

# **FROM WATER SCARCITY TO WATER SECURITY THROUGH INTEGRATED MANAGEMENT**

**by**

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# Introduction

The Mediterranean and particularly the arid and semi-arid countries, water availability is one of most pressing constraints to human development: an increasing population with relatively high rate of urbanization, increased demand for irrigation, growing stress on the fresh water ecosystems have led to increasingly growing problems and conflicts among the above-said sectoral water uses.

Currently, agriculture activities entail around 72% of the water consumption in the Mediterranean basin. Besides, the excessive consumption of water, the mismanagement and the inappropriate use in all water sectors and particularly in the irrigation one, resulted in gradual degradation of the most fertile soils, particularly by salinization, now affecting 30% of the productive soils. The excessive and uncontrolled use of chemical fertilizers and pesticides is clearly apparent and notably reflected on the water resources quality being now subjected to rapid deterioration.

# The dilemma

How to balance the difficult water equation characterized by a limited fragile water supply on the right side and the increasingly water demand on the left side of equation.

The limited and fragile  
water supply side

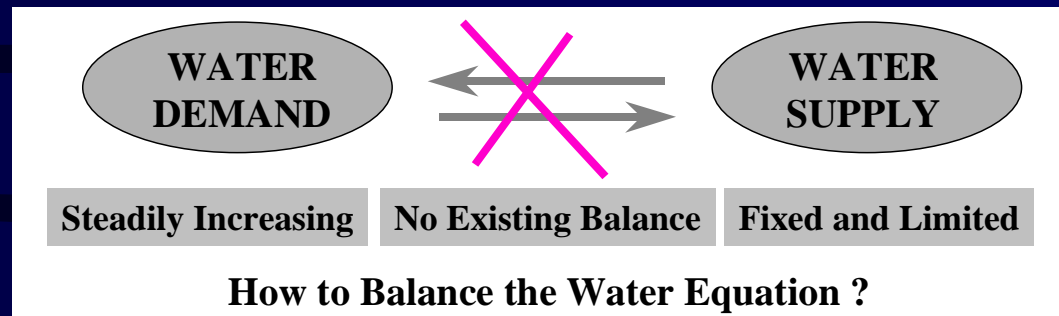


The increasingly  
water demand side

What is the potentiality of increasing the water supply to provide the needed water demands?

- Increasing the supply side is not the solution to solve the problem :
- In most developing arid countries in the region the available water resources are already mobilized
- even in many cases there exist few new supply solutions they are technically difficult and not economically viable.

# Water Resources Problems: The Structural Imbalance



## Where lies the solution?

Changing the way of thinking with major concentration on the soft path approach fundamentally based on reducing the demand and thereby increasing indirectly the available water supply, without the need for any new infrastructure (i.e. not following the hard wear approach).

The reuse and recycle of non-conventional water resources (drainage water, treated municipal effluents) as an additional water supply, particularly in the irrigation sector).

## *The new soft path approach*

“the soft path approach” means developing new methods to meet the demands of growing population without requiring major new constructions or new large scale water transfer from one region to another, focusing on efficiency improvements, implementing options for managing demand and reallocate water among users to reduce projected gaps and meet future needs

## **what do we mean by changes in both water use and management?**

The changes do not imply to stop increasing the water supply through the traditional water approach. Some new dams, aqueducts, and water infrastructures will certainly be built, particularly in those developing countries where the basic water requirements for humans have still not been met.

Future perspectives to meet human demands for water successfully will increasingly depend upon non-structural solutions and a completely new approach to planning and management fundamentally based on re-integrating water use with maintaining ecological health and environmental well-being

# Water resources management and how it should be

The Mediterranean's available water resources has to be managed and used in a way that:

- Is environmentally-sound and sustainable over the long term and protects the resources;
- Maximizes water-related benefits for the majority of people especially the poor, without leaving anyone worse off;
- Address all significant human and ecosystem water needs; and
- Ensures the participation of all relevant parties in the water allocation process and it appropriate levels.

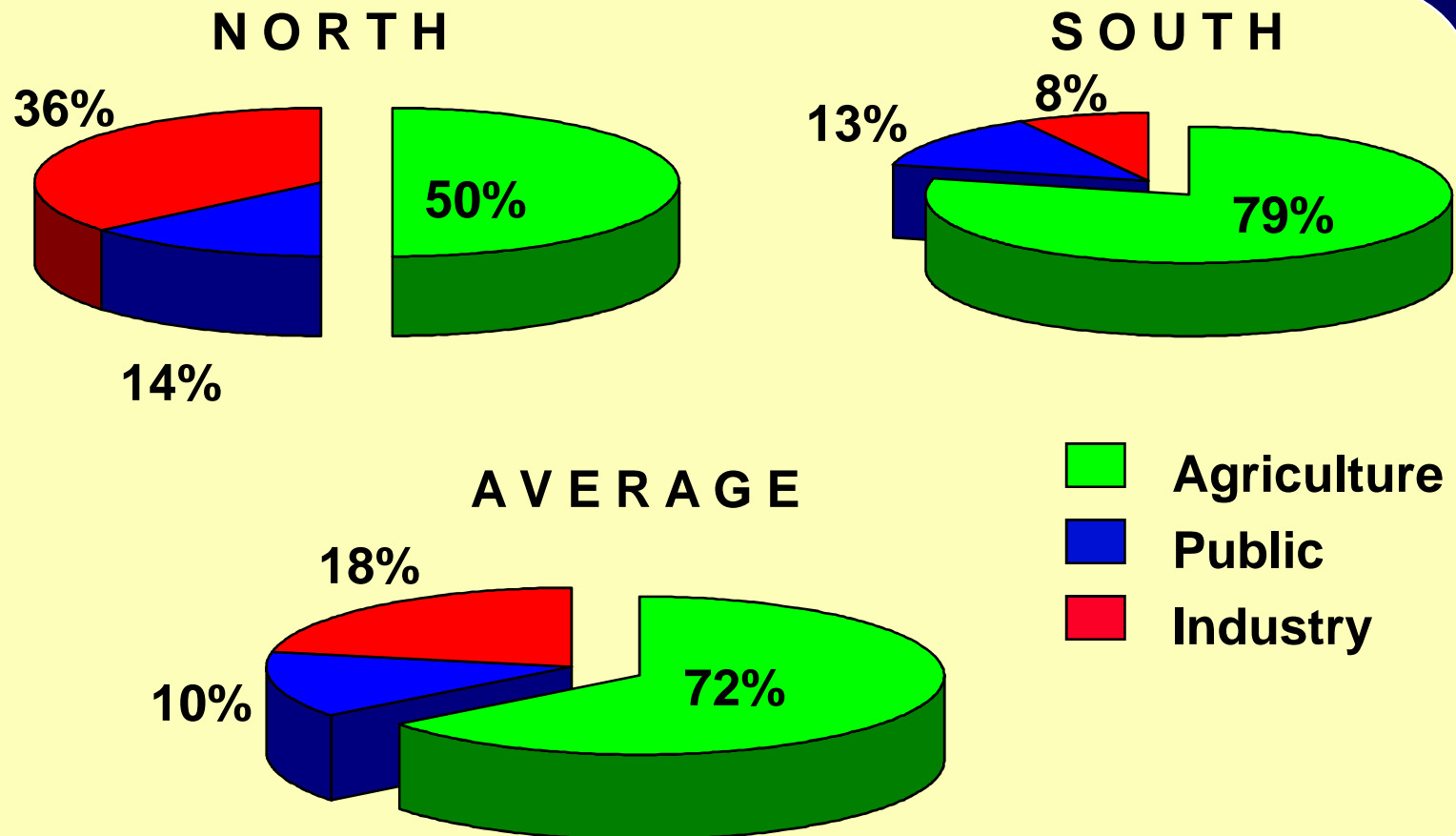
These issues besides others could be provided through  
appropriate integrated water resources management

# Why IWRM for the Mediterranean? the Driving Forces

- Countries experience serious water resources issues
- Water-related problems
- Water scarcity and over exploitation
- Uneven water distribution
- The absence of strategic water allocation
- Poor management of water resources and grave economic consequences
- Soil degradation and loss of production land
- Water degradation, health and loss of productivity
- Water-related disasters: floods and drought, risk management

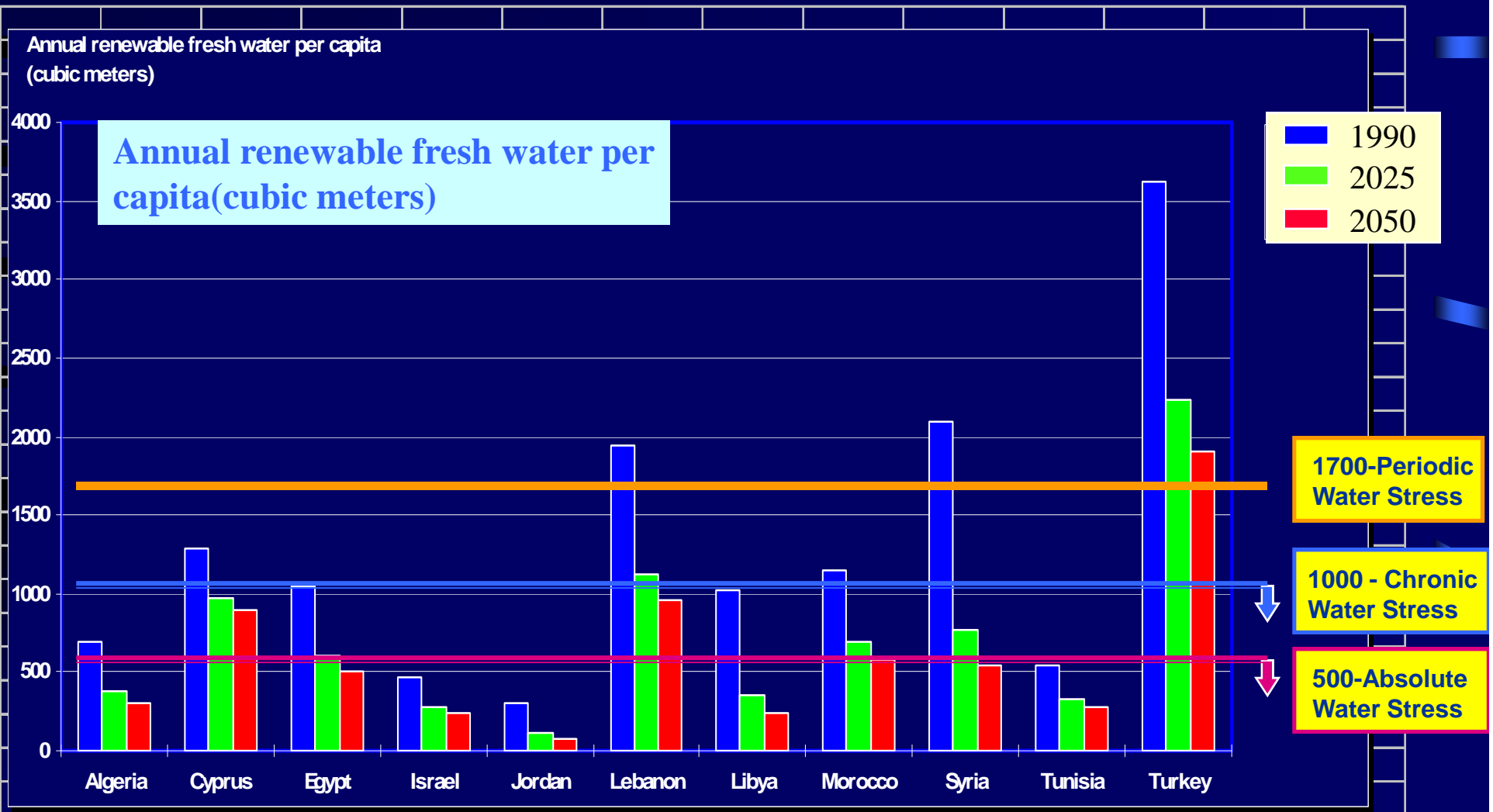


# Water Use in the Mediterranean Countries



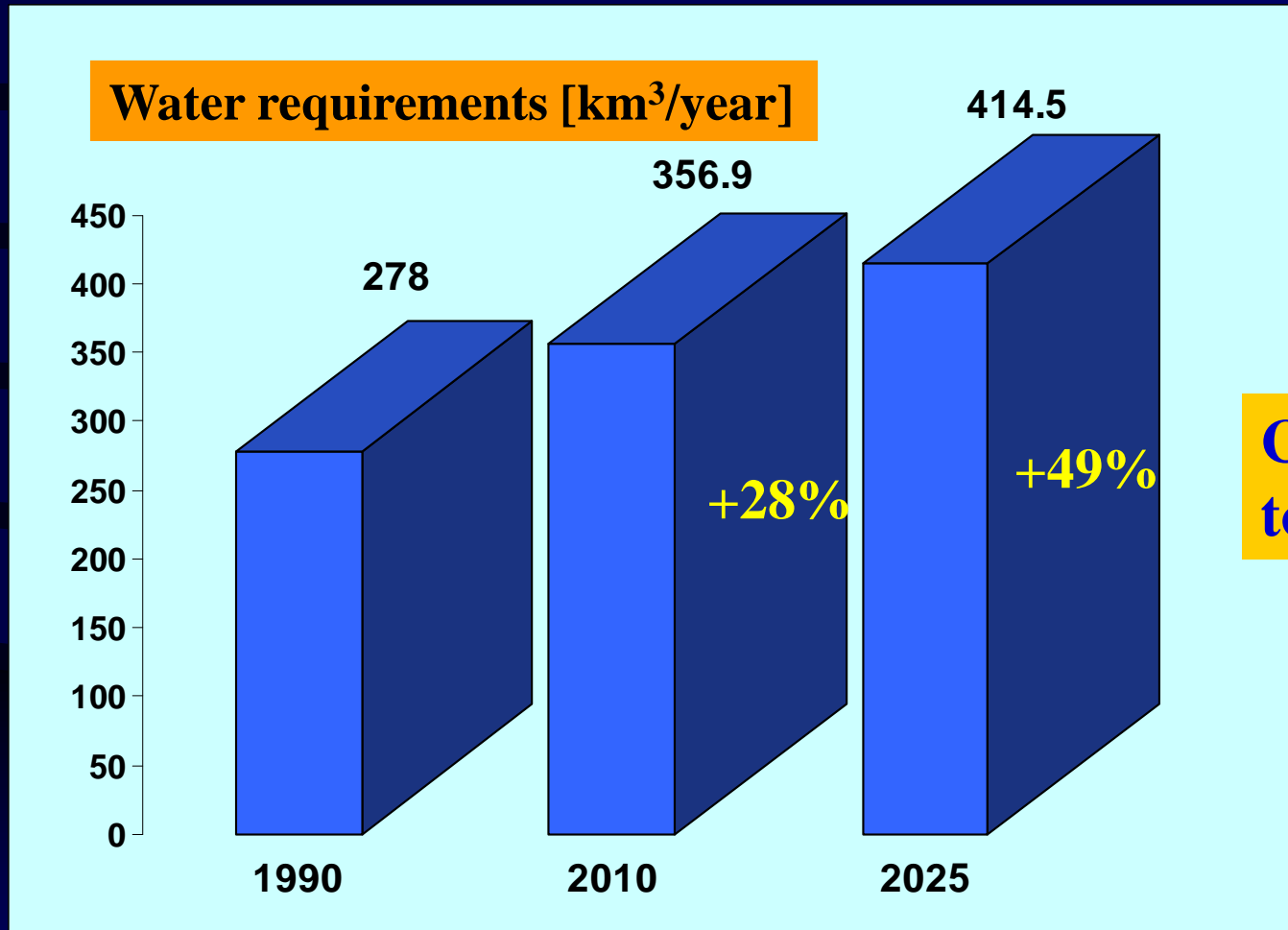
Source: Elaboration LAMBED on World Resource Institute data, 1985

# Renewable Fresh Water Availability Per Person in the Southern Mediterranean Countries, 1990 to 2050



Source: United Nations Population Division, 1994

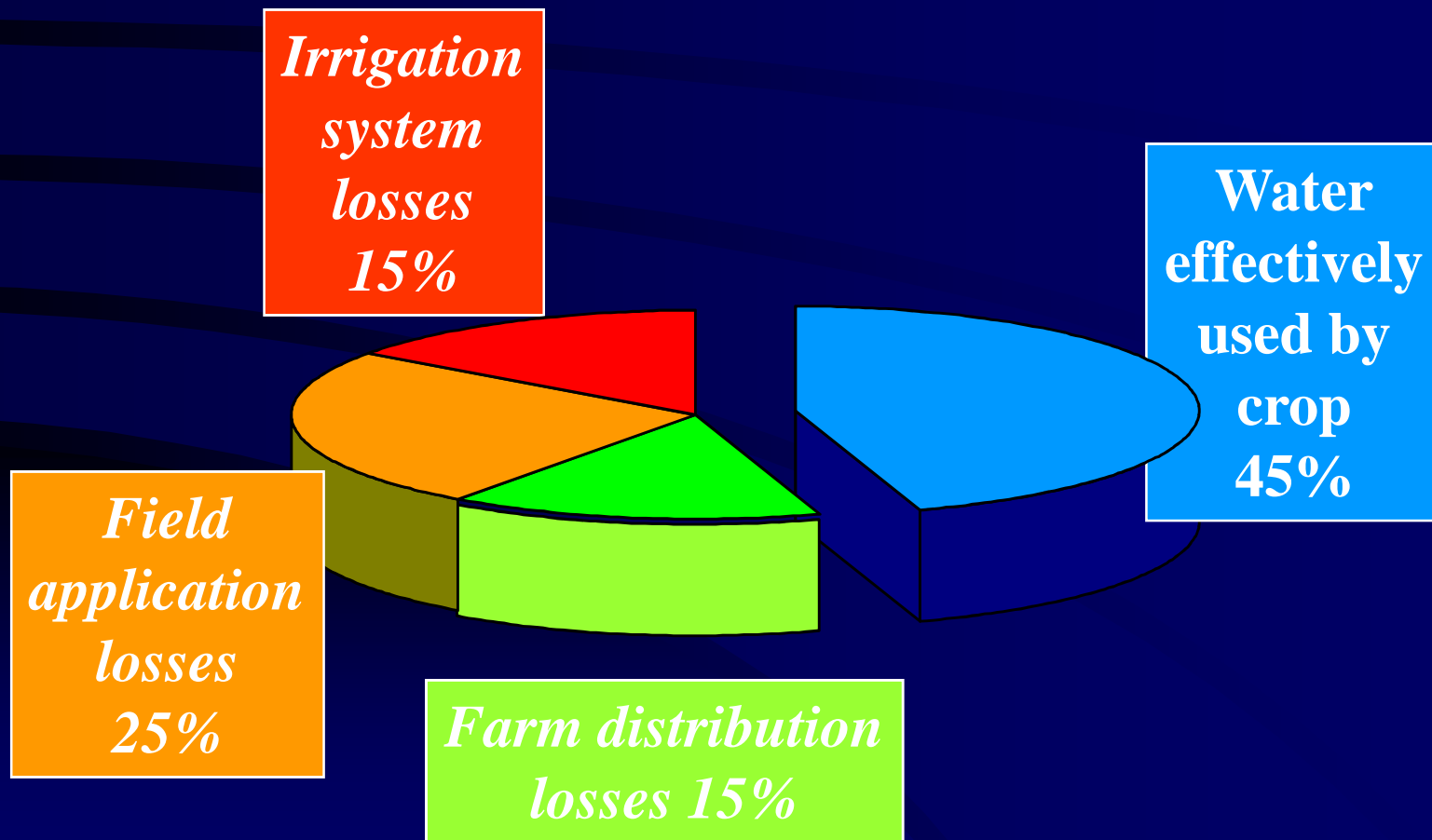
# Present and forecast water requirements in the Mediterranean region



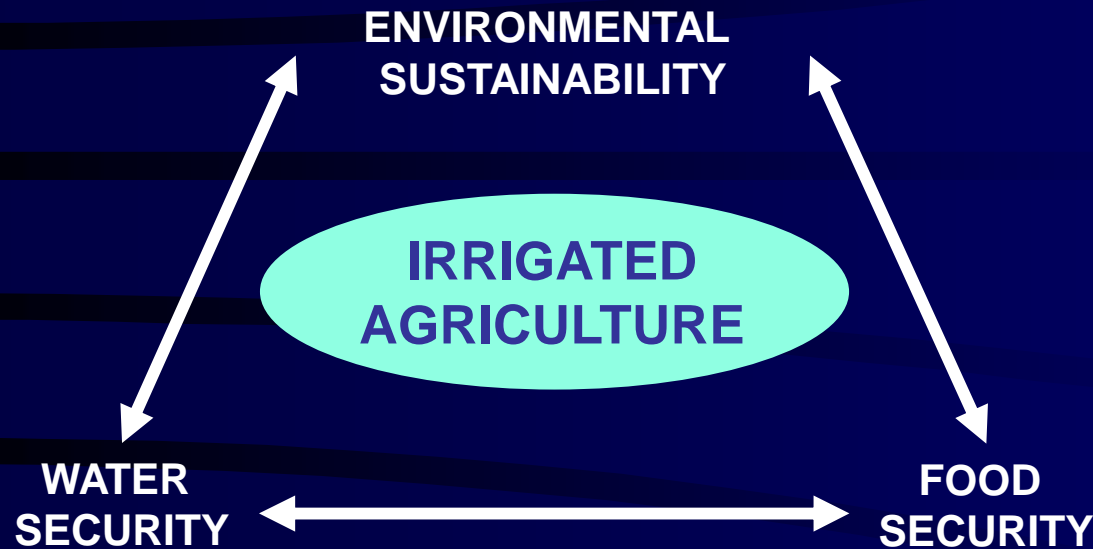
**Compared  
to 1990**

# Average Losses of Irrigation Water

The mismanagement of the water resources and the notable water losses in all sectors and, in particular, in the agricultural one (where efficiency drops below 50% ) lead us to the conclusion that the current water crisis is mainly a crisis of water governance.



# Where Lies the Solution?



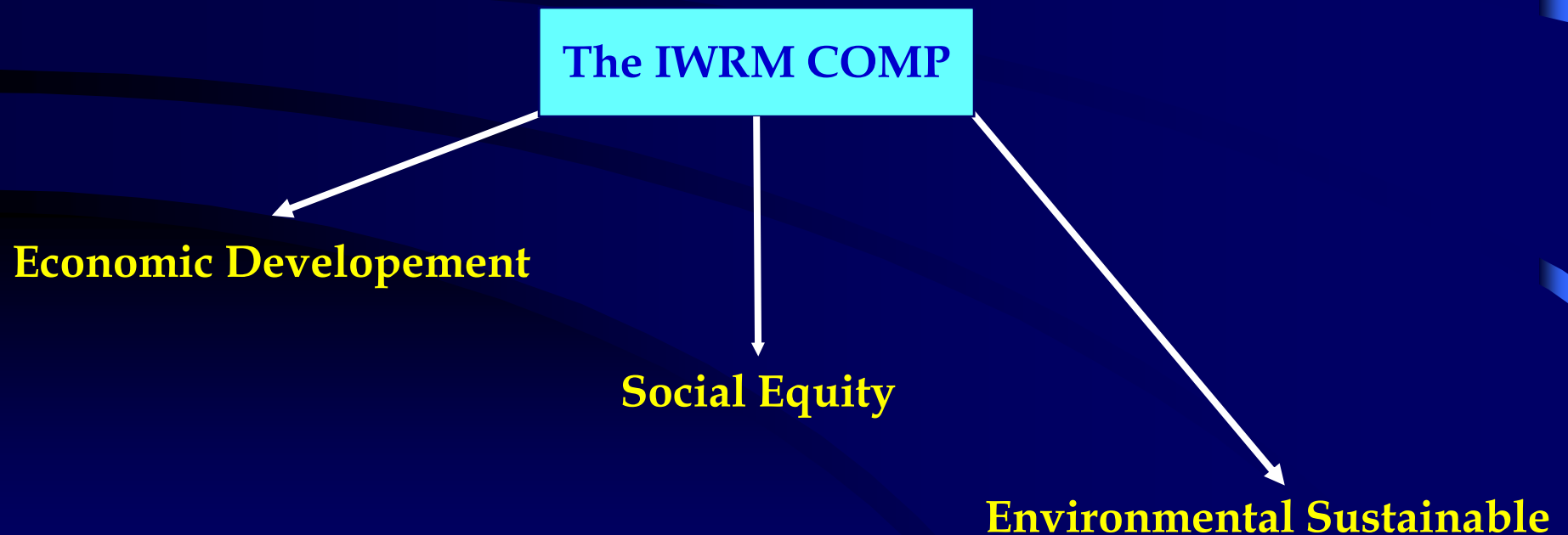
Conclusively, the irrigated agriculture is occupying the centre of this triangle and is directly or indirectly connected to each component included in the triangle.

Looking for water security which provides the food security, the way to this is mainly a matter on how we are using and managing our water in the agriculture sector and how much water saving could be achieved in this sector.

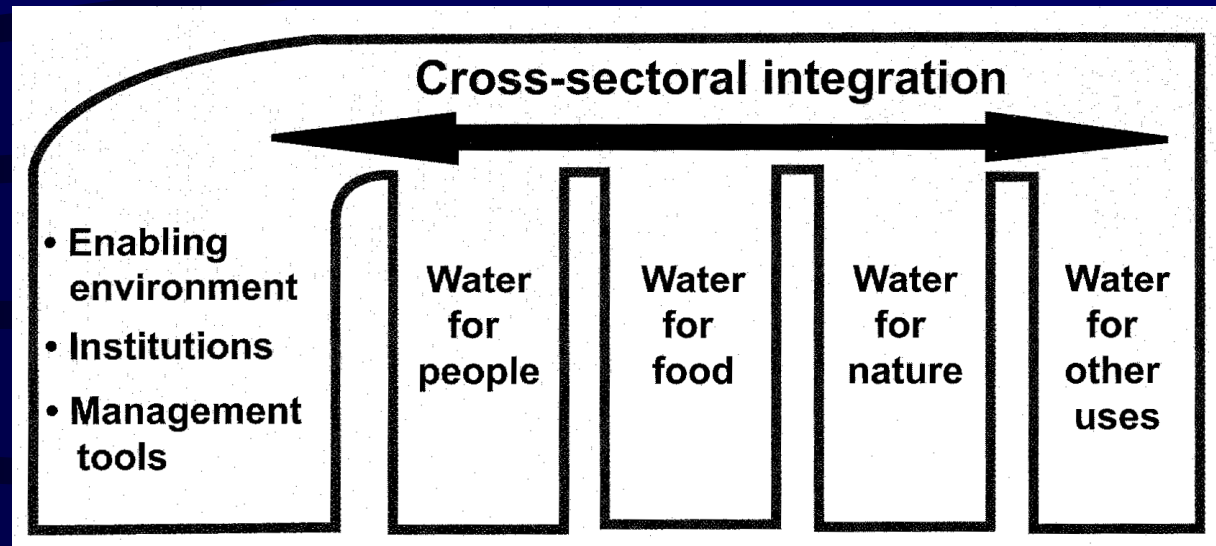
The fragmented approach we are still implementing in managing water resources in the agricultural sector resulting in enormous water loss will never provide the region with both water and food security, but rather widens the gap with enormous difficulties to achieve our final goal.

# IWRM Definition

Global Water Partnership (GWP, 2000) defines IWRM as “a process which promotes the coordinated development and 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”.



## The needs

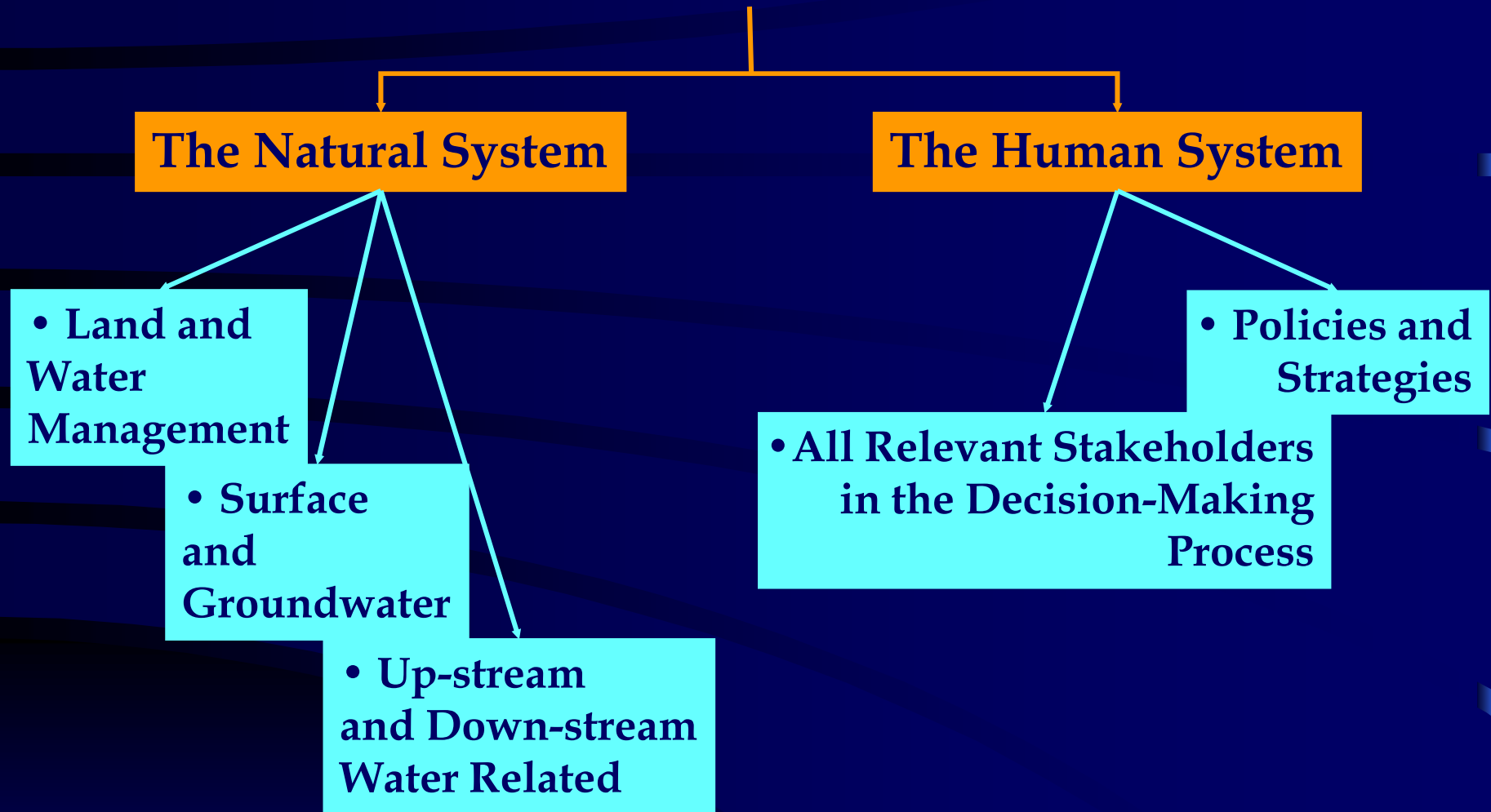


## The four teeth of the comp

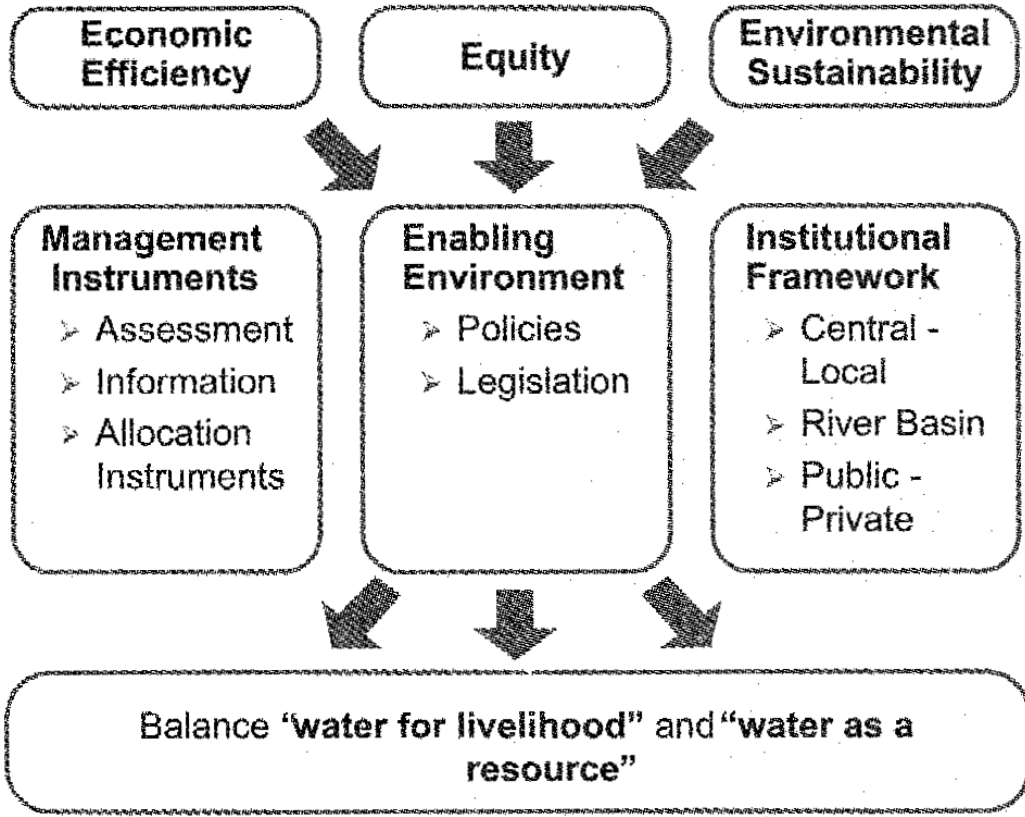
Cross-sectoral integration should take place within :

- The natural system, with its critical importance for resource availability and quality, and
- The human system, which fundamentally determines the resources use, waste production and pollution of the resources and which must also set the development priorities and control associated infrastructure.

## Cross Sectorial Integration Should Be Within:







**The three pillars**

**The needs**

# The Implementation of the IWRM Target in Developing Countries

For most developing countries with economy in transition, the implementation of the IWRM target is of limited progress and requires acceleration. A recent survey presented by GWP,(CSD)-12 in April 2004 estimated that about half of the more than 100 countries surveyed had hardly began the process of formulating IWRMs. Africa: 13%; Asia and Pacific: 12%; Latin America and the Caribbean 14%.

The reasons behind :

- Is it political commitment?
- Is it the lack of financial resources?
- Is it the lack of human resources capacities?
- Is it the lack of well functioning institutions?

# IWRM in the Mediterranean: Possible Entry Points and its Appropriate Identification

There are several options as entry points to IWRM; the one to be chosen will differ according to the variation among countries in the critical water resources issues, the objectives and the expected IWRM benefits.

**Starting with concrete issues can yield better results. Being too ambitious at the outset – ignoring the political, social and capacity problems that must be solved for effective implementation - can result in a strategy that looks great on the paper but doesn't translate into doable actions**

**Establishing the starting point; elements to be carefully considered:**

- The enabling environment
- Management instruments
- The institutional framework
- National plans
- Capacity building and empowerment activities

# Facilitating and accelerating the IWRM process

The implementation processes are facilitated by :

- Strong political will, often motivated by a need to address burning and high profile issues.
- A clear distribution of roles and responsibilities among the stakeholders.
- Highly motivated drivers maintaining commitment throughout the process.
- Exchange of knowledge and experience between countries at various stages of the process.
- Setting clear milestones for the achievement.
- Monitoring and evaluation of progress, performance and impact

# The needed changes

Before embarking on changes we must have definite answers to the following questions:

- What are the changes to be taken to achieve the country's goals?
- What are the chances to put the change in action considering the current political, social and economic situation?
- What are the sequences of the change?
- If the change is decided to take its way, will it require to be preceded by other changes?

Changes are needed in several areas thereby creating the enabling environment for IWRM implementation:

- The enabling environment is determined by national, provincial and local policies and legislation that constitute the “rules of the game” and enable the stakeholders to play their prospective roles in the development and management of water resources.
- The forums and mechanisms, comprising information and capacity building

## **Other important issues are to be included :**

- ❖ Participation “bottom up approach”**
- ❖ Decentralization: from public agencies to community based organizations**
- ❖ Institutional roles and development**
- ❖ Effective co-ordination mechanisms**
- ❖ Facilitate multi-stakeholder dialogue**
- ❖ Capacity building development**

Finally, it is to emphasize that there is a massive interest in countries and regions all over the world, living under increasingly water scarcity conditions, to intensify their efforts to change drastically the ways water resources are managed towards an integrated management approach to achieve the water security goal. The challenge now is to transform this interest into committed action to avert the looming water crisis.



**Thank You**

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