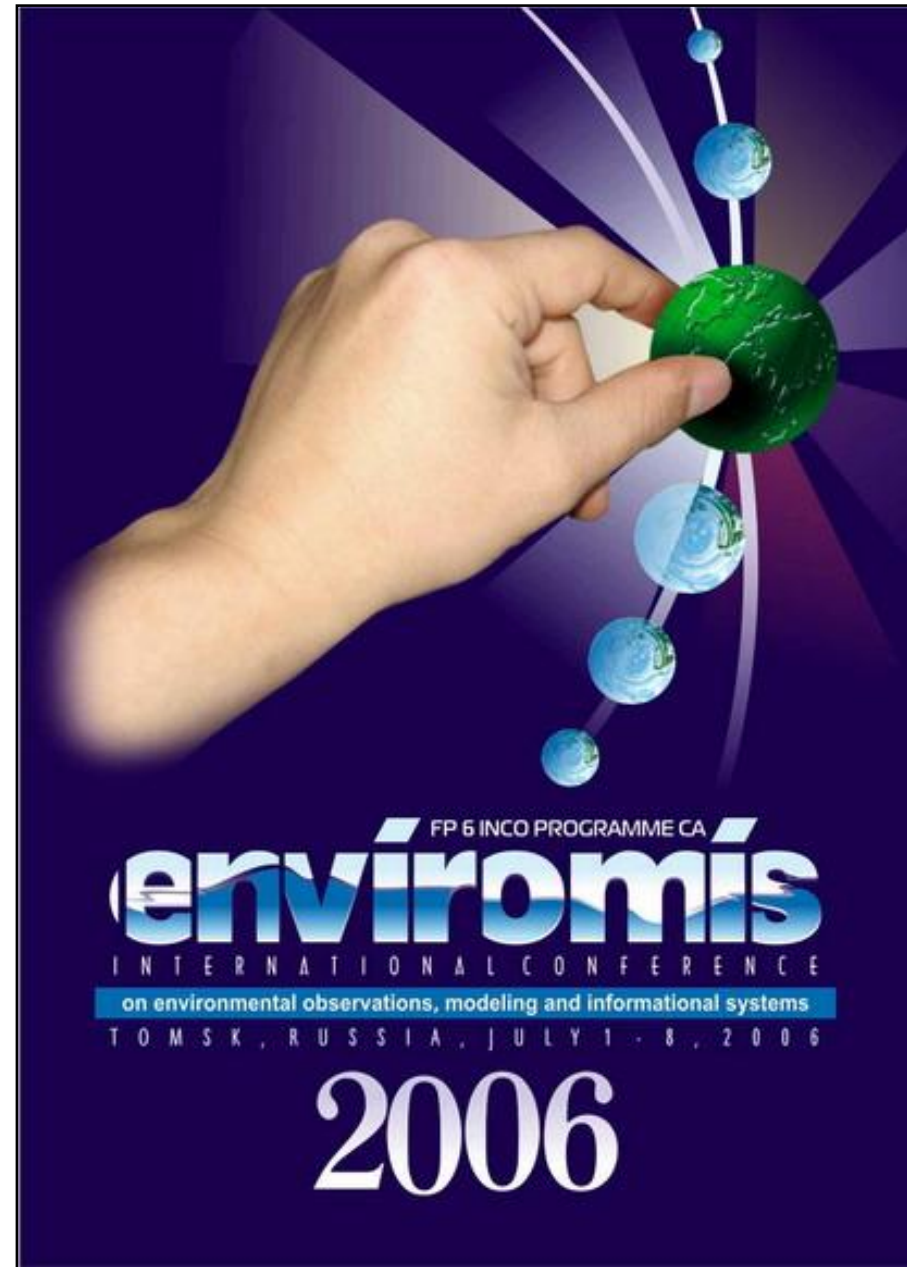# NOSTRUM-DSS concerted action (2004-2007)

Nostrum-Dss
Coordination action 2004-07

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Presented at the ENVIROMIS-2006 International Conference, Tomsk, July 1-8, 2006

Nostrum-Dss
Coordination action 2004-06

Part 1
Background and
current status of the CA

EU Water Initiative

Water for life:

- Over 1 billion people have no access to safe drinking water and over 2 billion lack basic sanitation.

- More commitment and action is needed from everyone to achieve water security – in quantity and quality – for the Earth, its ecosystems and its human inhabitants, today and for future generations;

- **The EU** believes that IWRM with strong public participation, transparency and accountability is a key approach to reaching the targets of the **Millennium Development Goals** and of the World Summit on Sustainable Development: halving those numbers by 2015

EC, 2003

The UN Millennium Summit

Johannesburg, September 2000

- Adoption of the Millennium Development Goals

- Launch of the Millennium Project (2002-05),to recommend the best strategies to achieve the MDGs

- MP to provide an Implementation Plan

UN, 2000

The Millennium Development Goals (MDGs)

UN Millennium Summit

- Development placed at the heart of the global agenda by adopting the MDGs

- 8 MDGs to significantly improve the human conditions by 2015

- For each Goal a set of Target and Indicators have been defined and are used to track the progress in meeting the Goals

6
UN, 2000

Goal 7: Ensure environmental sustainability

Target 10: Halve by 2015 the proportion of people without sustainable access to safe drinking water and sanitation

- Indicator 30: Proportion of population with sustainable access to an improved water source, urban and rural

- Indicator 31: Proportion of population with access to improved sanitation, urban and rural

- …but also Target 9: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.

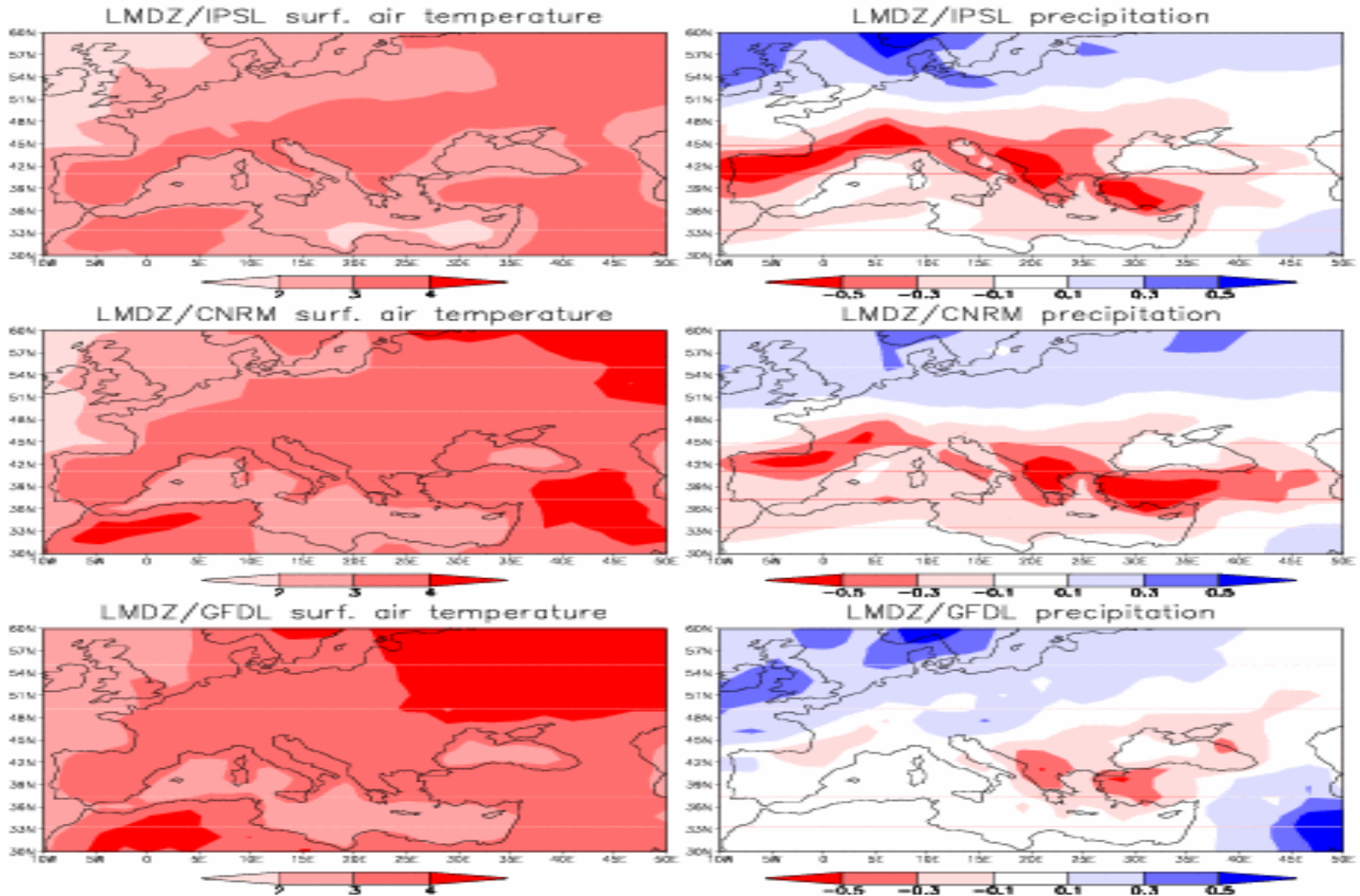UN, 2000

MDGs Implementation Plan

- Aimed at building on the achievements made and at expediting the realisation of the remaining goals;

- Good governance is essential;

- The provision of clean drinking water and adequate sanitation is necessary to protect human health and the environment;

- Poverty eradication (II); Changing unsustainable pattern of consumption and production (III); <u>Protecting and managing the natural resource base of economic and social development (IV)</u>

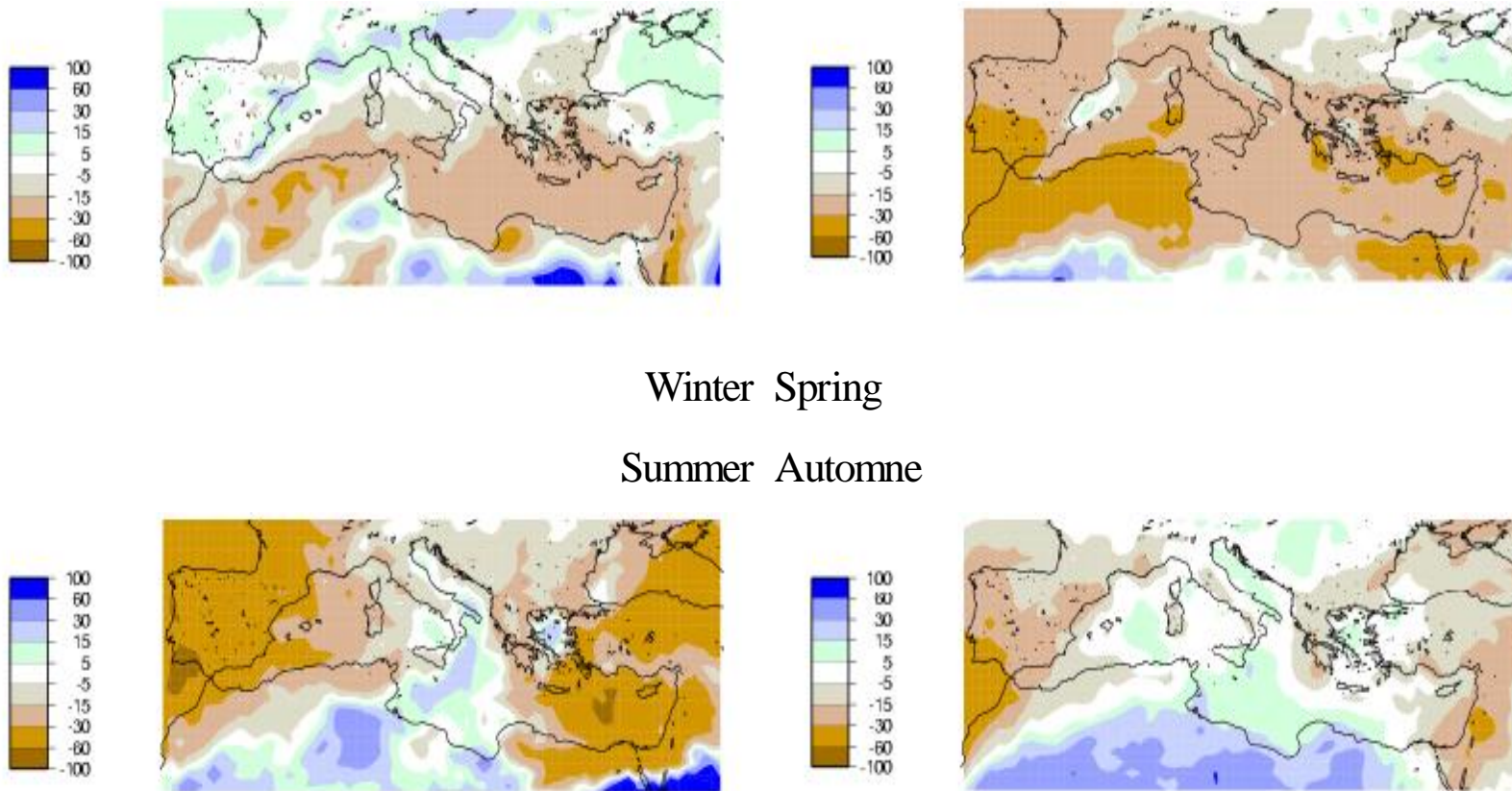UN, 2002

EU International Cooperation

- **EC/INCO** has a particular obligation in its work program to serve the Millennium Development Goals (MDG) and the Implementation Plan decided by Heads of State and Government at the World Summit on Sustainable Development (WSSD) in Johannesburg

2100 - Water resources forecast in the Mediterranean (GICC Medwater project)

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Relative changes of precipitation in Arpege model for 2100
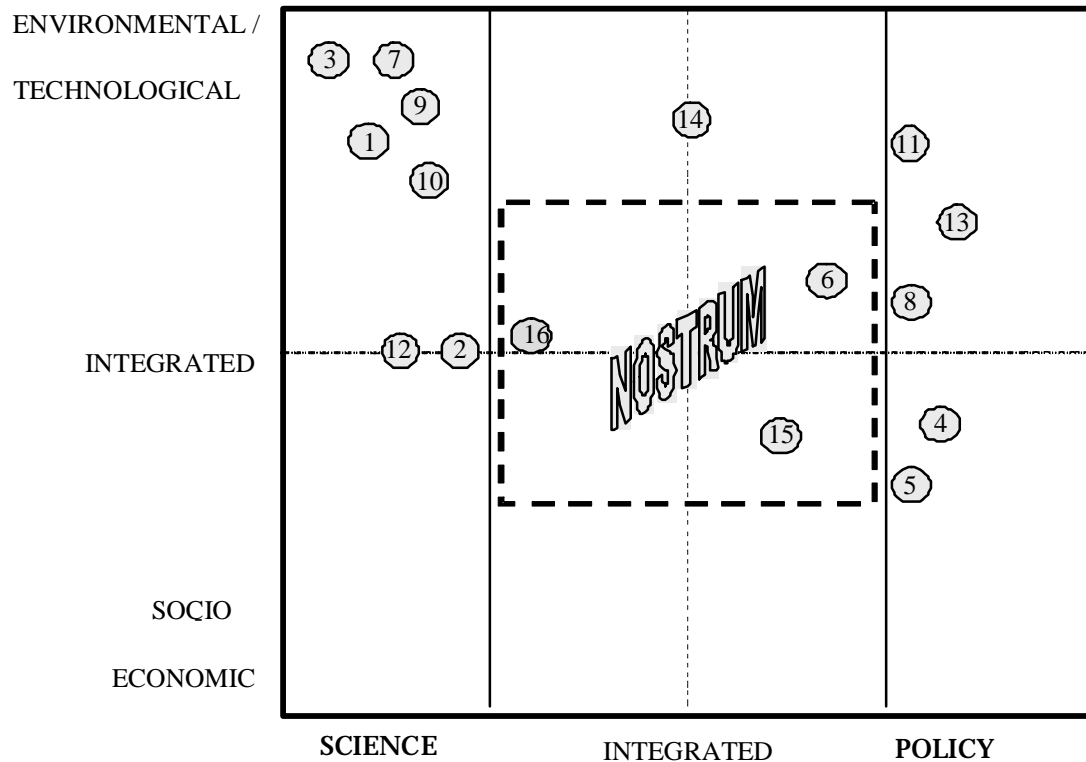
Winter Spring

Summer Automne

NOSTRUM-DSS

Network on gOvernance, Science and Technology for sustainable water ResoUrce management in the Mediterranean. The role of Dss tools.

Pre-existing research

NOSTRUM -Dss in the panorama of Mediterranean projects dealing with WM tools .

ENVIRONMENTAL /

TECHNOLOGICAL

INTEGRATED

SOCIO

ECONOMIC

SCIENCE   INTEGRATED   POLICY

① WAM -ME (ICA3 -CT -1999 -00014)

② **WADI (ICA3 -CT -2000 - 30007)**

③ **LAND WATER MED (ICA3 -CT -2000 - 30008)**

④ MED WATER POLICY (ICA3 -CT -2000 -30002)

⑤ SMART (ICA3 -CT -2002 -10006)

⑥ **MEDCOASTAL -NET (ICA3 -CT -2002 -10002)**

⑦ SWIMED (ICA3 -CT -2002 -10004)

⑧ WADEMED (ICA3 -CT -2002 -10014)

⑨ WATERMED (ICA3 -CT -1999 -00015)

⑩ HORTIMED (ICA3 -CT -1999 -00009)

⑪ WASAMED (ICA3 -CT -2002 -10013)

⑫ MEDAQUA II (ICA3 -CT -2002 -50007)

⑬ **MED REUNET (ICA3 -CT -2002 -50002)**

⑭ **OPTIMISE (ICA3 -CT -2005 -50005)**

⑮ MEDIS (EVK1 -CT -2001 -00092)

⑯ **DEAD SEA BASIN (ICA3- CT2002-10019)**

13

Nostrum-Dss background

The great theoretical potential of Dss tools for helping policy makers to bring the principles of **Integrated Water Resources Management** (IWRM) into practice for managing socio-political conflicts over competing demands for water uses in different environmental situations seems to be not yet exploited.

Nostrum-Dss aims

1. to establish durable links between scientific institutions, governments, NGOs, SMEs and other stakeholders and **improve public awareness on water management**;

2. to **improve scientific knowledge and applied methodologies in IWRM**;

3. to **promote the development of suitable Dss tools built upon real needs of policy making in IWRM**.

Ultimate aim of the CA is to contribute to the achievement of **improved governance and planning in the field of sustainable water management**, by establishing a network …, and through the development and dissemination of **Best Practices Guidelines for the design and implementation of Dss tools for IWRM in the Mediterranean Area**.

Nostrum-Dss partners

Nostrum-Dss Partners

1. Fondazione Eni Enrico Mattei, FEEM, Italy
2. International Centre for Science and High Technology, ICS-UNIDO, International
3. Ensino, Investigação e Administração S.A./Universidade Atlântica, EIA/UATLA, Portugal
4. National Centre for Remote Sensing (of the National Council for Scientific Research), NCSR, Lebanon
5. Centre for Environment & Development for the Arab Region & Europe, CEDARE, Egypt
6. Laboratory of Radio-Analysis and Environment of National Engineer School of Sfax, LRAE, Tunisia
7. National Technical University of Athens, NTUA, Greece
8. Centre National de la Recherche Scientifique, CNRS, France
9. Dokuz Eylul University, Water Resources Management Research and Application Center, SUMER, Turkey
10. Centro Interdipartimentale IDEAS/CESD University of Venice, IDEAS/CESD, Italy
11. Informatics and Telematics Institute / Centre for Research and Technology, ITI/CERTH, Greece
12. Agricultural Research Institute, ARI, Cyprus
13. MEDIAS France, France
14. Fundatia pentru Tehnologia Informatiei Aplicta in Mediu Agricultura si Schimbari Globale, TIAMASG, Romania
15. Universidad Politecnica de Madrid, UPM, Spain
16. Association de Recerce sur le Climat et l'Environment, ARCE, Algeria
17. Priority Actions Programme/Regional Activity Centre, PAP/RAC, Croatia
18. Centre International de Hautes Etudes Agronomiques Mediterraneennes, Istituto Agronomico Mediterraneo of Bari, CIHEAM-IAMB, Italy

Nostrum-Dss
Coordination action 2004-06

Part 2
Decision Support Systems, what they are and what is their role for the CA
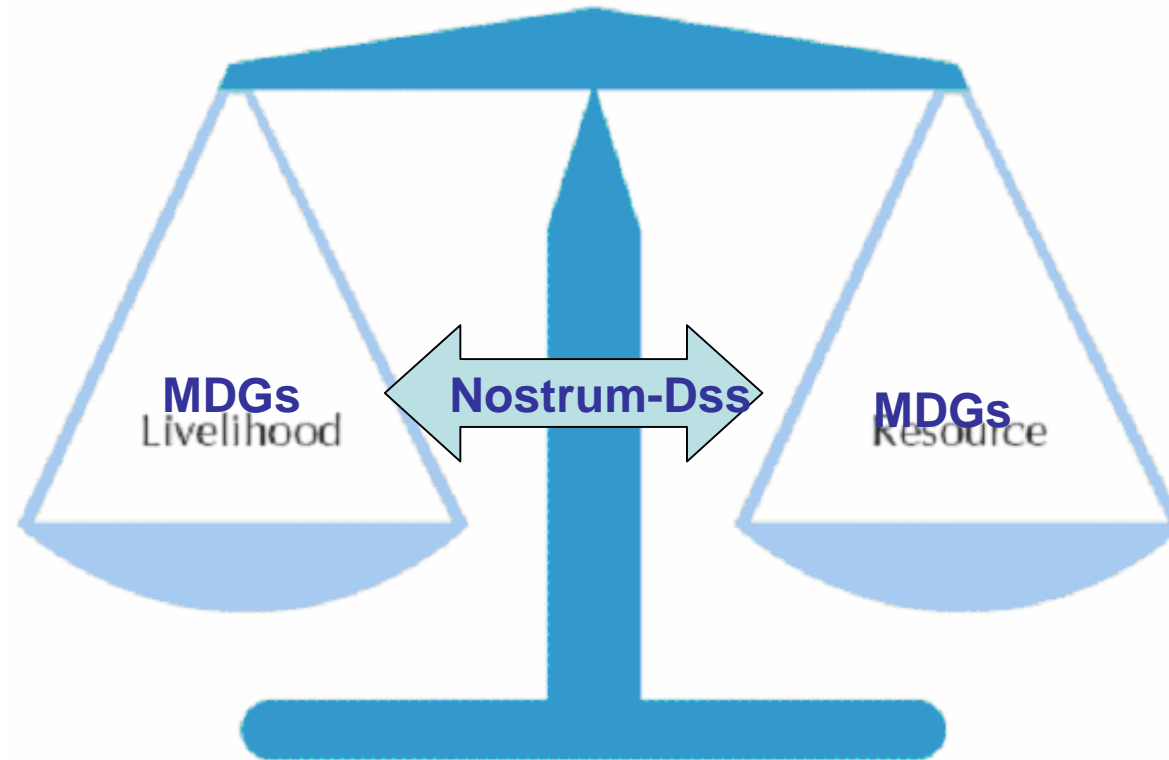
18

Integrated Water Resources Management

- **IWRM** is a process which promotes the co-ordinated development and 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.
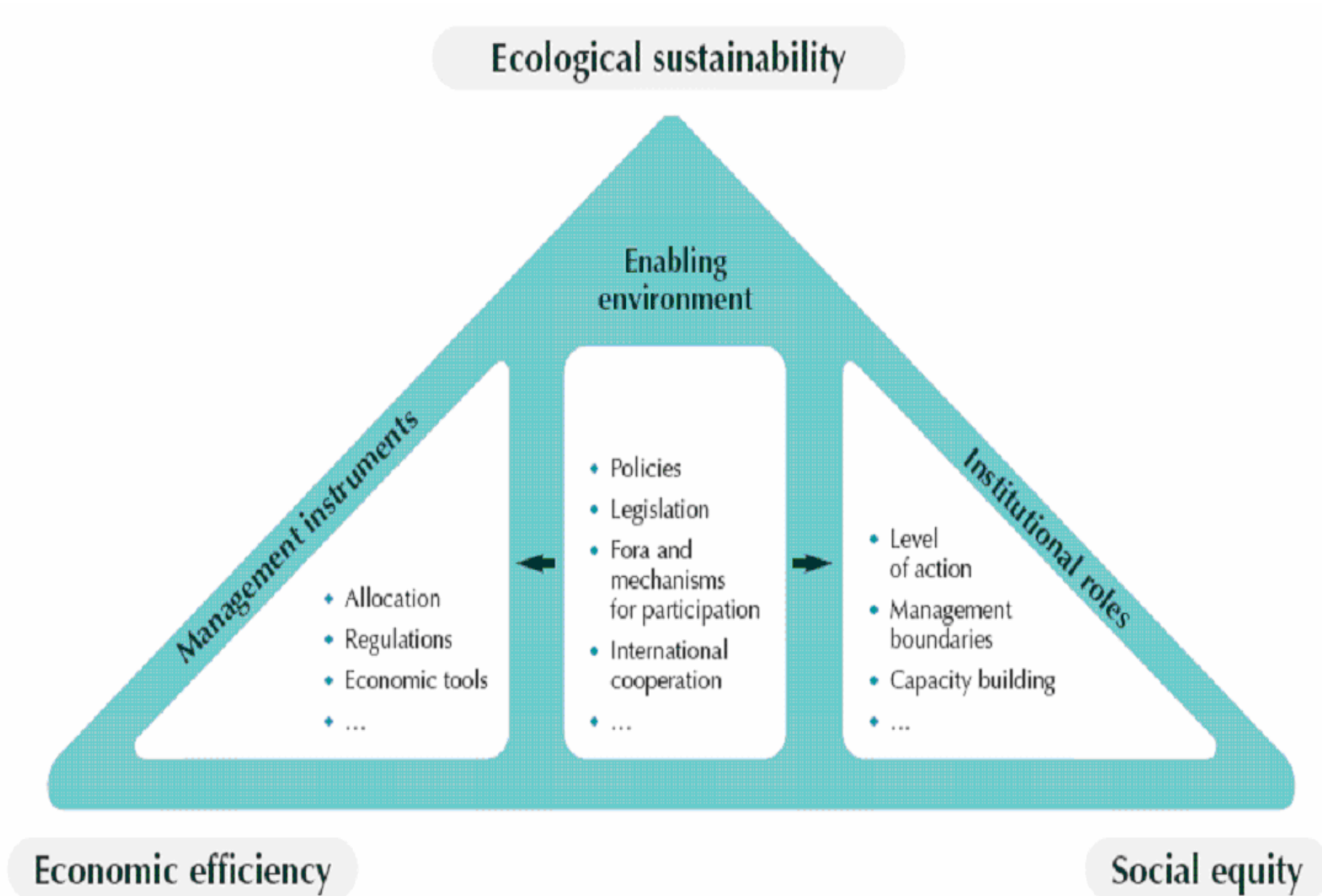
Ø *IWRM practices depend on context*

The main challenge of IWRM

To strike a balance between the use of the resources as a basis for the **livelihood of the world's increasing population** and the **protection and conservation of the resource** to *sustain its functions and characteristics*

GWP-TAC, 2000

General Framework for IWRM

Ecological sustainability

Enabling environment

Management instruments
- Allocation
- Regulations
- Economic tools
- ...

- Policies
- Legislation
- Fora and mechanisms for participation
- International cooperation
- ...

Institutional roles
- Level of action
- Management boundaries
- Capacity building
- ...

Economic efficiency

Social equity

GWP-TAC, 2000

Decision Support Systems (DSS)

- computerised systems assisting to deal with a semi- or unstructured problems

  (Gorry and Scott Morton, 1971)

- any system supporting decision making

  (Power, 1997)

- Dss combines aspects of information and modelling systems, suits users who are not necessarily experts in modelling or data analysis, converts policy and management decisions automatically to suitable model runs and data analyses, allows the outcomes of such decisions to be compared, and perhaps even gives advices on the optimal decision to be made

  (Fortune (HarmonIT, 2004)

DSS contributions to IWRM

- The use of DSS tools can contribute to reducing the risk of misinterpreting the complexity of decision problems by focusing only on a small set of criteria and ignoring some other relevant problem aspects.

- They may help the processing of large amounts of data and the elaboration of data into the information and knowledge required to make transparent and well-informed decisions.

- They can also facilitate the participation of stakeholders in the decision making process.

- They are tools which need to provide bridges between the general framework of international agreements and commitments, … and the specific local/national concerns which drive local agendas

DPSIR - An integrated framework for Dss and IWRM

- **DPSIR** is a general framework for organizing information about state of the environment and sustainable development.
- The framework assumes cause-effect relationships between interacting components of social, economic, and environmental systems, which are
  - **Driving forces** of environmental change (*human activities*)
  - **Pressures** on the environment (*freshwater withdrawal*)
  - **State** of the environment (*freshwater resources*)
  - **Impacts** on population, economy, ecosystems (*water scarcity*)
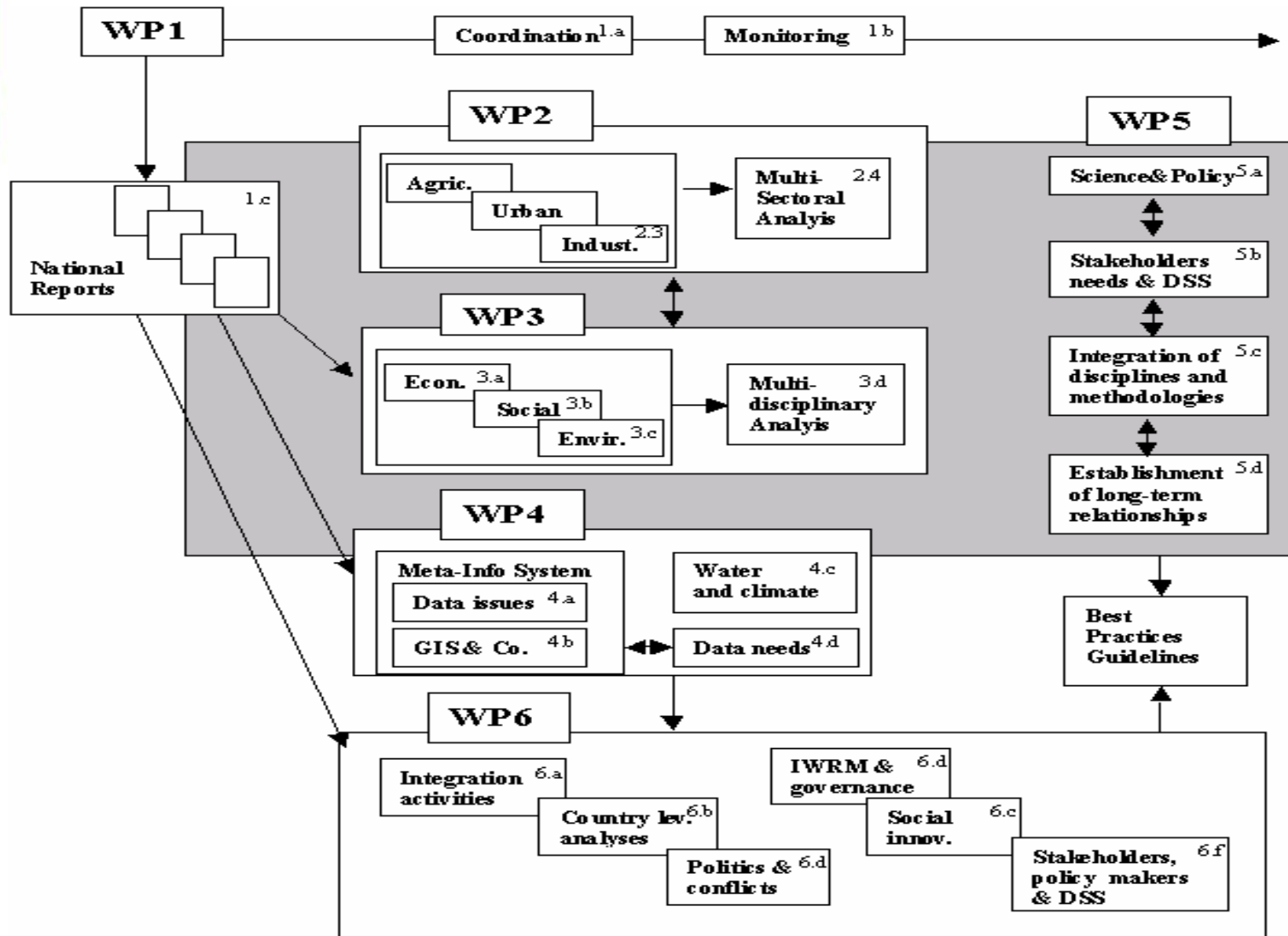 - **Response** of the society (*new water policies, new production systems, new management systems*)

24

Nostrum-Dss
Coordination action 2004-07

Part 3:

Brief overview of the CA

EU Coordination Actions

- Co-ordination actions (CA) **are intended to promote and support the co-ordinated initiatives of a range of research and innovation operators, in order to achieve improved integration of the European research.**

- **Co-ordination actions do not support research and development activities per se. The research and innovation activities themselves should be funded from other sources**,

- **Their objective is networking or co-ordination of activities** and not the lasting integration of the research capacities of the organisations involved.

- Co-ordination actions can be used in **all the activities** of the Sixth Framework Programme.

Project flow chart

Nostrum-Dss CONCLUSIONS

The Nostrum-Dss CA is not an objective in itself.

<u>In short</u>, our final objectives are:

• To set up a long term efficient network for IRWM in the Mediterranean basin

• To convince all stakeholders and in particular policy and decision makers to make a proper use of Dss tools.

LET US SAVE WATER !

THANK YOU FOR YOUR ATTENTION