

# **Pakistan Development Forum 2007**

**Session: Water Power and Prosperity**

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“ Where there is water there is life.

Where there is no water there is no life.

Between these two statements lies the whole history of mankind ”



All of us, the rich, the poor, and the marginalized,  
we must all have access to water



## Water underlies:

- > our food production
- > our economic activities
- > our livelihoods
- > our health
- > our environment.

# Water: a limited and renewable resource

- > Only about one percent of the water on the planet is renewable fresh water
- > Rate at which we are using and polluting water is more than twice the rate of population growth
- > There is tremendous variability both spatial and temporal in the availability of water
- > Poor regions of the world are more vulnerable

# Water issues are not academic

**...in many countries they are a matter of life and death:**

- arsenic in groundwater in Bangladesh
- water logging and salinity in arid and semi arid parts of Asia
- heavy metals entering rivers and drinking water because of poor wastewater treatment
- poor water supply and sanitation conditions
- need for data and management systems for dealing with scarce water in arid zones
- climate change and managing associated extreme events like floods and draughts

**...these are all life threatening issues**

# The outlook today...

- > During the past century world population tripled while water use increased six times.
- > Increased water for irrigation, industry and municipal use has resulted in:
  - some rivers no longer reaching the sea
  - 50% of the world's wetlands have disappeared in the past century
  - 20% of fresh water fish are endangered or extinct
- > **Water tables are declining**

## **...the outlook today**

- > Over 1 billion people lack access to safe drinking water and almost double that lack sanitation**
- > Deltas and wetlands are disappearing**
- > Water quality everywhere is declining**
- > and more...**

# **WHY IS WATER MANAGEMENT IMPORTANT IN PAKISTAN**

- **IRRIG AGRI SECTOR CONTRIBUTES 24+% GDP AND EMPLOYS 48% OF WORKFORCE**
- **WATER AVAILABILITY HAS REDUCED TO 1050CUM/CAPITA (CHRONIC STRESS)**
- **WATER SHORTAGE IS PROJECTED AT 14.9MAF (PCRWR 1994)**
- **70-75% OF SURFACE WATER BECOMES AVAILABLE DURING 3 MONTH**
- **STORAGES ARE DEPLETING IN CAPACITY**

# **WHY WATER MANAGEMENT IS IMPORTANT IN PAKISTAN (contd)**

- **G/WATER LEVELS ARE GOING DOWN AND QUALITY IS DETERIORATING**
- **MORE THAN 50% OF ALL DISEASES ARE WATER RELATED**
- **MORE THAN 90% OF EXPORTS ARE AGRI-BASED**
- **FINANCIAL RESOURCES ARE SCARCE**
- **STRONG WATER-POVERTY NEXUS**

# **REASONS FOR GROWING WATER SCARCITY**

- **POPULATION GROWTH**
- **FOOD SECURITY REQUIREMENTS**
- **DEPLETING STORAGE CAPACITY**
- **DECLINING WATERTABLES**
- **INCREASING POLLUTION**
- **AGEING INFRASTRUCTURE**
- **CROPPING PATTERNS**
- **URBANIZATION**
- **INDUSTRIAL DEMAND**
- **LACK OF PROPER LAWS FOR USAGE**

# **REASONS FOR GROWING WATER SCARCITY (contd)**

- **INEQUITY AND POVERTY**
- **CAPACITY EROSION**
- **DESERTIFICATION**
- **DROUGHT**
- **WATERSHEDS AND ECO-SYSTEMS**
- **CLIMATE CHANGE**
- **WATER GOVERNANCE (INSTITUTIONS)**
- **ECONOMIC VALUE OF WATER**
- **WATER WISDOM**

# **SOME FACTS ABOUT WATER RESOURCES OF PAKISTAN**

<b>SYSTEM AVAILABILITY</b>	<b>177 BCM</b>
<b>ANNUAL DIVERSION</b>	<b>129 BCM</b>
<b>FARMGATE AVILABILITY</b>	<b>71 BCM</b>
<b>PROJECTED REQTS (2004)</b>	<b>184 BCM</b>

<b>Rainfall Potential outside the Indus Basin</b>	<b>25 BCM</b>
<b>Presently utilized</b>	<b>6.1 BCM</b>

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# Three huge challenges stand between us today and water security of tomorrow

## 1. Water for people

- > Population growth, especially urbanization
- > Food production
- > Climate change

# Three huge challenges stand between us today and water security tomorrow

## 2. Finding the finance

- > US\$70 billion per year now, \$170 billion needed to cater for 1.2 billion people without access to water, 2 billion without sanitation, and address environmental damage
- > Private sector: invested \$600 billion in 90s to build 2000 major infrastructure projects, little went for water projects

**Where will the new investment come from?**

# Three huge challenges stand between us today and water security tomorrow

## 3. The way we manage water

- Outdated water governance
- Sector approach to water management
- Weak institutions
- Fragmented decision-making
- Insufficient awareness
- Absence of participatory processes
- Centralized planning implementation and operations
- Unrealistic pricing of water

# Solutions we must implement:

## 1. Water for Food



“More crop  
per drop”

# Solutions we must implement:

## 2. Improve the Financial Situation



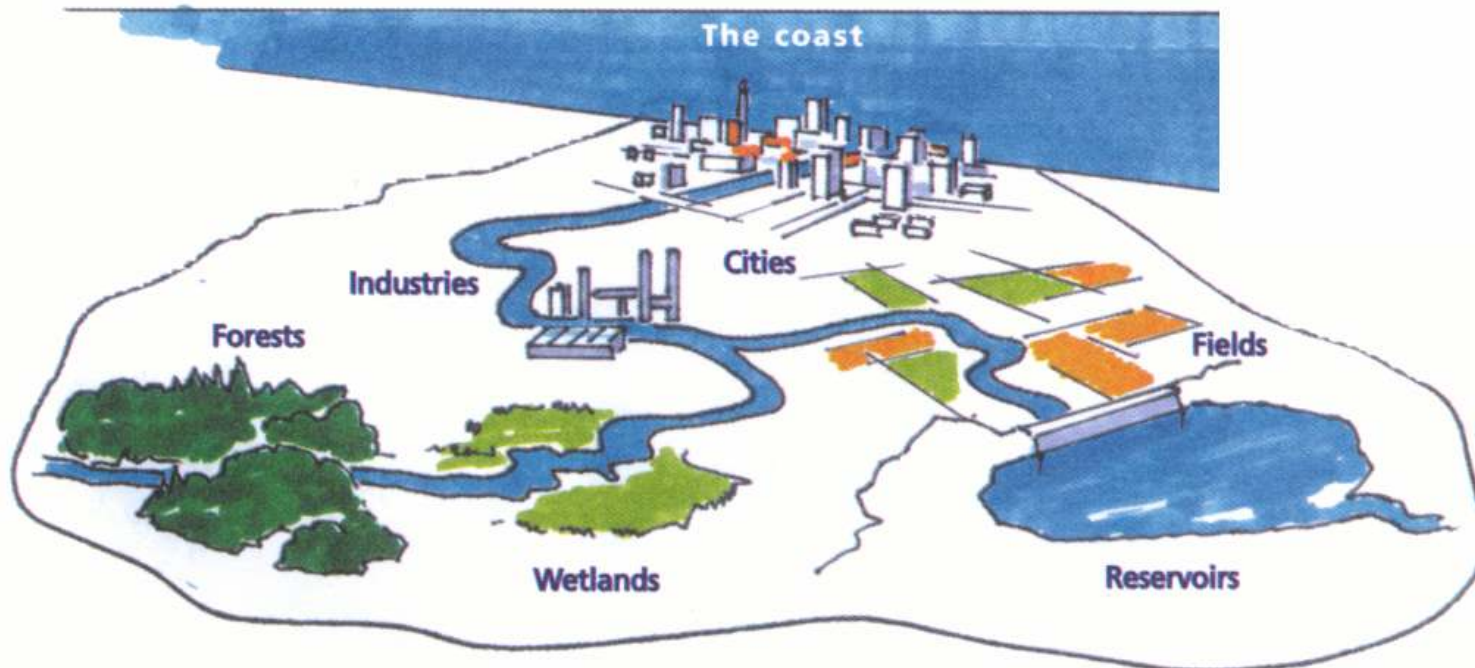
- > Freely acknowledge there are costs involved in supply and use of water
- > Cost recovery in household, city and other economic sectors while accounting for the poor
- > Find new resources by making the sector attractive for investment by innovative approaches

# Solutions we must implement:

## 3. Change our water management systems

### Integrated Water Resources Management (IWRM)

- an approach to water management that seeks to balance human, industrial, agricultural and environmental needs -

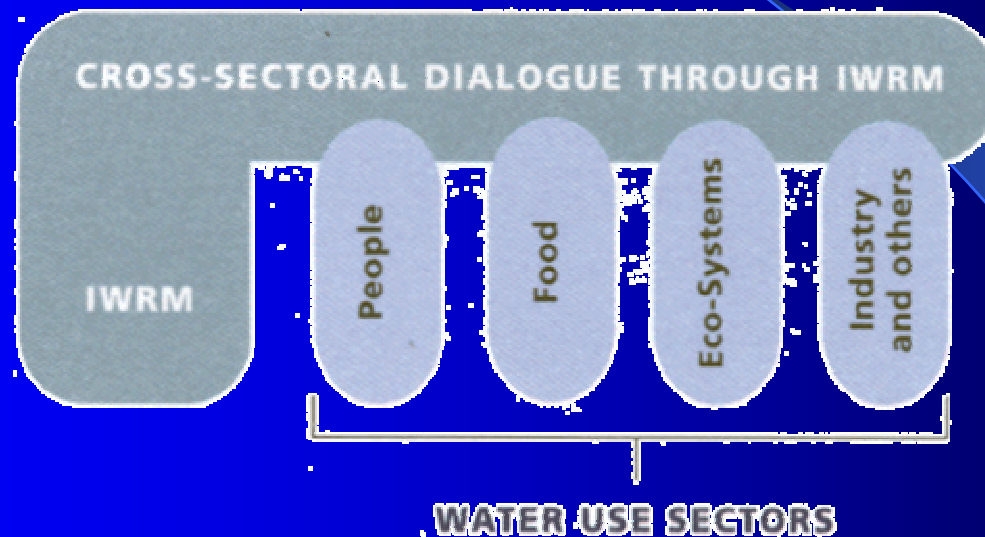


# Traditional WRM

- Focus on technical solutions - "technical fix", satisfying an ever increasing demand. WRM = WR development. "Build more infrastructure"
- Isolated projects on:
  - Irrigation
  - WSS
  - Flood control
  - Hydropower
  - Industry
- Evaluation of feasibility mainly based on economic criteria
- No focus on environmental and social impacts
- Each type of water use controlled by more or less independent, sectoral authorities: Agriculture, WSS, Transport/navigation, Energy, Fisheries, Tourism, etc



# PARADIGM SHIFT FROM SECTORAL TO CROSS SECTORAL WATER MANAGEMENT



IWRM is a process which promotes the coordinated development and management of water, land and related resources in order to maximise the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems (GWP/TAC).

# Integrated Water Resources Management provides opportunity

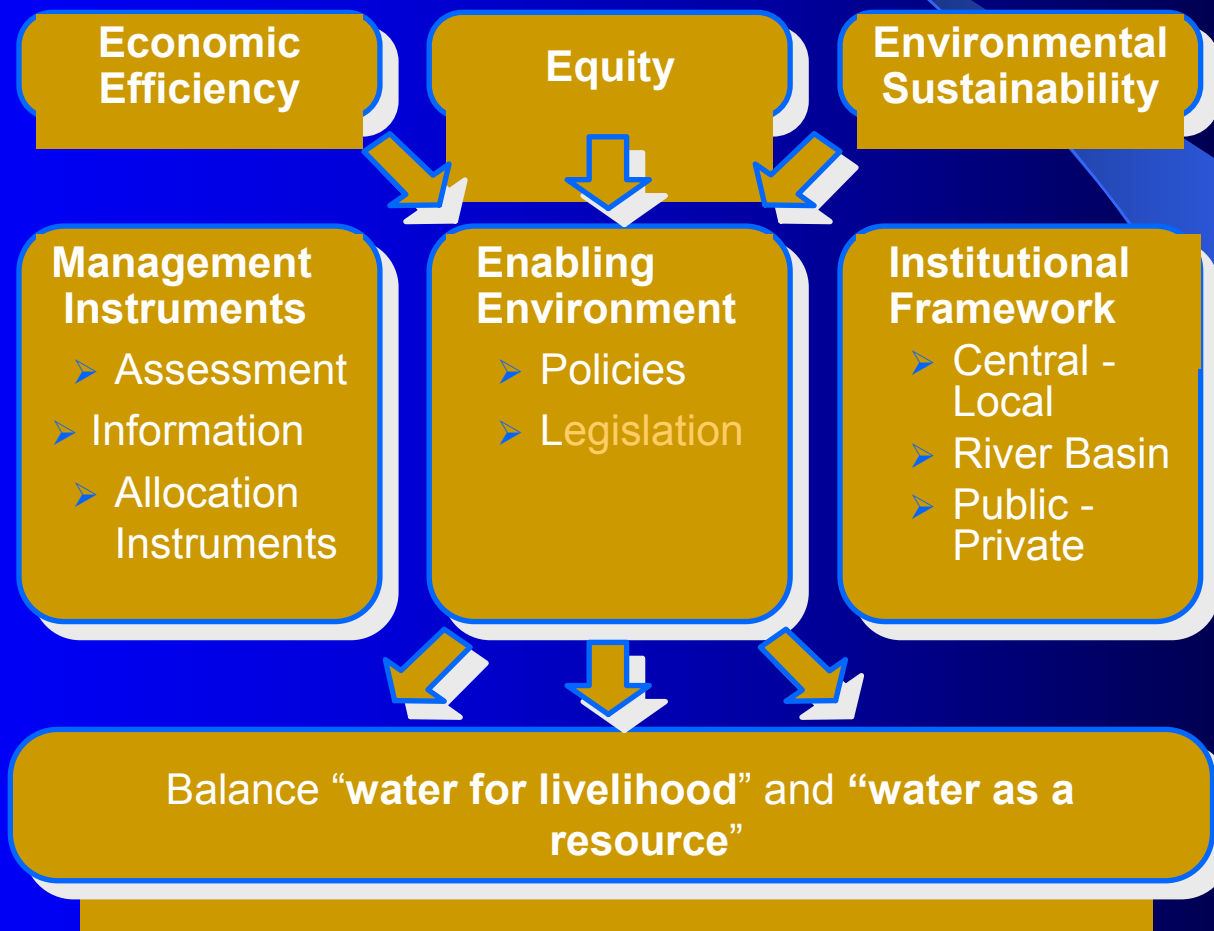
ECOSYSTEM SUSTAINABILITY



ECONOMIC EFFICIENCY

SOCIAL EQUITY

# Integrated Water Resources Management - at a glance



# INDICATIVE ACTIVITIES IN IWRM STRUCTURES

## A. Enabling environment

- A1. Policies
- A2. Legislation
- A3. Regulation
- A4. Financing & incentive structures

## C. Management instruments

- C1. Water resources assessment
- C2. Plans for IWRM
- C3. Demand management
- C4. Social change instrument
- C5. Conflict resolution
- C6. Regulatory instruments
- C7. Economic instruments
- C8. Information management

## B. Institutional roles

- B1. Creating organizational frameworks
- B2. Decentralization and empowerment
- B3. Institutional capacity building

# IWRM: integration of social, economic and natural systems

Freshwater	↔	Coastal zone
Land	↔	Water
Green Water	↔	Blue water
Surface water	↔	Groundwater
Quantity	↔	Quality
Upstream	↔	Downstream



# Human system integration

- **Mainstreaming of water resources (water sensitive policy/economy)**
- **Cross-sector integration in national policy development**
- **Macro-economic effects of water developments**
- **Basic principles for integrated policy-making**
- **Influencing economic sector decisions**
- **Integrating all stakeholders in planning and decision process**
- **Integrating water and wastewater management**

# - Changing the way we manage water

## - What we have to do

- > Understand that solutions will not be found in extraordinary technological advances
- > Move towards holistic approach: IWRM
- > Get the right people to talk together and get them better tools they need to make better decisions
- > Be willing to reform existing structures and practices when and where required
- > Bring civil society to the table, as well as the private sector

# What decision makers may need to do

- Establishing the enabling environment –



Establish and enforce appropriate water policies, laws and regulatory frameworks

- What decision makers may need to do
- Establishing the enabling environment

Support the establishment of proper institutional structures at river basin level / catchment level and ensure there are more transparent arrangements for water allocation and delivery among the different sectors and users



# What decision makers may need to do

- Establishing the enabling environment –

Encourage participatory processes at all levels, and be willing to share power in the decision making processes with all stakeholders



# What decision makers may need to do

- Establishing the enabling environment –



Realign economic practices of water use and make provision for the poor

# **SUGGESTED PRIORITY ACTIONS**

- **ENGAGE STAKEHOLDERS**
- **BUILD PARTNERSHIPS**
- **FOLLOW PRINCIPLE OF SUBSIDIARITY**
- **IMPROVE GOVERNANCE**
- **MOBILISE FINANCIAL RESOURCES**
- **BUILD CAPACITY AND SHARE KNOWLEDGE**
- **BUILD POLITICAL WILL TO TRANSLATE PLANS INTO ACTIONS**

# INDISPENSEABLE IWRM TOOL

## PARTICIPATION

- **Holy Grail of Water Management.**
- **Principle and necessity is agreed.**
- **Everybody does not give the same definition to participation**
- **Participation by stakeholders at different levels must be recognized.**
- **Participation brings ownership and accountability**
- **Mutuality of benefit must be visible in participation**
- **There are various degrees of participation of the citizens. But equal access to all stakeholders to participate is vitally important**

# For Partnerships to Work.....

- Realize that success is usually outside the purview of those seeking to effect change.
- Willingness and CAPACITY to adopt new working methods.
- Willingness to move OUT of analytical mode and move to real listening mode.
- Realize there may be enough water to meet needs but certainly not enough for insatiable greed
- Caring and sharing determines success in Partnership
- Area water partnerships (AWP's) AND RBWP'S are promising new mechanisms for change

# WHAT IS NEEDED TO ACHIEVE IWRM

**Realise that water does not recognise administrative and political boundaries and that it renders itself to optimal outcomes when dealt with in river basin context**

- **Water needs to be treated as a resource and not as a commodity**
- **Realise that Water Resources Management is a collective responsibility of the governments, water institutions, civil society institutions, stakeholders and the private sector**
- **Realise that water is both a social as well as an economic good and it expects respect for its ecosystems**
- **Integrate more effectively policy, planning and implementation of water related projects and programs**

# WHAT DO WE HAVE TO DO (contd)

- **Make water governance more effective**
- **Make investments in water attractive**
- **Break barriers to communication and build partnerships through genuine participation for IWRM outcomes**
- **Build capacity for IWRM at all levels**
- **Very importantly generate the political will for seriously tackling the complex issues of water**
- ***If we can do this the chances are we will achieve cooperation rather than conflict at all levels in our pursuit of sustainable development management and use of water***

THANK YOU