

# Guidelines for drought management

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*Thank you for your attention!*

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



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Confederación Hidrográfica del Tajo; Canal

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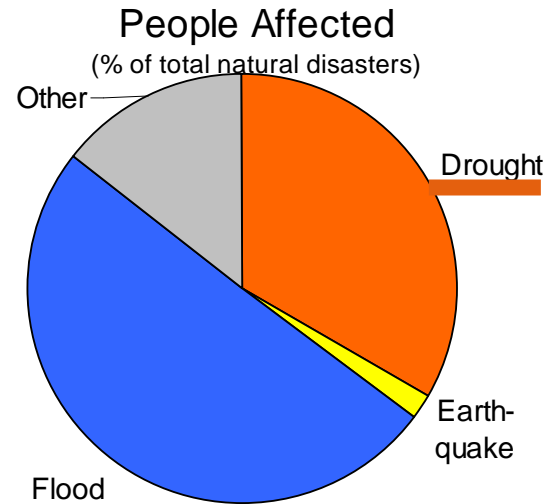
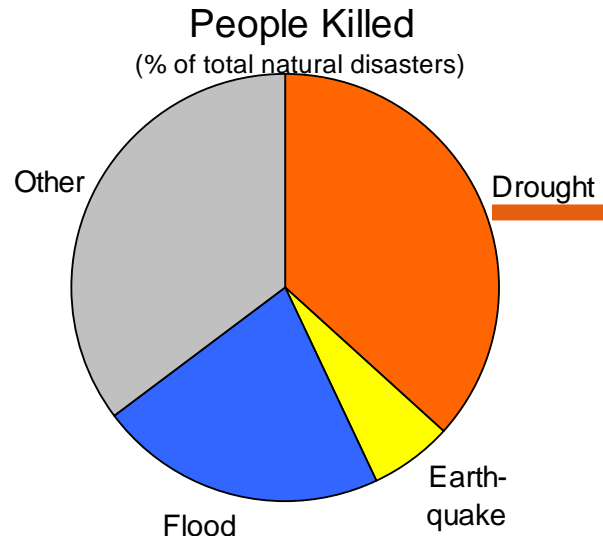
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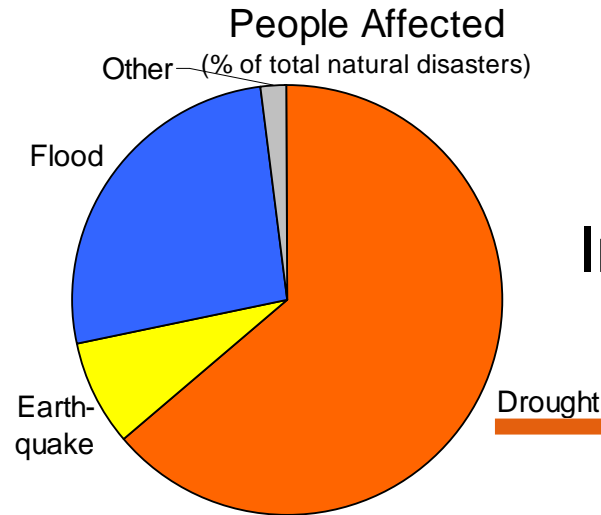
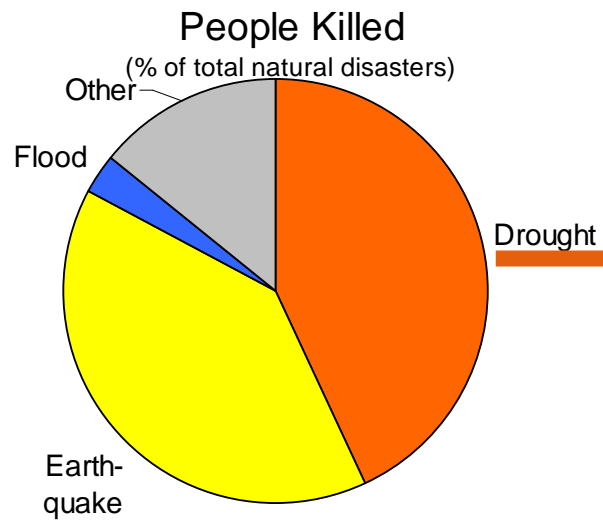
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# Natural disasters ...



In the World



In the Mediterranean



# A range of phenomena

Water Scarcity Regime
Temporary
Permanent



**Drought** Natural temporary  
lower-than-average

**Water shortage** Man

**Aridity** Natural permanent  
average annual precipitation

**Desertification** Man  
of water (inappropriate land use).

# Content

1. **The MEDROPLAN project's objective: Guidelines for drought management**
2. What are the Guidelines and what are not the Guidelines?





# Mediterranean Drought Preparedness and Mitigation Planning (MEDROPLAN)

Europe Aid Cooperation Office, MEDA WATER Programme  
Contract number: ME8/AIDCO/2001/0515/59770 - P 027

## Objectives

- 1 Develop Guidelines for Drought Preparedness Plans
- 2 Set up a Drought Preparedness Network for the Mediterranean countries

## Partners

-  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; Universidad Politécnica de Madrid, Spain
-  Direction Générale des Barrages et des Grands Travaux Hydrauliques, Ministère de l'Agriculture, Tunisia

## Coordination

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<http://www.iamz.ciheam.org/medroplan>



# Contents

1. The MEDROPLAN project's objective:  
Guidelines for drought management
2. **What are the Guidelines and what are not the Guidelines?**



# The Guidelines .....

- ***Help formulate drought management plans*** based on risk management approach and not a reactive crisis approach
- ***Are based*** on extensive experience and knowledge in the Mediterranean region
- ***..... are not*** a magic tool to avoid drought





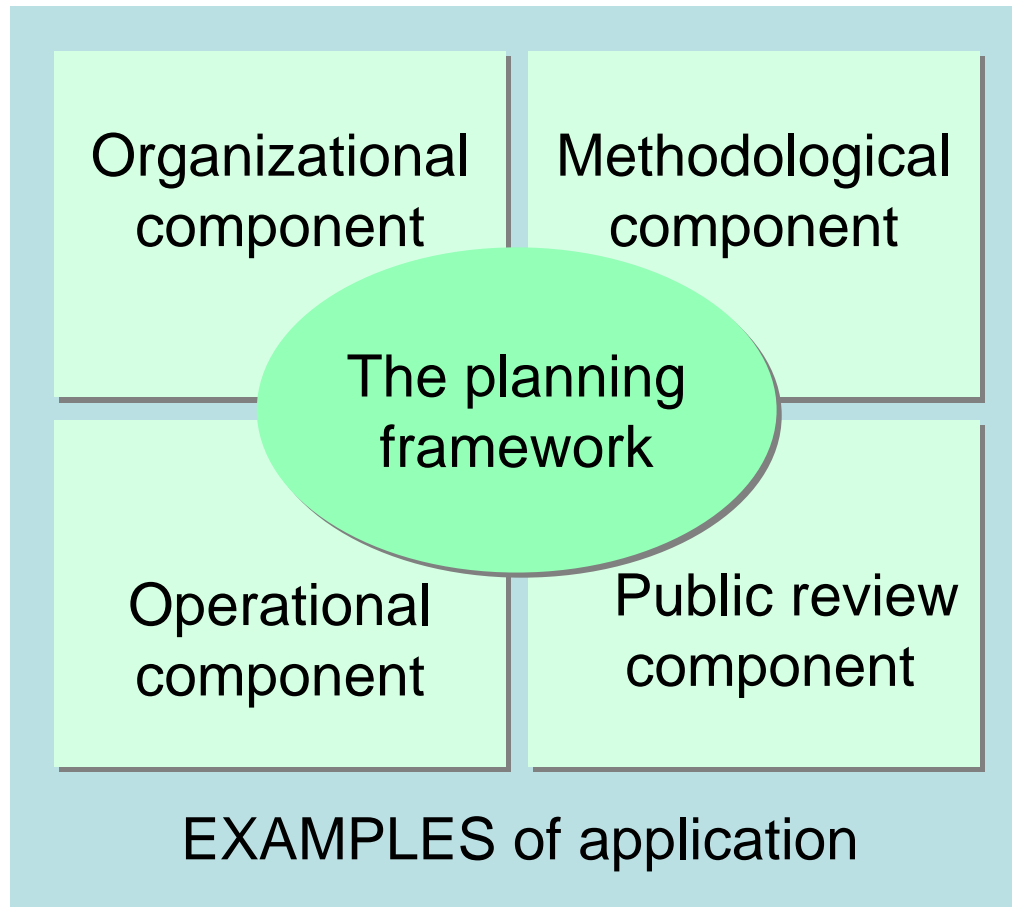


# Drought Management Plans

**Actions taken by individuals, industry, governments and others before the occurrence of a drought to minimize the potential effects and conflicts**



# Components of the Guidelines



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



# Analytical methods

**Risk =**

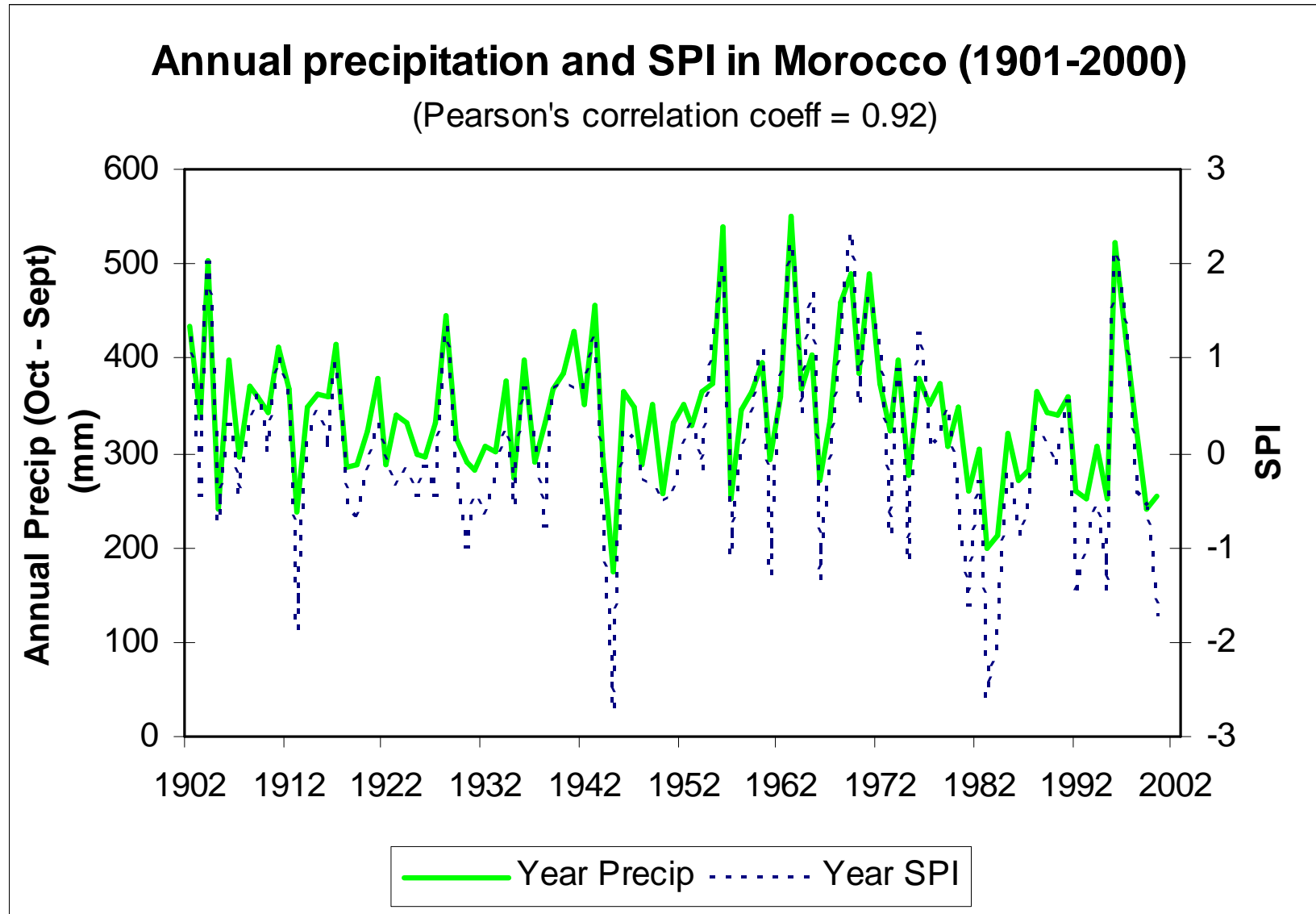
**Hazard X Vulnerability**

HAZARD = Probability of occurrence

VULNERABILITY = Internal characteristics that define the ability to suffer from a hazard

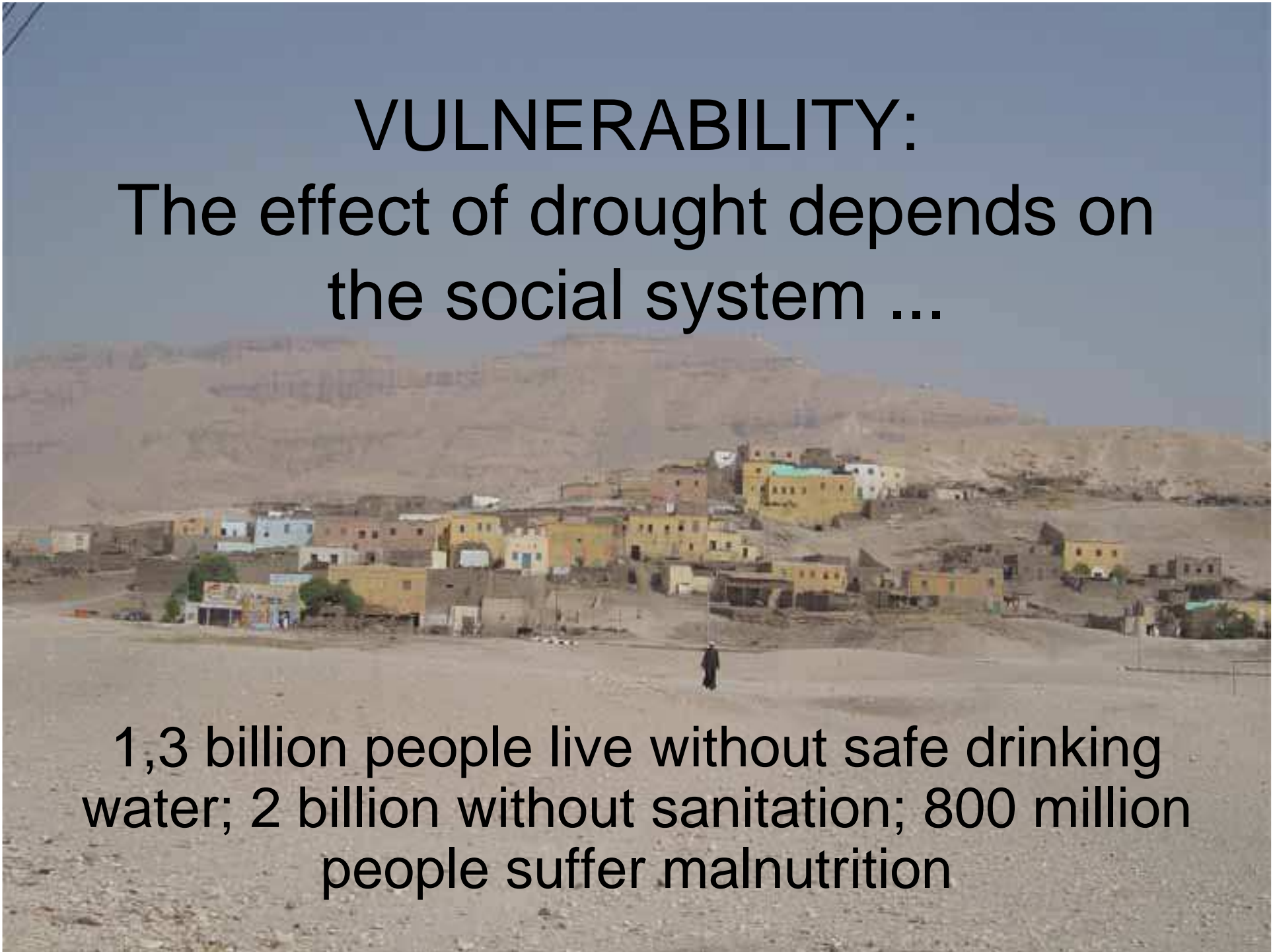


# Drought hazard



# VULNERABILITY: The effect of drought depends on the social system ...

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

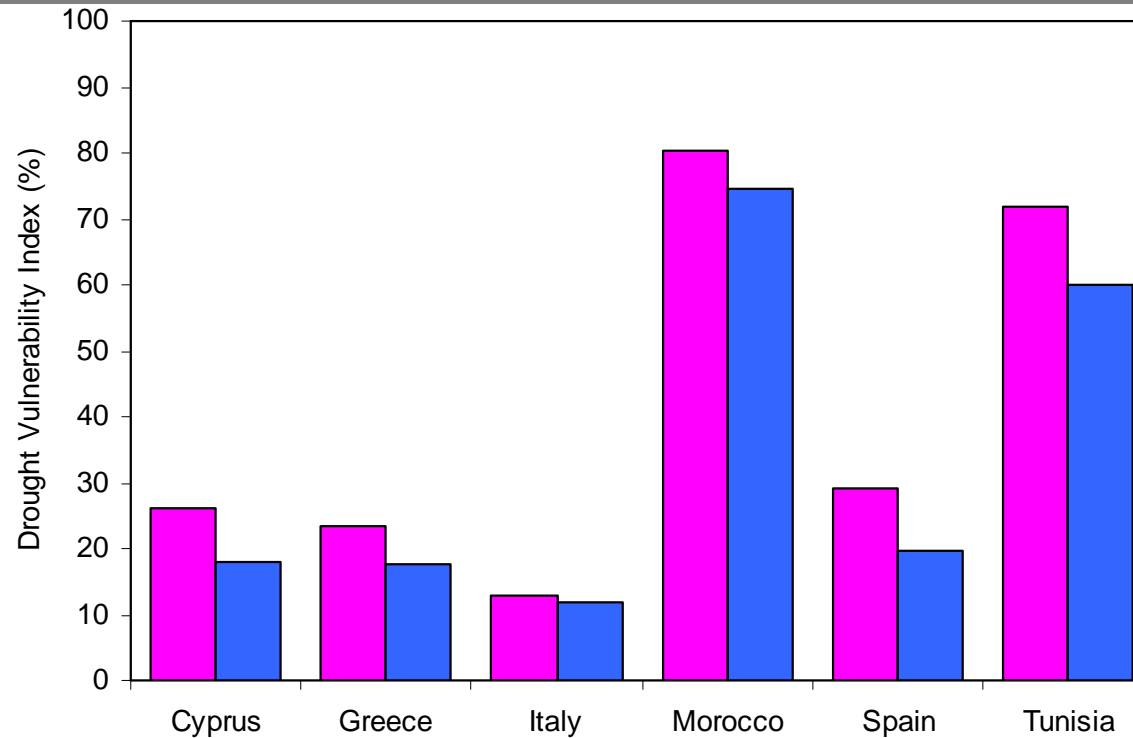


# Drought Vulnerability Index (Iglesias et al., 2006)

<b>Component</b>	<b>Indicators</b>
Human capital	% literacy rate; % Population with elementary, secondary, and tertiary degree; % Rural population
Economic development	% of GDP from agriculture/GDP per capita Life expectancy at birth % Access to drinkable water
Mechanisms of risk sharing	Insurance Agricultural policies
Institutional response	Drought regulations; Drought management plans; Institutional drought agencies; Access to financial services
Environmental aspects	Soil degradation
Agricultural aspects	Cultivation techniques; Crop varieties

# Drought vulnerability Index

DATA: FAO, UN, World Bank

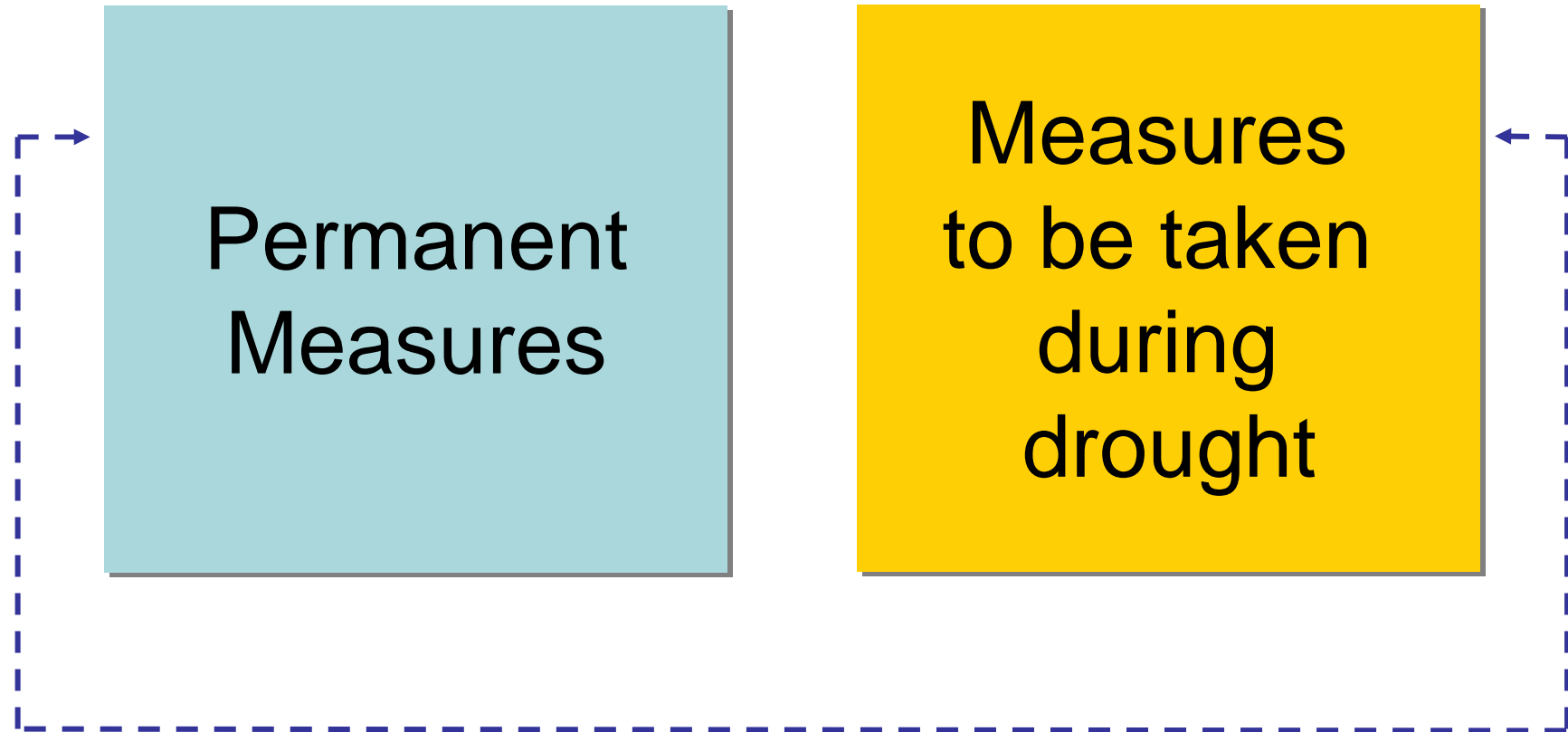


**Scenario 1: All components weighted equally**

**Scenario 2: Human and civic resources more important**



# Operational Component





# PRE-ALERT actions

- Low cost, indirect, voluntary
- Non structural
- Directed to avoid worse situations
- Focus on communication





# Who loves life does not waste water



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non spreca l'acqua



# ALERT actions

- Overcome drought without reaching the emergency stage
- Examples:
  - Changes in management
  - Revision of tariffs
  - Rights Exchanging Centres



# EMERGENCY actions

- Minimise impacts and reduce damage





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