stockholm, GWP presents three new policy briefs on critical water management issues. The topics are

+ ABOUT

+ What is ToolBox?

+ What is IWRM?

+ IWRM Plans and Strategies

How can I contribute?

Building Knowledge  
Capacity

## What is IWRM?

Water is a critical, but often overlooked element in sustainable development. If effective, long lasting solutions to water problems are to be found, a new water governance and management paradigm are required.

Such a new paradigm is encapsulated in the Integrated Water Resources Management (IWRM) concept, which has been defined by GWP as "a process which promotes the coordinated development and management of water, land and related resources in order to maximise the resultant

**What is good in this web site?**

IWRM explicitly challenges conventional, fragmented water development and management systems and places emphasis on integrated approach with more coordinated decision making across sectors and scales. Recognising that exclusively top-down, supply led, technically based and sectoral approaches to water management are imposing unsustainably high economic, social and

### IWRM Principles

Water is finite and vulnerable resource  
Participatory approach  
Role of women  
Social and economic value of water  
Integrating three E's

### Related Resources

Introduction to IWRM.ppt (1,78 MB)  
IWRM Planning Cycle (diagram, jpeg)  
Download graphics about IWRM •  
IWRM at a glance (GWP, 2000, pdf)

### IWRM Related Publications

GWP Publications

+ ABOUT

+ What is ToolBox?

+ What is IWRM?

IWRM Plans and Strategies

Africa

Americas

Asia

Europe

How can I contribute?

Knowledge Centers

Väderleksrapport

# IWRM Plans and Strategies

GWP supports countries in the development of IWRM plans and strategies. Since GWP's founding in 1996, this support has ranged from technical assistance, advocacy, and capacity building initiatives to organizing policy dialogues and practical workshops at all levels.

On this page we have grouped the national IWRM plans and strategies according to regions and countries. This is the most convenient manner, although a thorough analysis would show that they could be grouped in ways that better illustrate the evolution of IWRM approaches taken by individual countries.

For example, there are cases where national IWRM processes resulted in adoption of water policies, national development strategies, IWRM roadmaps or water related legislation rather than IWRM plans.

## Related Links

[Informal Stakeholder baseline Survey \(GWP, 2004, pdf\)](#)

[Status Report on Integrated Water Resources Management and Water Efficiency Plans \(UN Water, 2008, pdf\)](#)

[2012 Status Report on the Application of Integrated Approaches to Water Resources Management in Africa \(AMCOW, 2012, pdf\)](#)

[2012 Status Report on the Application of Integrated Approaches to Water Resources Management in Africa \(AMCOW, 2012, French pdf\)](#)

[Catalyzing Change: Handbook for developing IWRM and water efficiency strategies](#)

+ TOOLS

+ The Enabling Environment

+ Policies

+ Legal Framework

+ Investment and Financing Structures

Investment frameworks

Strategic financial planning

Generating basic revenues for water

Repayable sources of finance for water

+ Institutional Roles

+ Management Instruments

# Strategic financial planning (A3.02)

## Characteristics

Strategic Financial Planning (SFP) for water is an approach which aims to place the financing of water infrastructure and services onto a more predictable and sustainable basis. SFP brings planning and financing – which are typically done separately – onto convergent tracks, so that spending ambitions are more compatible with available financial resources. Conversely, financing strategies can be tailored to what is actually needed, which improves the prospects of getting funding.

SFP would normally have the following elements:

- Scenarios (10-20 years or even longer) of investment and service plans for the sub-sector (e.g. water supply and sanitation, irrigation, wastewater), including estimated costs for capital investment and recurrent operation and maintenance (O&M).
- Projections of feasible sources of finance for both the initial capital investment and the recurrent costs of operating services. These would typically include cost recovery from tariffs and other user charges, subsidies from government budgets (including those originating from external donors), contributions from non-governmental organisations, loans on commercial terms from banks and export credit agencies, private equity, loans on concessional terms from international financing institutions (IFIs) and other sources, etc.
- The financial requirements implied by the above scenarios would be compared with projections of finance likely to be available. In the event of a financing gap appearing, a process of iteration would take place involving revisions to both the spending and financing scenarios. Spending plans would be adjusted to make them more realistic (e.g. less ambitious targets, more cost-effective options, demand management programmes, more attenuated implementation periods), while

### Related Case Studies

Strategic Financial Planning for the Water Supply and Sanitation Sector (#372)

### References in English

Strategic Financial Planning in Water Supply and Sanitation (EUWI, 2007, pdf)

Financing Water Infrastructure and Services (EUWI/GWP Guide, 2007, pdf)

Investing in infrastructure: The value of an IWRM approach (GWP, 2009, pdf)

Strategic Financial Planning for water supply and sanitation in Africa (EUWI/GWP, 2010, pdf)

Managing Water for All: an OECD perspective on pricing and financing (OECD, 2009, pdf)

### References in French

Strategic Financial Planning for water supply and sanitation in Africa (EUWI/GWP, 2010, pdf)

### References in Spanish

Financing Water Infrastructure and Services (EUWI/GWP Guide, 2007, pdf)

**TOOLS**  
complemented by  
case studies

**TOOLS**  
complemented by  
references

Send  
Case studies  
and  
References!!!!



# Enabling Environment (A - tools)

Deal with **water policies** and their development

- A1.1 Preparation of a national water resources policy
- A1.2 Policies with relation to water resources
- A1.3 Climate change adaptation policies

Include tools for use in the development of **water law**

- A2.1 Elements of water law
- A2.2 Implementation and enforcement
- A2.3 Integrating legal frameworks for IWRM

Deal with **financial resources** to meet water needs

- A3.1 Investment frameworks
- A3.2 Strategic financial planning
- A3.3 Generating basic revenues for water
- A3.4 Repayable sources of finance for water

## Institutional Roles (B - tools)

Deals with **forms and functions of institutions**

- B1.1 Reforming institutions for better governance
- B1.2 Transboundary organisations for water resource management
- B1.3 National apex bodies
- B1.4 River basin organisations
- B1.5 Regulatory bodies and enforcement agencies
- B1.6 Service providers and IWRM
- B1.7 Strengthening public sector water utilities
- B1.8 Role of the private sector
- B1.9 Civil society institutions and community based organisation
- B1.10 Local authorities
- B1.11 Building partnerships

Includes tools for **upgrading the skills**

- B2.1 Participatory capacity and empowerment in civil society
- B2.2 Training to build capacity in water professionals
- B2.3 Regulatory capacity

## Management Instruments (C - tools)

### About **understanding resources**

- C1.1 Water resources knowledge base
- C1.2 Water resources assessment
- C1.3 Modelling in IWRM
- C1.4 Developing water management indicators
- C1.5 Ecosystem assessment
- C1.6 Water footprint and virtual water concept

### Combine **development options**, resource use and human interaction

- C2.1 National integrated water resources plans
- C2.2 River basin plans
- C2.3 Groundwater management plans
- C2.4 Coastal zone management plans
- C2.5 Water infrastructure, implementation and IWRM



## Management Instruments (C - tools)

Involves various tools for **balancing supply and demand**

- C3.1 Improved efficiency of use
- C3.2 Recycling and reuse
- C3.3 Improved efficiency of supply

Encourages **social change instruments**

- C4.1 Education curricula on water management
- C4.2 Communication with stakeholders
- C4.3 Information and transparency for raising awareness

Shows how to **manage disputes**

- C5.1 Conflict management
- C5.2 Shared vision planning
- C5.3 Consensus building

# Management Instruments (C - tools)

## Regulatory instruments

- C6.1 Water rights and allocation
- C6.2 Water quality
- C6.3 Water services
- C6.4 Land use planning controls and nature protection
- C6.5 Protecting freshwater ecosystems resources

## Economic instruments

- C7.1 Pricing of water and water services
- C7.2 Pollution and environmental charges
- C7.3 Water markets and tradable permits
- C7.4 Subsidies and incentives
- C7.5 Payment for environmental services

## Management Instruments (C - tools)

### **Information and knowledge** management

- C8.1 Information management systems
- C8.2 Sharing data for IWRM

### **Assessment instruments**

- C9.1 Risk assessment and management
- C9.2 Environmental assessment
- C9.3 Social assessment
- C9.4 Economic assessment
- C9.5 Vulnerability assessment

+ CASE STUDIES

- + Africa
- + Americas & Caribbean
- + Asia & Caucasus
- + Australia and Oceania
- + Europe
- Mediterranean & Middle East

# Morocco: Demand management in urban water supply (#103)

Since the 1930s, the drinking water supply of the Rabat-Casablanca coastal area has depended on water transfers from groundwater, from Maamora, and surface water, from the Bou Regreg Basin.

Assessments carried out during the 1980s, based on patterns of water use at that time, showed that by 2010, transfers would have to be extended to include the surface water of Oued Sebu, if water

tments together with and have been with the State

a of water demand with rk, a policy water primarily on ter saving efficiency of

er gnificant

ng water of nd ; ng water of uznika



**Case study**

Related Links

- [Full case study \(pdf\)](#)
- [GWP Mediterranean](#)

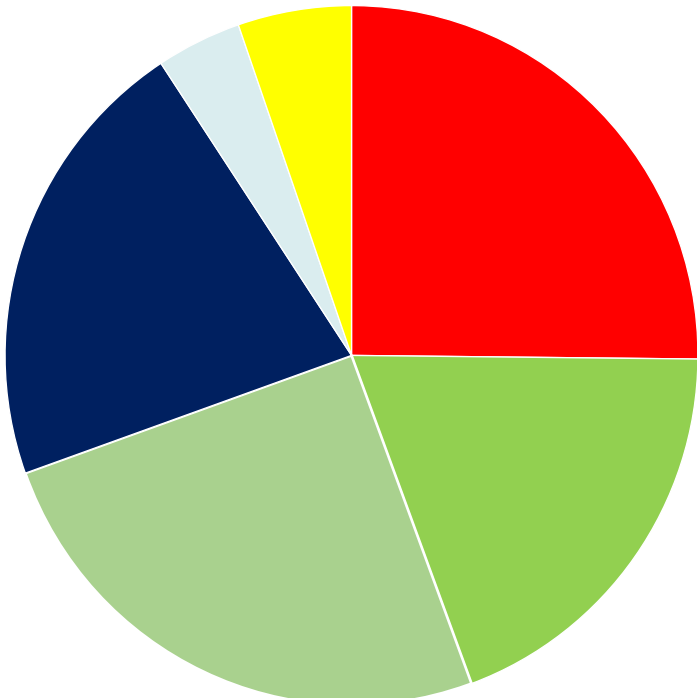
Contacts

Mr. Bzioui Mokhtar, Direction Générale de l'Hydraulique  
[bzioui@mtpnet.gov.ma](mailto:bzioui@mtpnet.gov.ma)  
[badraoui@mtpnet.gov.ma](mailto:badraoui@mtpnet.gov.ma)

Related Tools

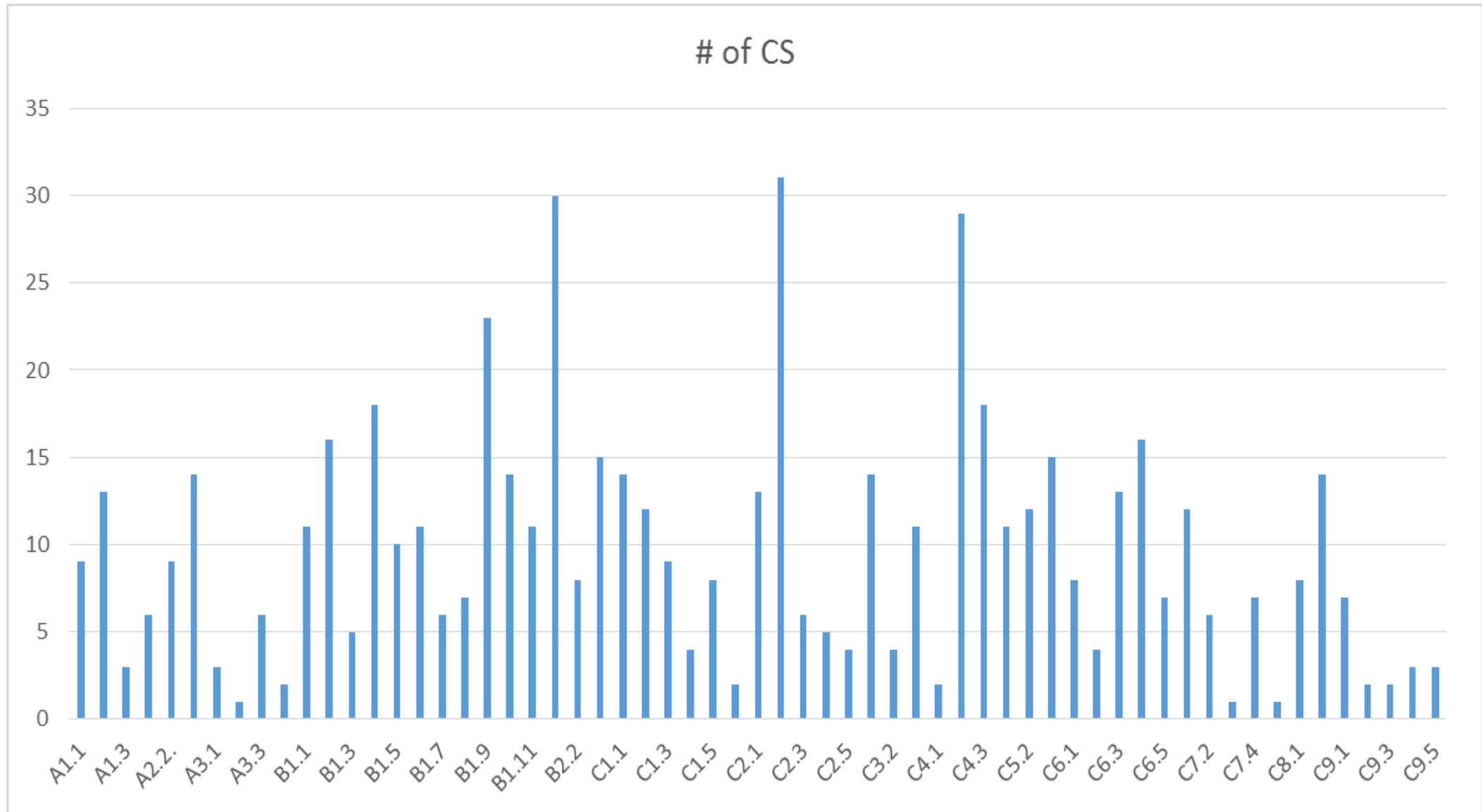
- [Efficiency of use](#)
- [Efficiency of supply](#)

Regional Case studies



■ Africa ■ America&Carr ■ Europe ■ Asia&Caucasus ■ Australia ■ Med & Middle East

# Case studies and tools in IWRM ToolBox



+ CRITICAL CHALLENGES

+ Water and Climate Change

Water and Food Security

Water and Urbanisation

Water and Energy Security

Water and Ecosystems

# Water and Urbanisation



Today water stress is a major concern in many of urbanisation growth together pollution, poverty, resource, all and consequently is likely to ge is expected as well in will affect the ce water related

### Reference Documents

[Sustainable Water Management in the City of the Future \(SWITCH, 2011, pdf\)](#)

[The Future of Water in African Cities. Why Wastewater? \(World Bank, pdf\)](#)

[Towards Integrated Urban Water Management \(GWP, 2011, pdf\)](#)

[Integrated Urban Water Management \(GWP Background paper, 2012, pdf\)](#)

[Guidance, Training and Dissemination Plan \(NE Water, Singapore, 2006, pdf\)](#)

[Marching Together With a City Wide Sanitation Strategy \(WSP, 2010, pdf\)](#)

[SWITCH Training Kit Modules \(2011, pdf\)](#)

### Presentations

[Future of Urban Water Management by Kala Vairavamorthy](#)

[Making Non Revenue Water](#)

## Critical Challenges:

- Water and climate change
- Water and food security
- Water and urbanization
- Water and energy security
- Water and ecosystem

ected to increase in 2011 to 6.3 urban population is 64.4% at respectively. In nitiation coverage age (85%). For area coverage for % and the er in the rural

Current models of urban planning and water management have already failed or likely to fail from the perspective of cost effectiveness, technical

+ CROSS CUTTING ISSUES

Gender and Water

Youth and Water

Financing and Water

Governance and Water

Cooperation in  
Transboundary Water

## Cooperation in Transboundary Water



### Cross-cutting Issues:

- Water and Gender
- Water and Youth
- Financing Water
- Water and Governance
- Cooperation in Transboundary Waters

#### Reference Documents

[Integrated Water Resources Management in Central Asia: The challenge of managing large transboundary rivers - Technical Paper \(GWP, 2014\)](#)

[International Law Facilitating Transboundary Water Cooperation - Background Paper \(GWP, 2013\)](#)

[The Handbook for IWRM in Transboundary Basins of Rivers, Lakes and Aquifers \(GWP, 2012\)](#)

[Inventory of Shared Water Resources in Western Asia \(SCWA & GWP, 2011\)](#)

where riparian countries are prone to divide water resources, instead of sharing them and be endowed with the benefits of strategic allocation. In many cases

+ PUBLICATIONS

- Perspectives Papers
- Background papers
- Policy Briefs
- Technical Focus Papers
- Technical Briefs
- Catalyzing Change Handbook

# GWP Technical Committee publications and resources

The GWP Technical Committee consists of internationally recognised professionals selected for their experience in different disciplines relating to integrated water resources management

The GWP Technical Committee provides professional and scientific advice on water management through various publications and resources. It comprises Background Papers, Policy Briefs, Technical Briefs and the Catalyzing Change Handbook. The material is for free and can be downloaded here or ordered in printed format via [gwp@gwp.org](mailto:gwp@gwp.org).



## Perspectives Papers

GWP publishes Perspectives Papers to contribute to discussions on important issues related to water and development. We welcome responses to these occasional papers.



## Background Papers

Technical Background Papers on water resources management in various languages, written by the [GWP Technical Committee](#).

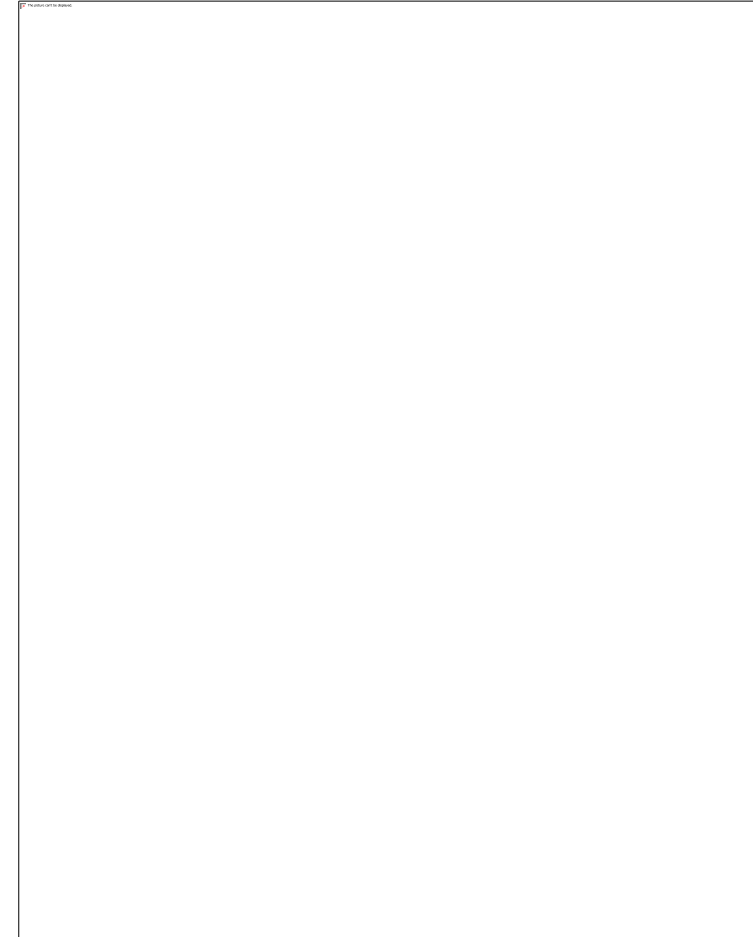


## Policy Briefs

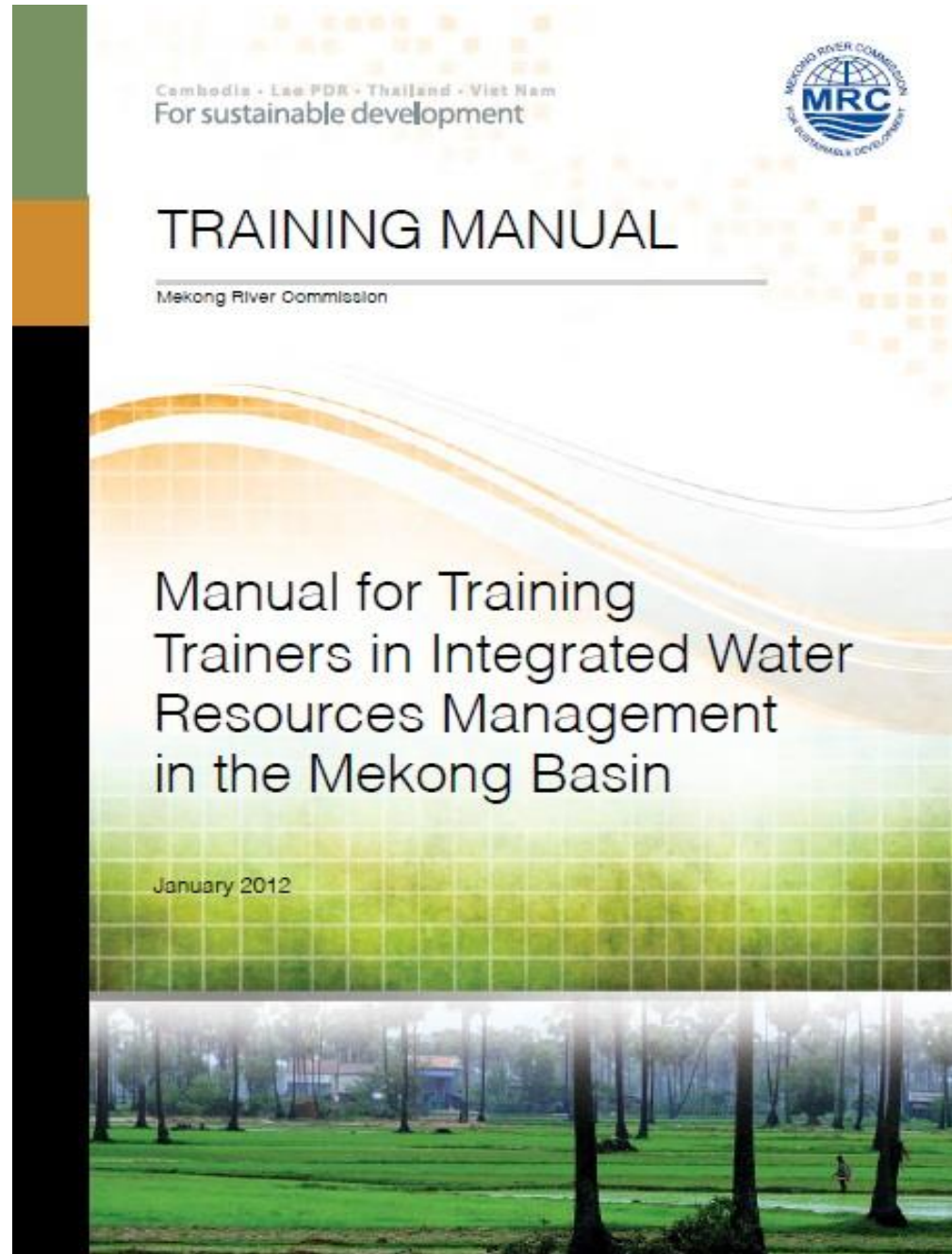


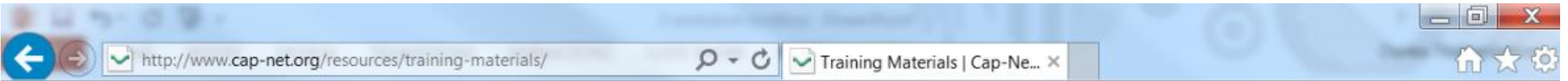
# Application of GWP IWRM ToolBox in national water planning

- **ToolBox used in Eritrea, Malawi, Ethiopia and Zambia (PAWD initiative)**
  - as a reference source to improve water governance
  - as a framework for analysis of the water resources situation



- Training manual for Water practitioners in Mekong River Basin (2012)
  - Using ToolBox structure and materials





File Edit View Favorites Tools Help



Jemne Melodie - Live Onli... The Swedavia Hotspot Wireless Vienna Airport Cycling-Info.sk - slovenský... Logga in på Office 365 GWP TOOLBOX Welcome - Home

About Cap-Net Contact Us Follow us on Facebook The Water Channel Virtual Campus English



CAPACITY DEVELOPMENT IN SUSTAINABLE WATER MANAGEMENT

ABOUT CAP-NET + NETWORKS & PARTNERSHIPS + EXPERTISE SEARCH **RESOURCES +** NEWS & EVENTS NEWSLETTER CAP-NET ESPANOL

## Training Materials

These materials have been developed with support from Cap-Net and are freely available for use and adaptation however please acknowledge the source. We are pleased to receive mail on how you have used the materials.

If you have translated any of these materials into another language we will be pleased to upload them to this site. All of the following training packages are available on CD from Cap-Net. If you have previously used any Cap-Net training materials, please click here to give us feedback or simply [email us](#) with any comments.

### Latest!

1. WFA Water Footprint Assessment Manual (Chinese)

### Resources

Resource Centers

**Training Materials**

Publications

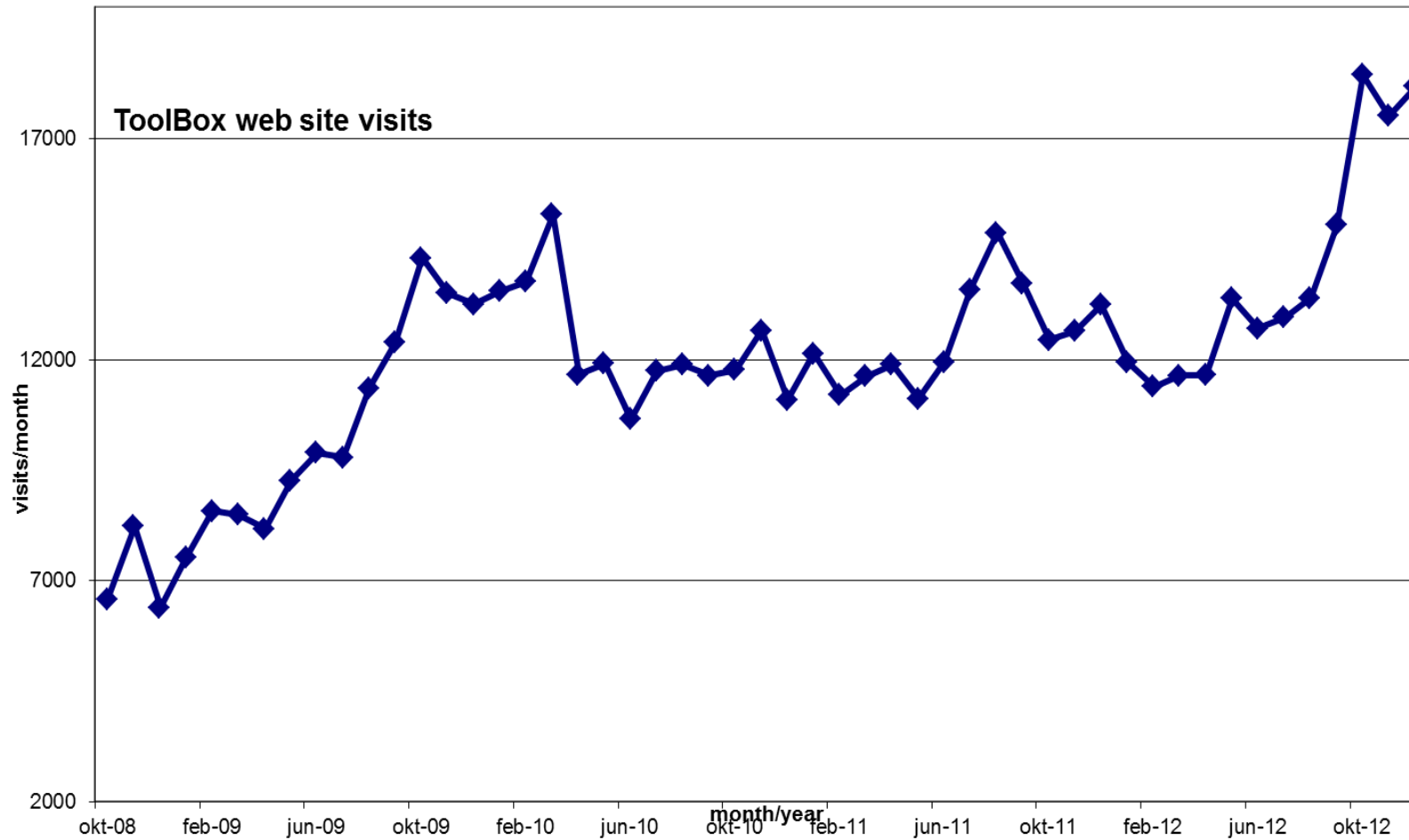
Water Management Tools

INSTITUTIONS

ENABLING ENVIRONMENT

MANAGEMENT INSTRUMENT

# Statistics

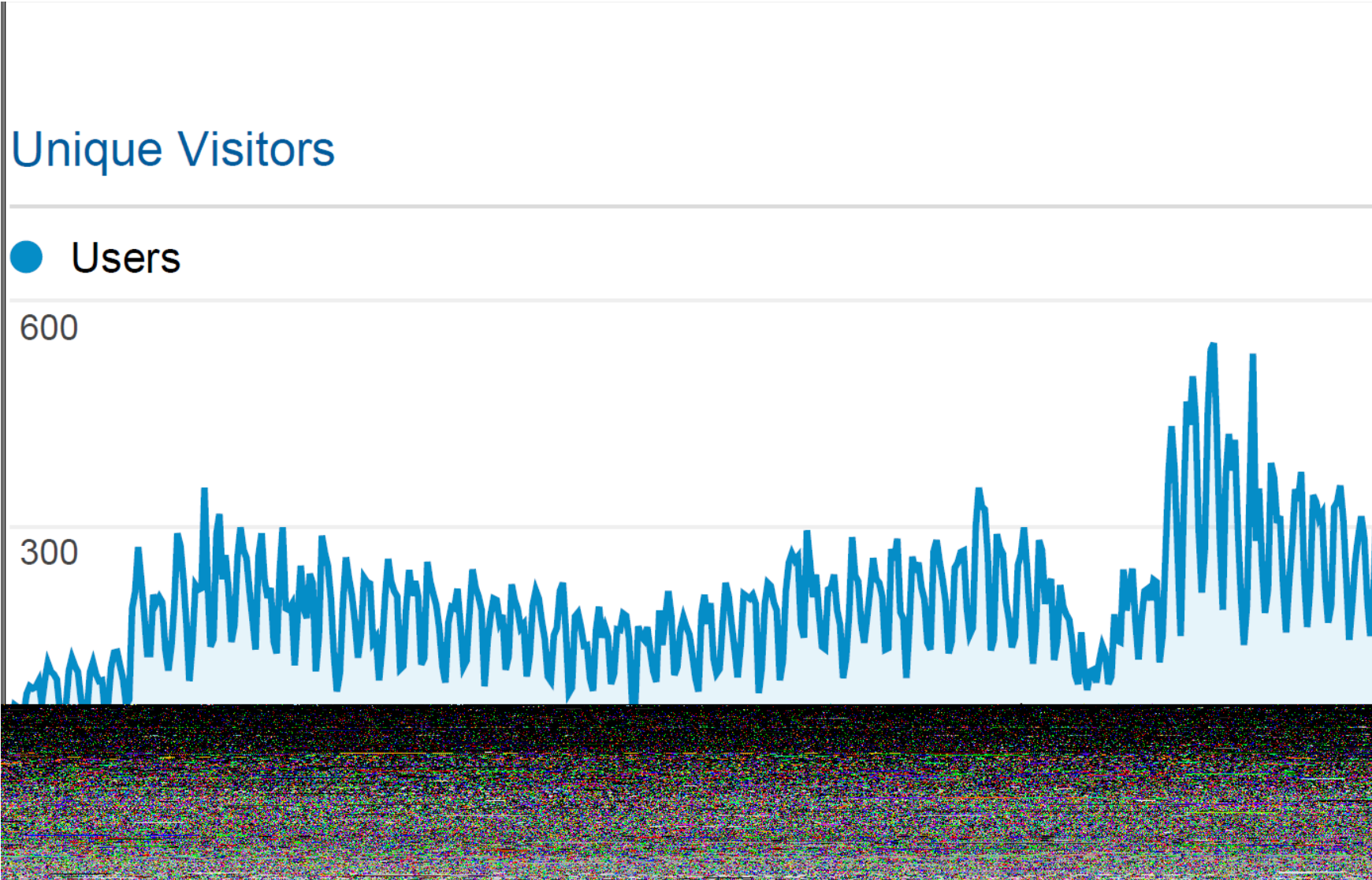


## Unique Visitors

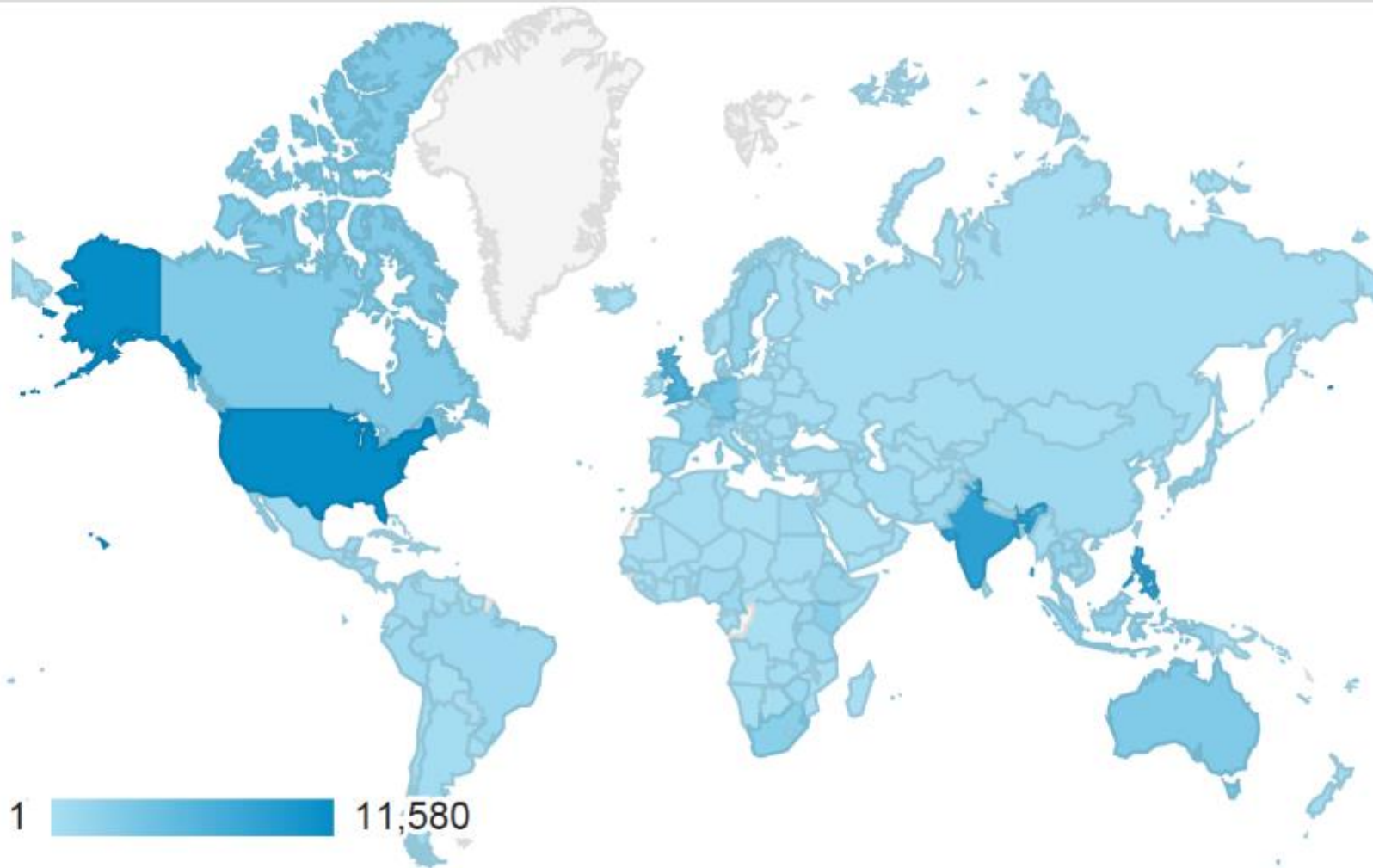
● Users

600

300



# Visits





 English  
 Español  
 French

PRESS ROOM  
CONTACT US

+ GWP Regional Websites

[ABOUT](#) [TOOLS](#) [CASE STUDIES](#) [CRITICAL CHALLENGES](#) [CROSS CUTTING ISSUES](#) [PUBLICATIONS](#)

+ ABOUT

- + What is ToolBox?
- + What is IWRM?
- + IWRM Plans and Strategies
- How can I contribute?
- Building Knowledge Capacity

## Welcome!

The IWRM ToolBox comprises of an organized collection of case studies, reference documents, reader lists, external web sites and other supporting materials in water resources management, which have been submitted by various contributors and are peer reviewed.

The IWRM Toolbox is intended to be an information exchange platform where experiences are shared to help develop the body of knowledge which can enable all those

### ToolBox in different languages

- [Chinese \(pdf\)](#)
- [English \(pdf\)](#)
- [French \(pdf\)](#)
- [Portuguese \(pdf\)](#)
- [Russian \(pdf\)](#)
- [Spanish \(pdf\)](#)

Contact

Contribute

The graphic features a blue background with white text. On the left, it lists 'Enabling environment', 'Institutional roles', and 'Management instruments'. In the center, four vertical bars represent 'WATER FOR PEOPLE', 'WATER FOR FOOD', 'WATER FOR NATURE', and 'WATER FOR INDUSTRY AND OTHER USES'. At the bottom, it says 'What is IWRM? IWRM Principles, Plans and Strategies' with social media icons for Facebook, Twitter, and LinkedIn.

### Latest Case Studies

Brazil: Integrated environmental assessment of agricultural production systems in the Toledo River Basin (#441)

Pakistan: A Successful Model of the Urban Water Partnership in Karachi (#440)

Uruguay: Capacity building for climate disaster risk management at local level in Pantanos watershed in Montevideo (#439)

Armenia: Local solutions for waste water management in Armenia village (#438)

Argentina: Drinking water supply system for rural population of Eastern Tucuman (#437)



Knowledge Centers  
IWRM in Education

To build a closer working relationship on knowledge sharing with universities, GWP...



Perspectives Paper  
Urban Groundwater - Policies and Institutions for Integrated Management



Latest Publications  
New GWP Policy Briefs on Urban, Transboundary, and Economic Water Issues

### How to contribute

You can submit case studies and references to this site.

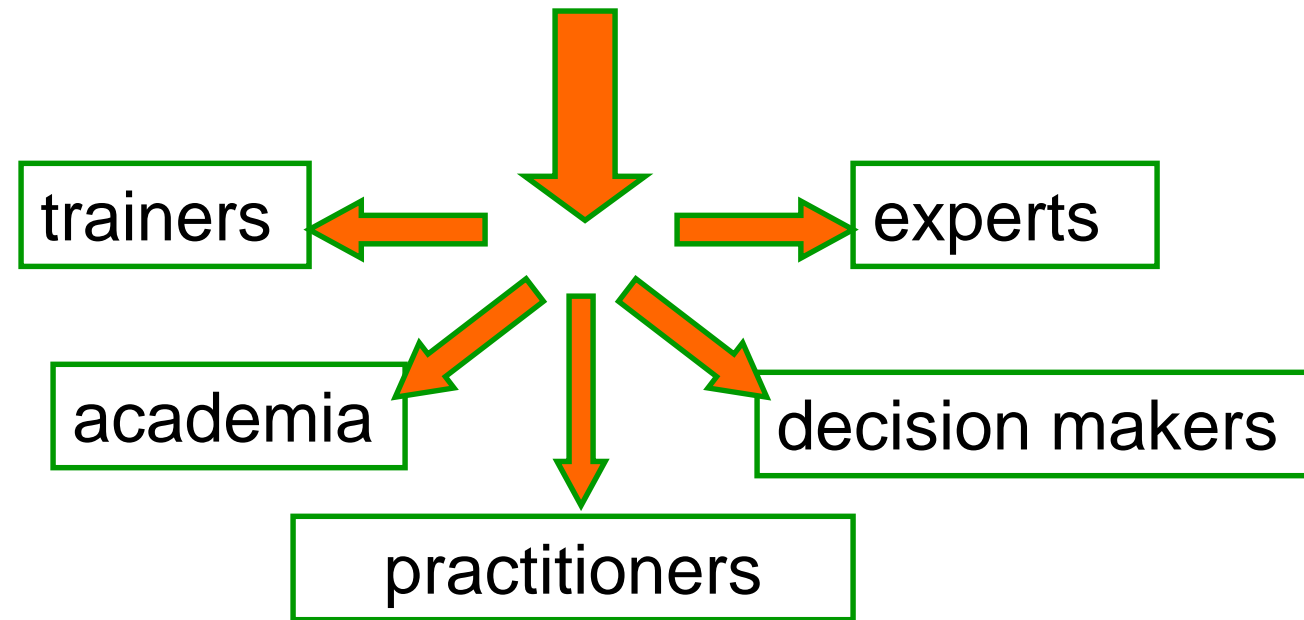
Contribute to the IWRM ToolBox





## For Who is this ToolBox? Why we would like to share it?

- **As water is everybody's business.....**



## Vision and goal

***Vision:***

ToolBox will be an internet based repository of all GWP knowledge on IWRM and the first choice site for water practitioners, decision makers and partners

***Goal:***

ToolBox will contribute to establishing a global communication platform to share knowledge and develop capacity

**[www.gwptoolbox.org](http://www.gwptoolbox.org)**

**[www.gwp.org](http://www.gwp.org)**

**Does the homepage of your website have a prominent link to the  
ToolBox?**