



The INECO Project

Framework and activities in Cyprus

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Project web site: <http://environ.chemeng.ntua.gr/ineco>

The water management challenges of the 21st Century (1/2)

- Meeting basic needs
 - Recognise that access to safe and sufficient water and sanitation are basic human needs and essential to health and well-being
- Securing food supply
 - Enhance food security, particularly of the poor and vulnerable, through the more efficient use, and the more equitable allocation of water for food production
- Protecting ecosystems
 - Ensure the integrity of ecosystems through sustainable water resources management
- Managing risks
 - Provide security from floods, droughts, pollution and other water-related hazards

The water management challenges of the 21st Century (2/2)

- Sharing water resources
 - Promote peaceful co-operation and develop synergies between different uses of water at all levels, whenever possible, **within** and, in the case of boundary and trans-boundary water resources, **between** states concerned, through sustainable river basin management or other appropriate approaches
- Valuing water
 - Manage water in a way that reflects its economic, social, environmental and cultural values for all its uses, and to move towards pricing water services to reflect the cost of their provision
 - Take account of the need for equity and the basic needs of the poor and the vulnerable
- Governing water wisely
 - Ensure good governance, so that the involvement of the public and the **interests** of all stakeholders are included in the management of water resources

Challenges in Mediterranean

- Much progress has been made in terms of infrastructure development
 - Adoption of a supply-oriented approach
 - Development of extensive water storage and conveyance infrastructure to meet increasing demand and economic development goals
 - But ... marginal water supply costs are increasing
 - Significant expansion of the knowledge-base on water resources
- Further steps
 - Improve the management of water and environment
 - Further develop & rehabilitate infrastructure
 - Strengthen the Institutional and Socio-economic environment
- WFD Implementation challenge
 - Ability to cope with water scarcity without compromising
 - Environmental objectives
 - Economic & social development

Strengthening the Institutional and Socio-economic environment

- Foster end-users capacity to adopt technical innovations
- Enhance capacity for updating and enforcing legislation
- Provide economic incentives & disincentives and increase awareness towards demand management
- Encourage stakeholder participation in decision-making

The INECO Project

- **Title:** Institutional & Economic Instruments for Sustainable Water Management in the Mediterranean Region
- Coordination Action, supported by the European Commission (6th Framework Programme)
 - **Thematic Priority:** Specific Measures in Support of International Cooperation (INCO) – Mediterranean Partner Countries (MPC)
- **Period:** 2006-2009

Who we are...

1. School of Chemical Engineering, National Technical University of Athens, Greece
2. International Office for Water, France
3. International Network of Basin Organisations
4. Istituto di economia dell' energia, dell' ambiente e della tecnologia, Luigi Bocconi University, Italy
5. Water Development Department, Ministry of Agriculture, Natural Resources & the Environment, Cyprus
6. Aeoliki Ltd, Cyprus
7. Tunis International Centre for Environmental Science and Technology, Tunisia
8. Water Management Research Institute, MWRI, Egypt
9. Ministry of Agriculture & Land Reclamation, Egypt
10. International Consultants, Egypt
11. Conseil et Developpement S.a.L, Lebanon
12. Studies & Integration Consulting, Syrian Arab Republic
13. Agence de Bassin Hydrographique de Constantinois-Seybousse-Melegue, Algeria
14. Iskane Ingenierie, Morocco

... and what we intend to do

- Establish Multi-Stakeholder Fora
- Identify, propose & evaluate alternative instruments which can address focal WM problems

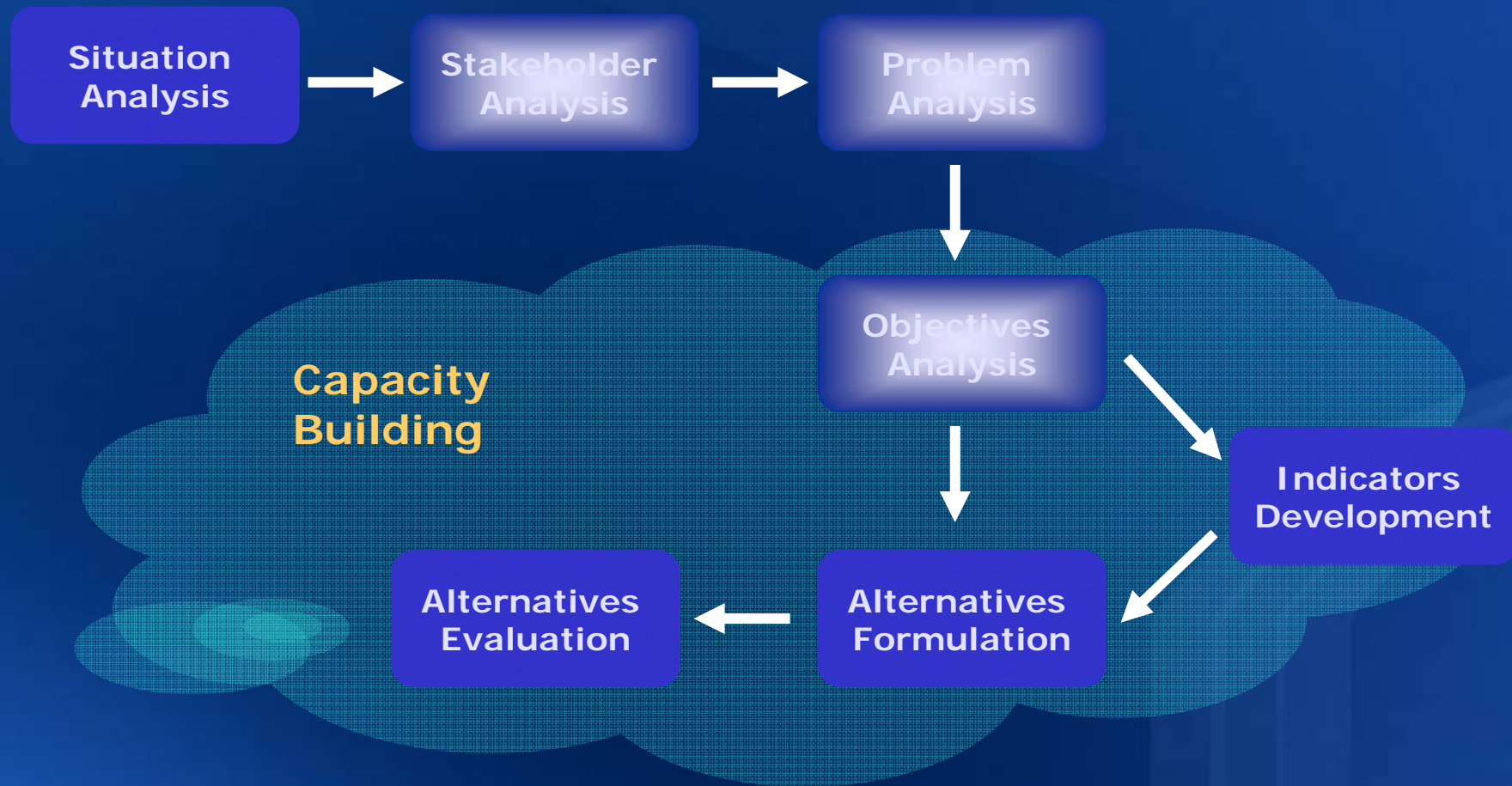


Promote capacity building for constructively engaged IWRM

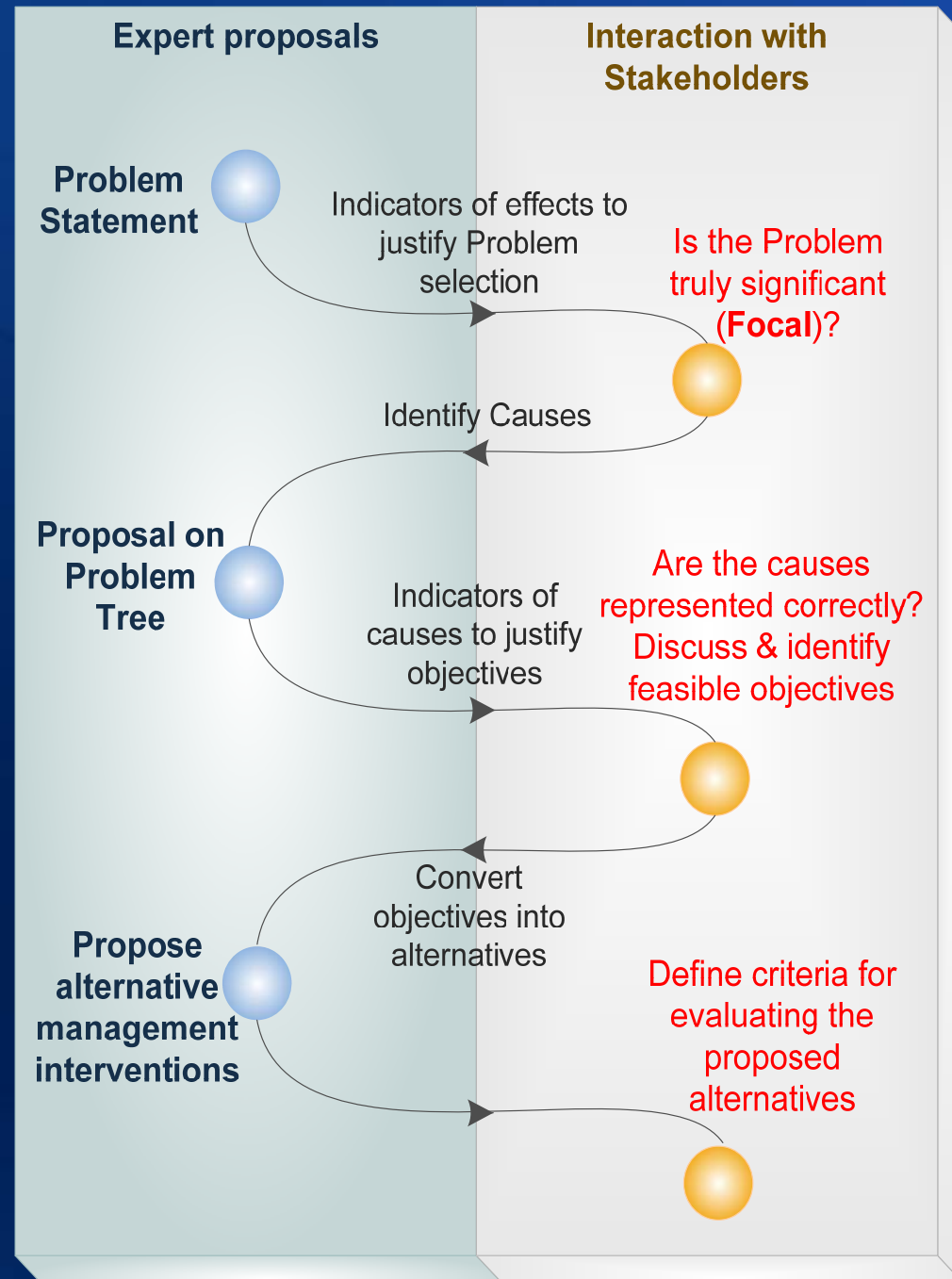
Key Project Concepts

- Integrated Water Resources Management (IWRM)
- Mechanisms & instruments for:
 - Valuing water
 - Sharing water
 - Governing water systems
- Public Participation
 - Engagement of all concerned parties in a constructive dialogue
- Economic instruments
 - Economic incentives (e.g. subsidies) and disincentives (e.g. pricing, penalties) for sustainable water management
 - Recovery of water service costs to ensure proper maintenance and adequate water services

Approach



An evolving participatory approach



Focal WM Problems in INECO

- **Cyprus:** Aquifer depletion and sea intrusion
- **Tunisia:** Groundwater depletion and salinisation
- **Lebanon:** Water stress in the Damour River Basin
- **Morocco:** Inefficient water use in the Oum Er Rbia River Basin
- **Egypt:** Water quality deterioration in the region of Bahr Basandeila Canal
- **Syria:** Water pollution in the Barada River Basin (Greater Damascus Area)
- **Algeria:** Water pollution in the Seybousse River Basin

Commonalities?

Country /Region	Sharing			Valuing			Governing				
	S1	S2	S3	V1	V2	V3	G1	G2	G3	G4	G5
Syria		✓	✓	✓	✓		✓	✓	✓	✓	✓
Tunisia		✓		✓	✓		✓	✓	✓		
Cyprus	✓	✓			✓				✓	✓	✓
Morocco	✓	✓		✓	✓		✓	✓			
Lebanon	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Egypt		✓	✓	✓	✓		✓	✓		✓	
Algeria		✓		✓	✓		✓		✓		✓

S.1 Water allocation conflicts (scarcity & stress)
 S.2 Ineffective management of shared resources
 S.3 No access to basic water services

V.1 Low recovery of costs
 V.2 Ineffective application of the polluter-pays principle
 V.3 Inefficient water allocation

G.1 No financing/planning for technical solutions & water works
 G.2 Limited/no public participation
 G.3 Inability/unwillingness to enforce legislation
 G.4 Overlaps in responsibility
 G.5 Lack of human resources

Common Tangible Water management problems

- Widening gap between water supply and demand
 - Inadequate water management and population growth
 - Decreasing availability of freshwater supplies
- Water quality deterioration
 - Ecological threats
 - Health issues
 - Poor water quality
 - Water-borne diseases
 - Lack of adequate safe drinking water and sanitation

Common Underlying Issues

- Organisational barriers
 - Lack of funds, facilities, capacity and procedures
 - Inadequate legal imperatives and administrative guidelines
- Perception obstacles
 - Lack of societal understanding of the underlying causes
 - Limited awareness & participation

Need for...

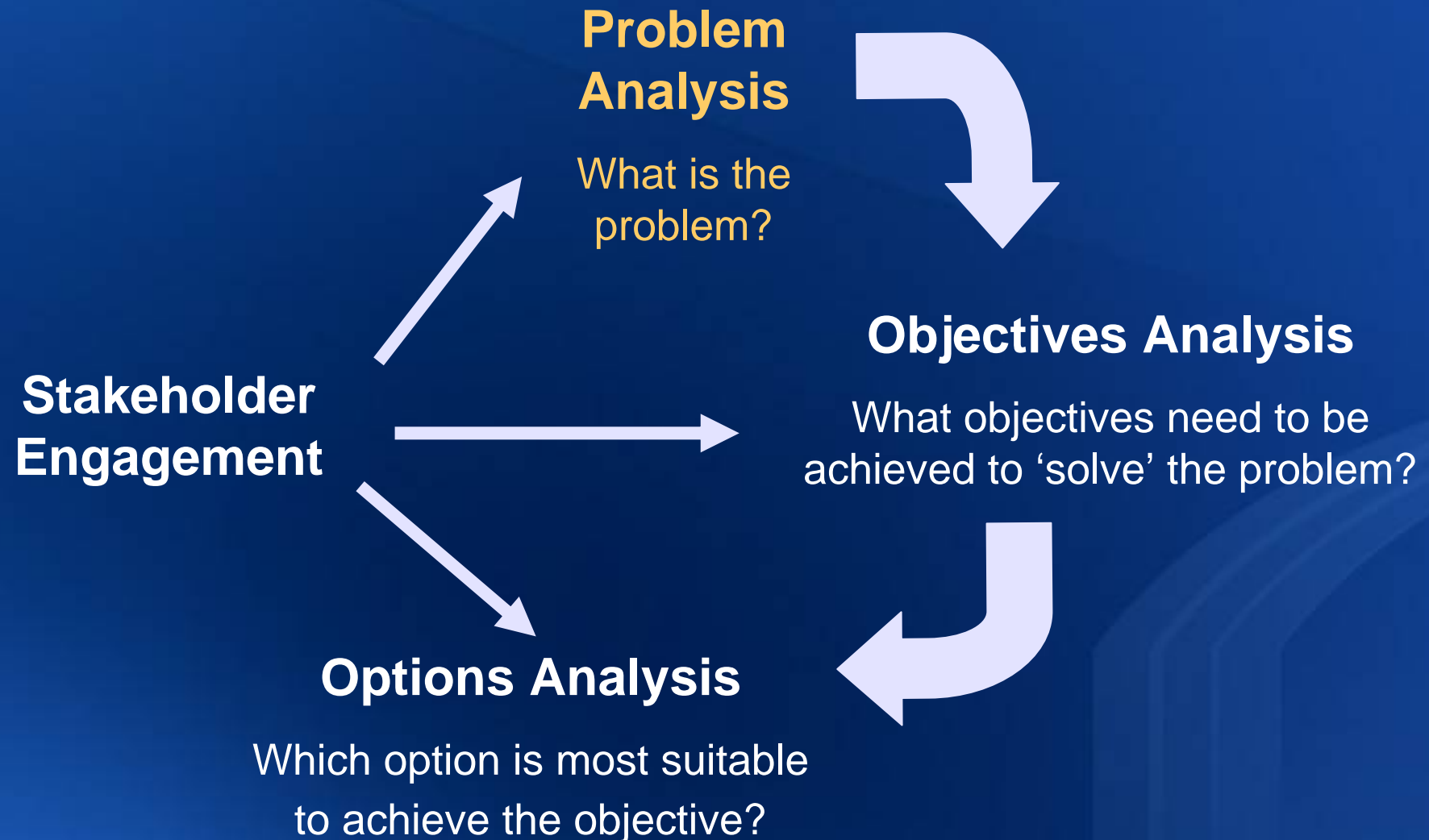
- Enabling policies that discourage/prevent:
 - Inefficient land use
 - Overuse of non-renewable water resources
 - Pollution
 - Environmental damage
 - Poor infrastructure maintenance

Potential solutions to water problems are in most cases well known but have often not been implemented

INECO in Cyprus

- The focal problem:
 - Sea water intrusion and depletion of groundwaters
- Summary of reported effects
 - Degraded groundwater quality
 - Drop of groundwater levels
 - High groundwater exploitation costs & need for alternative water supply sources
 - Higher water service provision costs
 - Lack of strategic reserves to cope with drought
 - Increased vulnerability of the water supply system
- Summary of reported causes
 - Reduced recharge
 - Damming
 - Reduced precipitation
 - Overexploitation of available resources
 - Lack of additional water supply sources
 - Illegal boreholes' operation
 - No monitoring of groundwater abstractions
 - Fragmentation of responsibility between governmental departments
 - Ineffective application of economic instruments
 - Lack of an integrated groundwater management framework

Constructive Engagement



Today's discussion - Themes

- Problem significance
 - Magnitude and Importance of its effects
- What contributes to the problem and how? (Causes)
 - Agreement?
- What is the relative weight of each cause?
- Potential objectives
 - Agreement?
- Alternative solutions, obstacles and constraints

What we hope to achieve

- Today
 - Shared frame of reference
 - Shared goals
- In the next two years
 - Shared design of process to achieve goals
 - Shared understanding of the desired local actions