

# *Thank you for your attention!*



University of Cyprus



National Technical

University of Athens, Greece



University of Catania,

Italy



Institut Agronomique et Vétérinaire Hasan II,

Morocco



Confederación Hidrográfica del Tajo; Canal

de Isabel II; Fundación Ecología y Desarrollo; Mediterranean

Agronomic Institute of Zaragoza; Universidad Politécnica de

Madrid, Spain



Direction Générale des Barrages et des

Grands Travaux Hydrauliques, Ministère de l'Agriculture,

Tunisia

[www.iamz.ciheam.org/medroplan](http://www.iamz.ciheam.org/medroplan)

[ana.iglesias@upm.es](mailto:ana.iglesias@upm.es)

## Challenge:

- To produce technical documents that are easily understood by the non-technical audience and help stakeholders in taking decisions



European Commission - EuropeAid Co-operation Office  
Euro-Mediterranean Regional Programme For Local Water Management (MEDA Water)  
Mediterranean Drought Preparedness and Mitigation Planning (MEDROPLAN)

# Drought Management Guidelines

## Editors:

A. Iglesias, A. Cancelliere, D. Gabiña, A. López-Francos, M. Moneo, G. Rossi

## Authors:

A. Iglesias, T. Ameziane,  
S. Benbeniste, M. Bergaoui, B. Bonaccorso, A. Cancelliere,  
M. Casado, T. Christofides, F. Cubillo, L. Euchi, M. Fernández,  
F. Flores, D. Gabiña, A. Garrido, L. Garrote, S. Hajispyrou, E. Keravnou-Papailiou,  
P. Laban, A. Lapeña, F. Lebdi, G. Liebana, A. López-Francos,  
M.H. Louati, M. Mathlouthi, H.J. Mellouli, M. Moneo,  
A. Ouassou, D. Pangalou, P. Pashardes, S. Quiroga, G. Rossi,  
N. Rostandi, D. Saracoglu, M. Soriano, D. Tigkas, G. Tsakiris,  
N. Tsiourtis, C. Vangelis, V. Viñuales



# The Guidelines .....

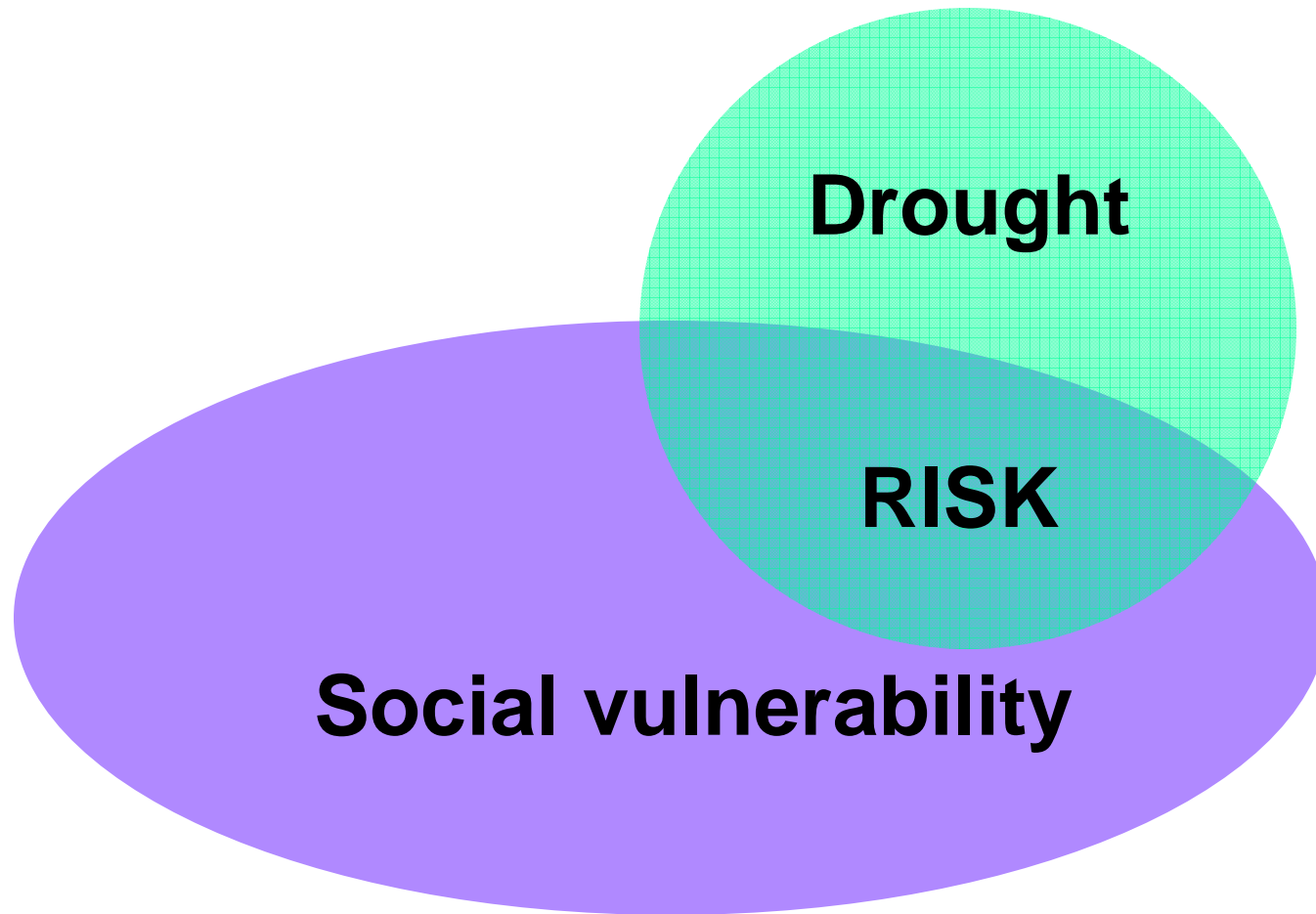
- ***Are based*** on the broad experience technical knowledge about drought management in the Mediterranean region
- ***.... are*** a complement, a flexible product that allow incorporation of different criteria
- ***... are not*** a solution to eliminate drought
- ***Help formulate drought management plans*** based on risk management and not crisis management

## Using the Guidelines by stakeholders

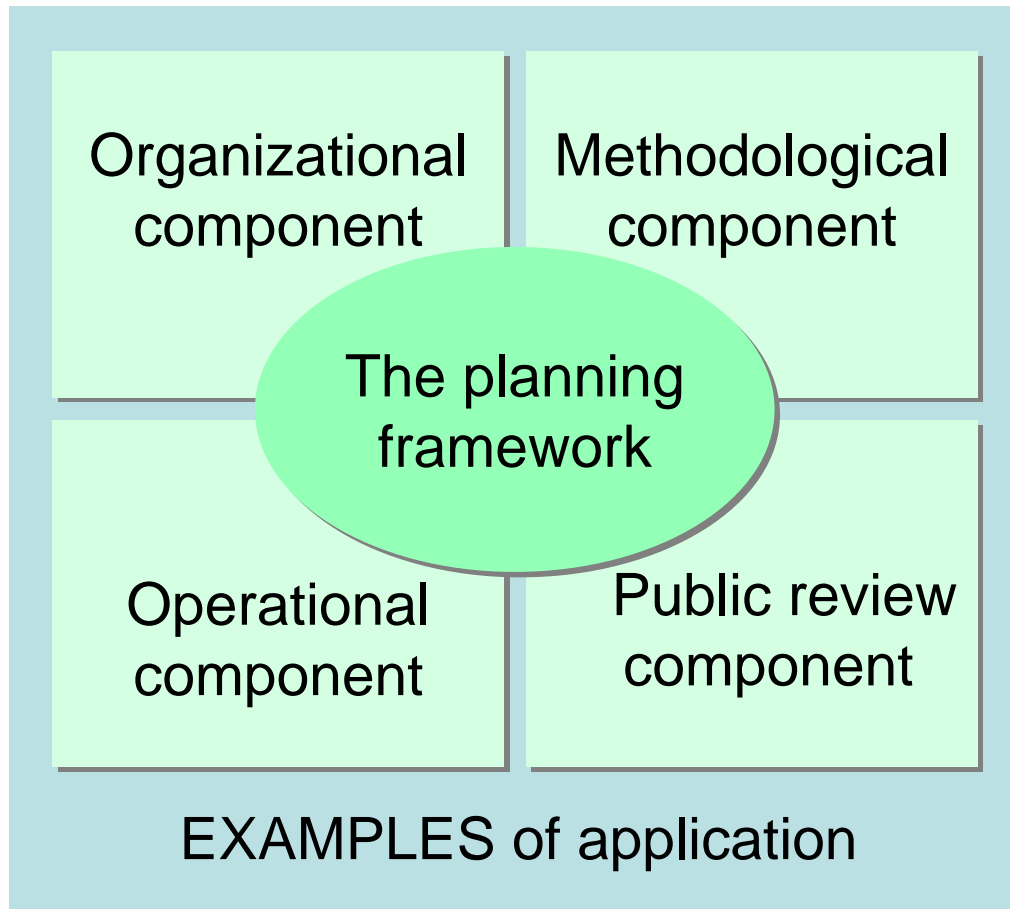
- The “Technical Report on Water Scarcity and Drought Management in the Mediterranean and the EU Water Framework Directive” has included the MEDROPLAN Guidelines as an element for drought planning
  - “The Mediterranean Water Scarcity and Drought Report” prepared by the Mediterranean Water Scarcity and Drought Working Group, March 2007
- Other stakeholder groups are evaluating the Guidelines to include their protocol into the planning process

# The impact of drought depends on the social vulnerability ...

- 800 million people suffer malnutrition
- 1,3 billion people live without safe drinking water; 2 billion without sanitation

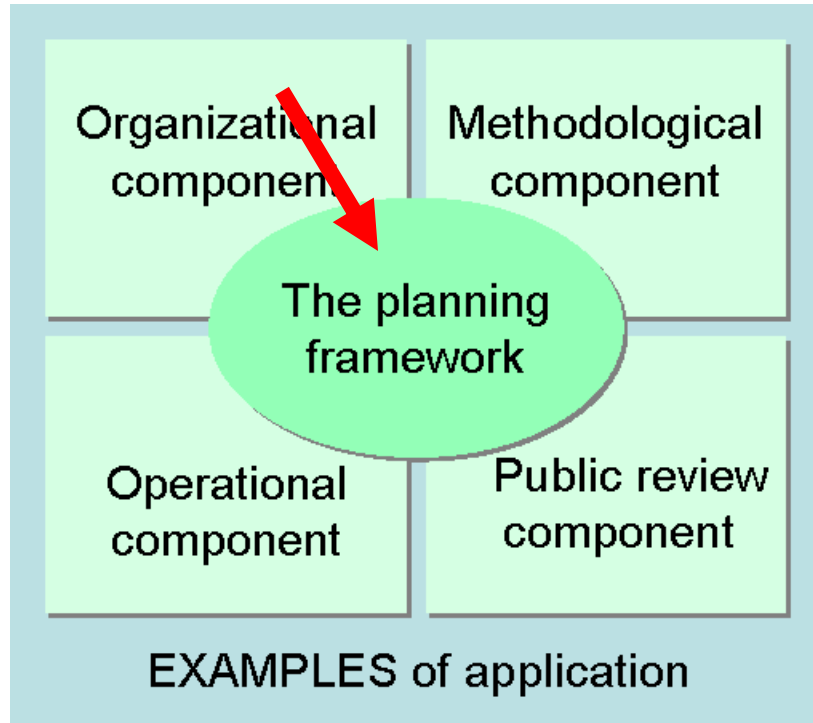


# Components of the Guidelines

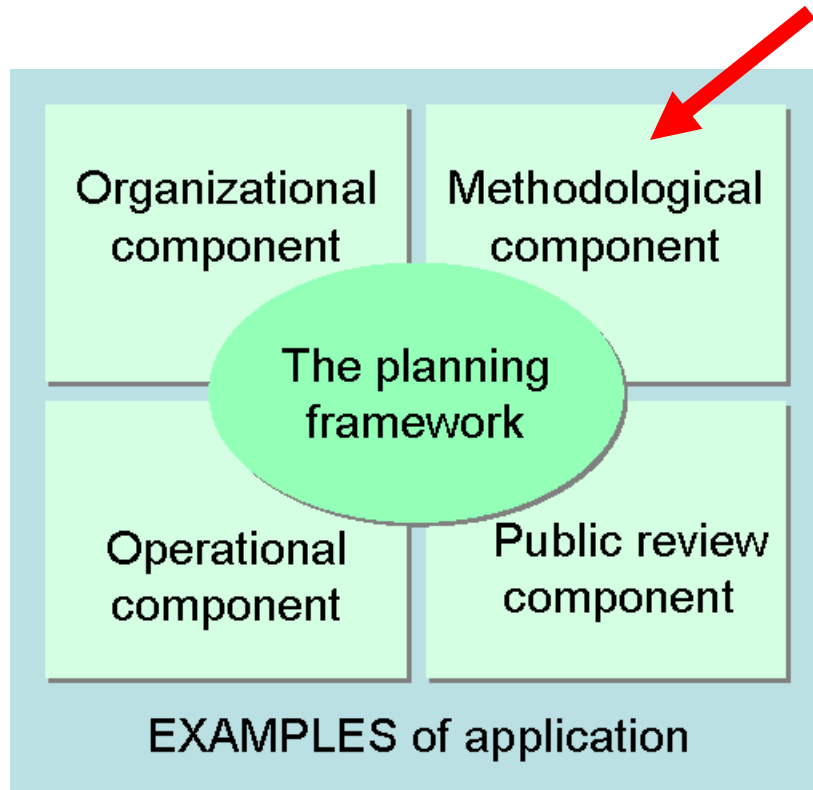


The guidelines are translated into Arabic, English, French, Greek, Italian, Spanish



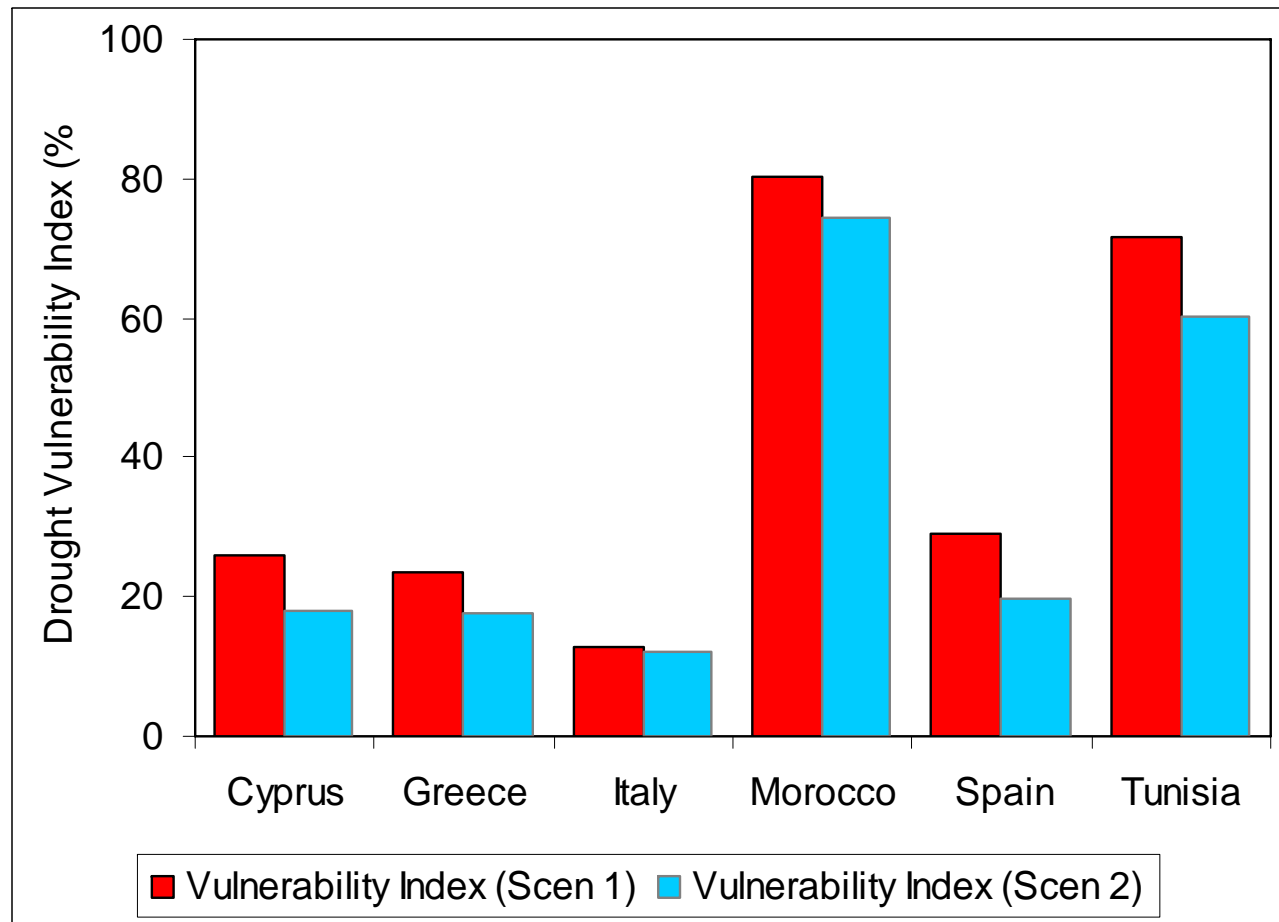


- Defines the local, regional and national **purpose** for developing drought plans
- Highlights the **dynamic processes** of the environment and society
- Key issues:
  - Concepts
  - Dialogue among stakeholders
  - Analysis of challenges and opportunities



- Defines the **technical approach** to link drought and management actions
- This includes:
  - Drought characterisation
  - Risk and vulnerability analysis (diagnostic)
  - Data, models, and tools

# Drought Vulnerability Index

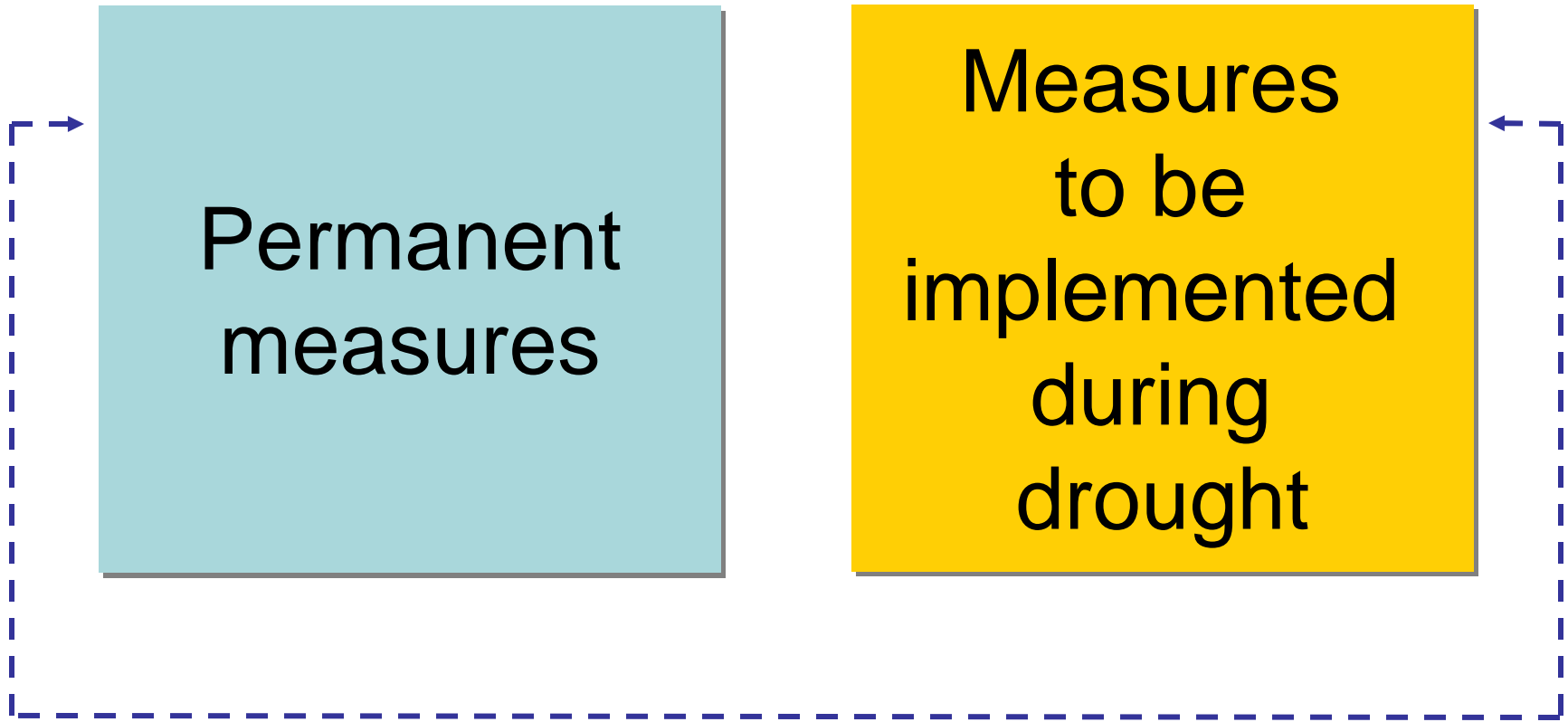


**Scen 1** All components weighted equally

**Scen 2** Human and civic resources more important

# Operational component

Defines strategies to adopt drought management actions



# Drought levels & Measures

## PRE-ALERT

- Low cost, indirect, **voluntary**
- Non structural directed avoid worse situations
- Focus on communication
- Intensification of monitoring

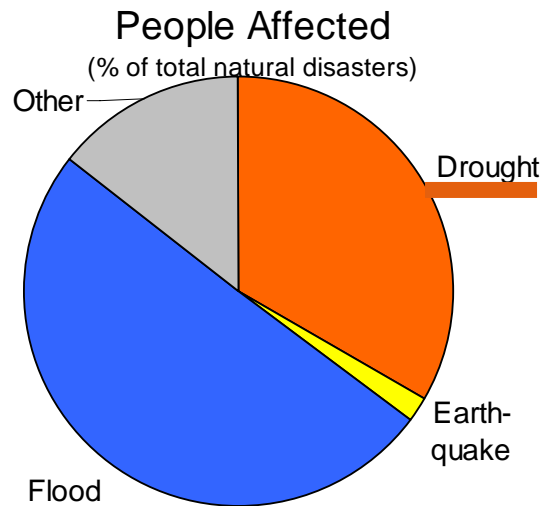
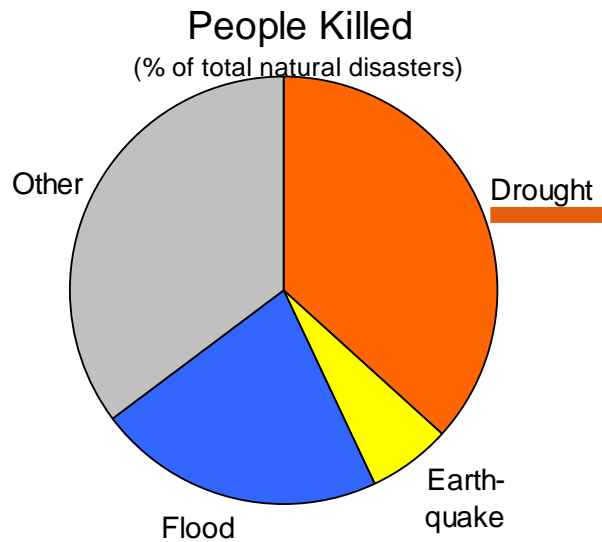
## ALERT

- Low cost, direct, **coercive**
- Non structural directed to specific groups
- Water restrictions except for drinking
- Changes in management, revision of tariffs, rights exchanges

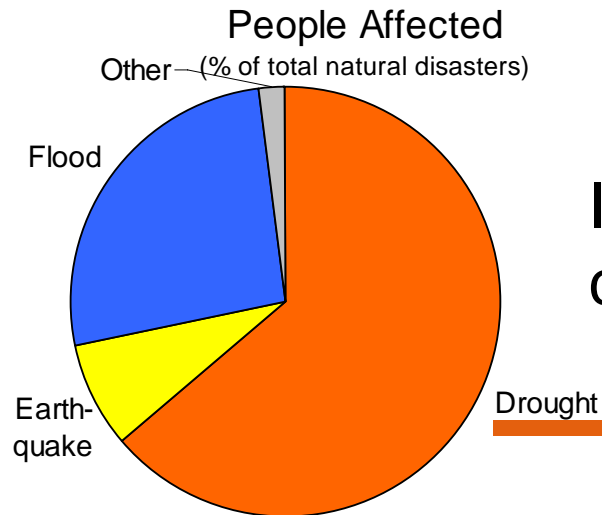
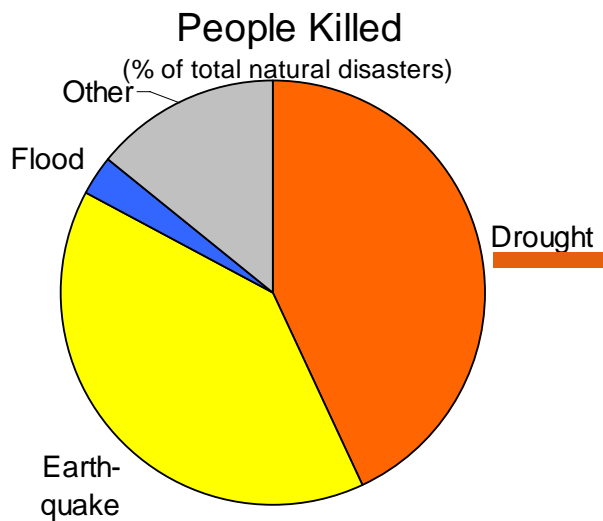
## EMERGENCY

- High cost, direct, **restrictive**
- Structural, new infrastructure, water transfers
- Non structural, new groundwater abstraction
- Water restrictions for all users

# Natural disasters (1996-2006)



In the world



In Mediterranean countries



# Moving forward ...

- Proposal for development of a Multilateral Environmental Agreement (MEA)
  - agreement between more than two countries to take certain steps to protect environment or conserve natural resources
- Hard MEA: binding (conventions, protocols, etc. i.e., UNFCCC, 1992)
- Soft MEA: non-binding, do not require ratification (i.e., Rio Declaration, 1992)
  - Rules of international law that do not stipulate concrete rights or obligations
  - Description of those values, guidelines, ideas and proposals that may develop into rules of international law but have not yet done so

***Thank you for your attention!***

**ana.iglesias@upm.es**

