

النظام الأوروبي-مديتيراني  
للإعلام حول المعرفة  
في مجال المياه

# Water Scarcity Moroccan Experience

**Mr. Ahmed SKIM**

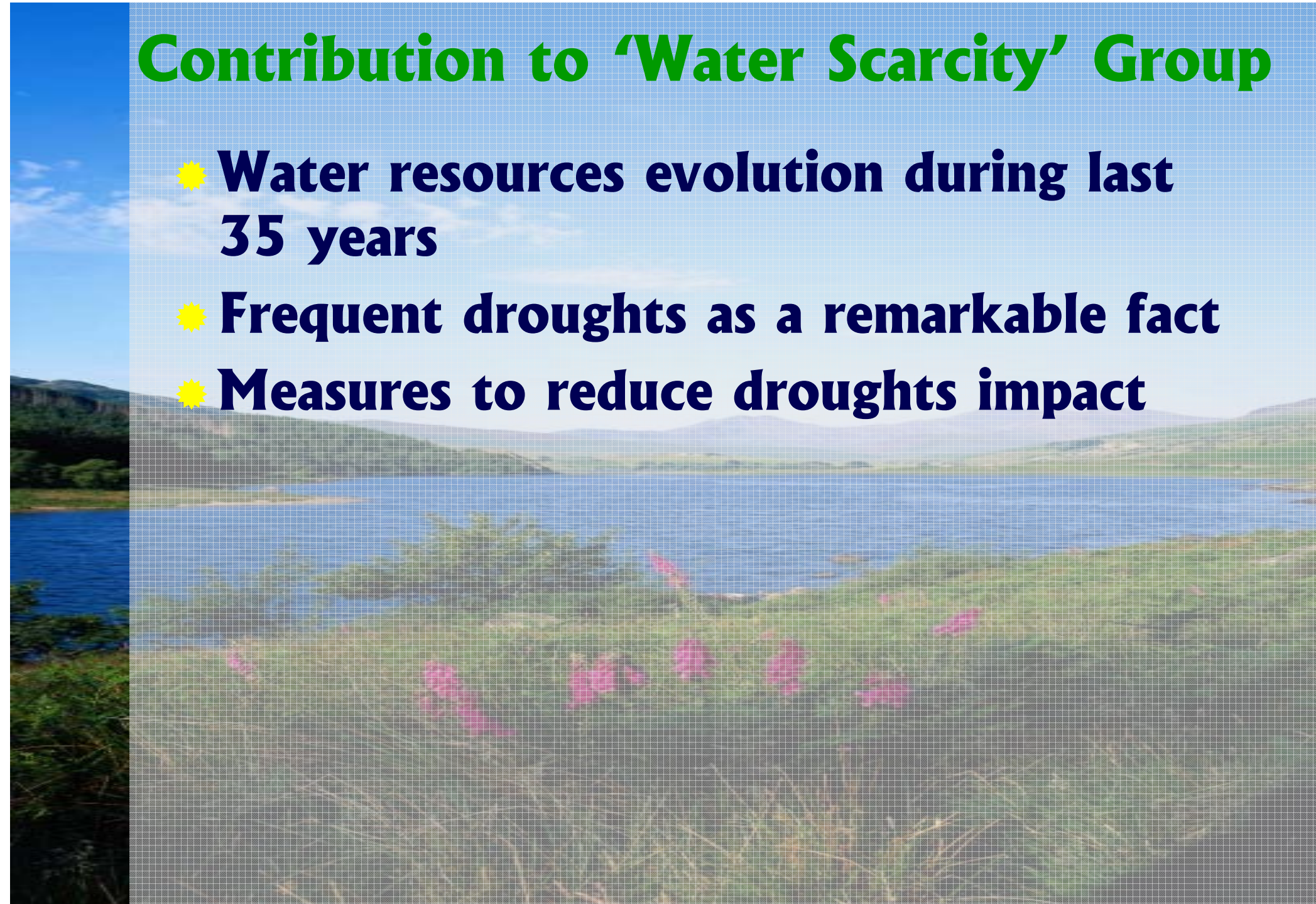
**Secretary of State in charge of Water**



**Nicosia May 10th 2007**

# Contribution to 'Water Scarcity' Group

- ☀ **Water resources evolution during last 35 years**
- ☀ **Frequent droughts as a remarkable fact**
- ☀ **Measures to reduce droughts impact**

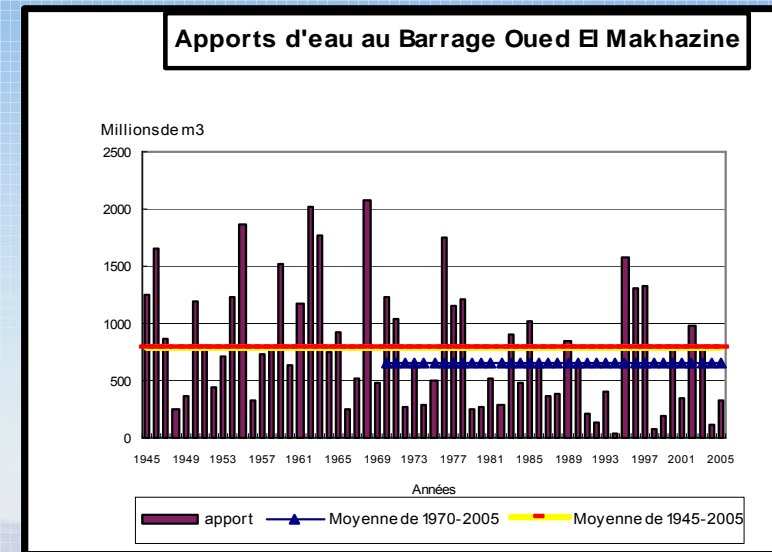
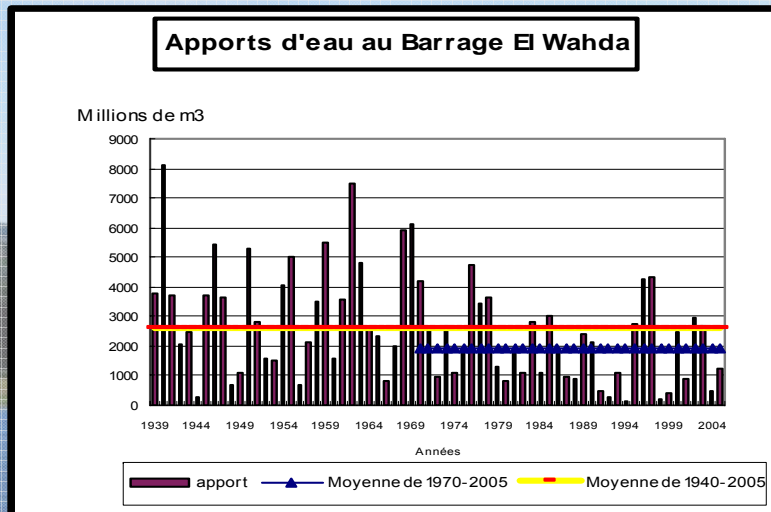


# Water resources evolution during last 35 years

## ✓ Surface water:

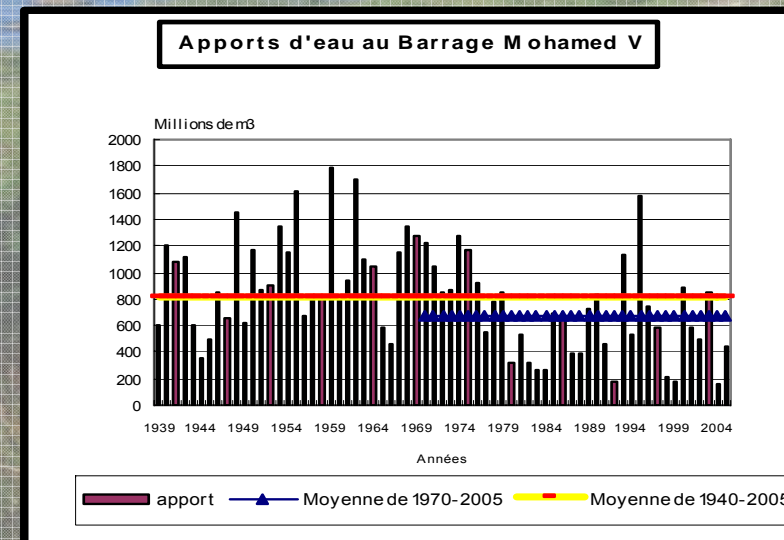
### ✦ Sebou Bassin:

Deficit between 1940-2005 & 1970-2005: **25%**



### ✦ Loukkos Bassin:

Deficit between 1940-2005 & 1970-2005: **18%**



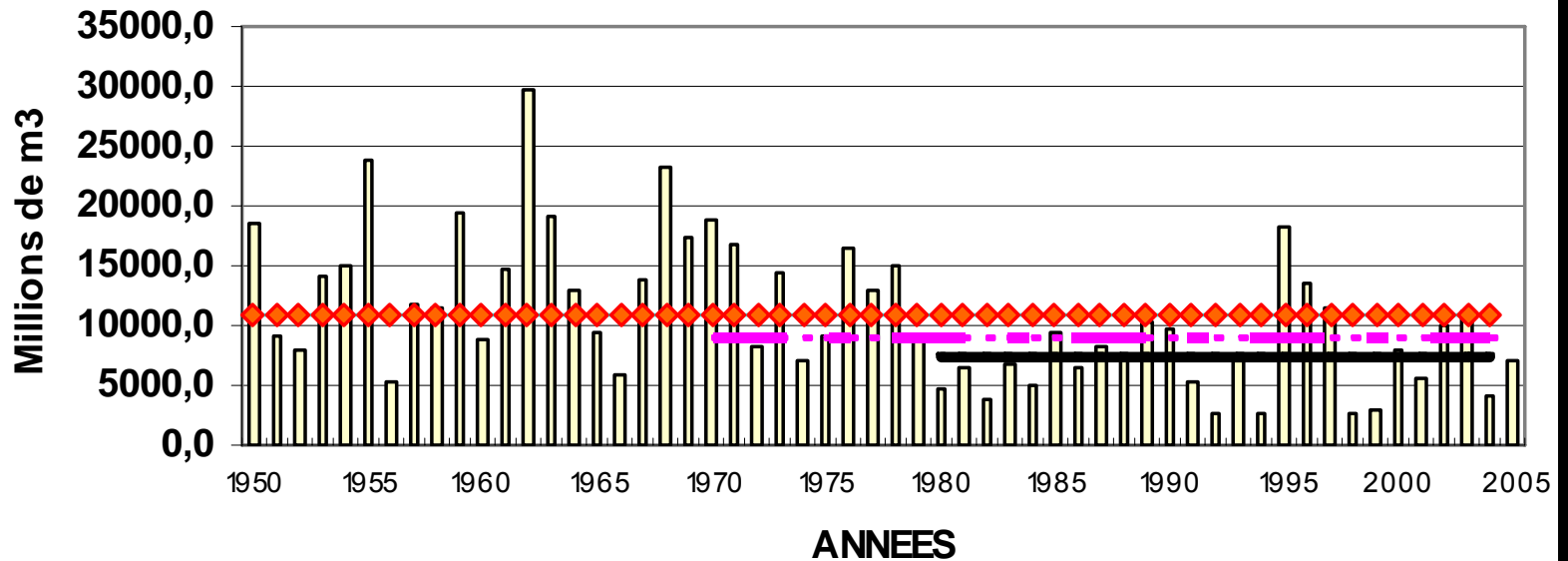
### ✦ Moulouya Bassin:

Deficit between 1940-2005 & 1970-2005: **18%**

# Water resources evolution during last 35 years

✓ Global water input in dams since 1950:

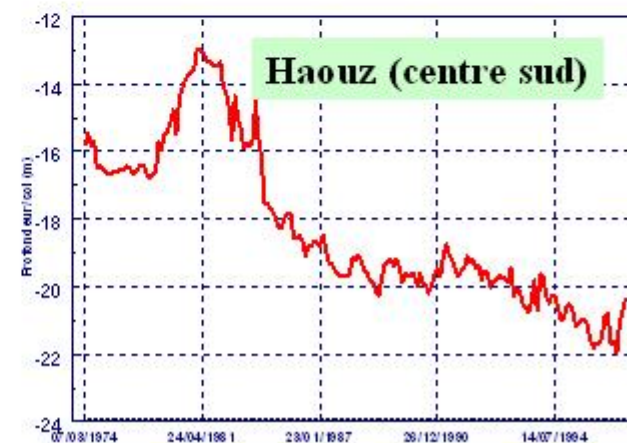
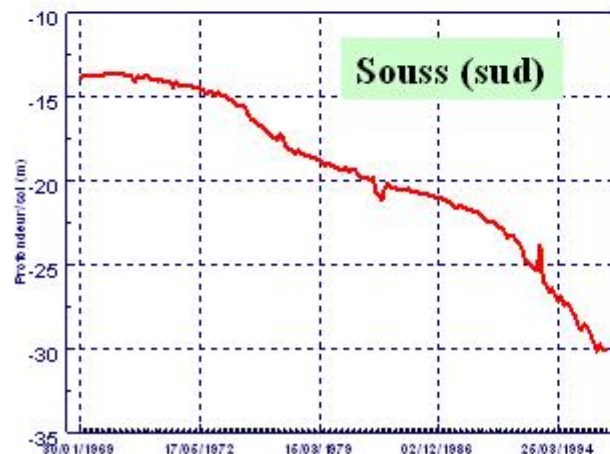
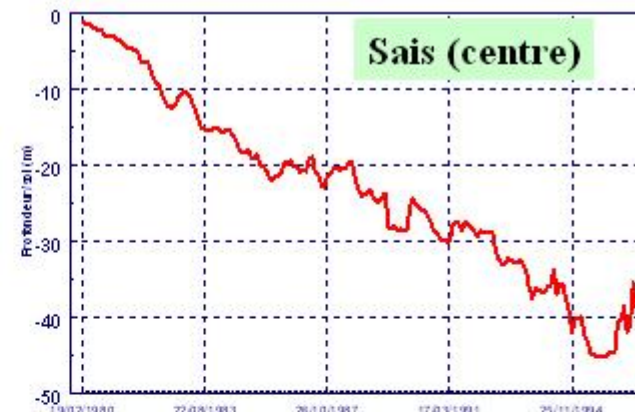
APPORTS GLOBAUX ENREGISTRES AU NIVEAU DE L'ENSEMBLE DES BARRAGES DEPUIS 1950



Deficit between 1940-2005 & 1970-2005 : **20%**

# Water resources evolution during last 35 years

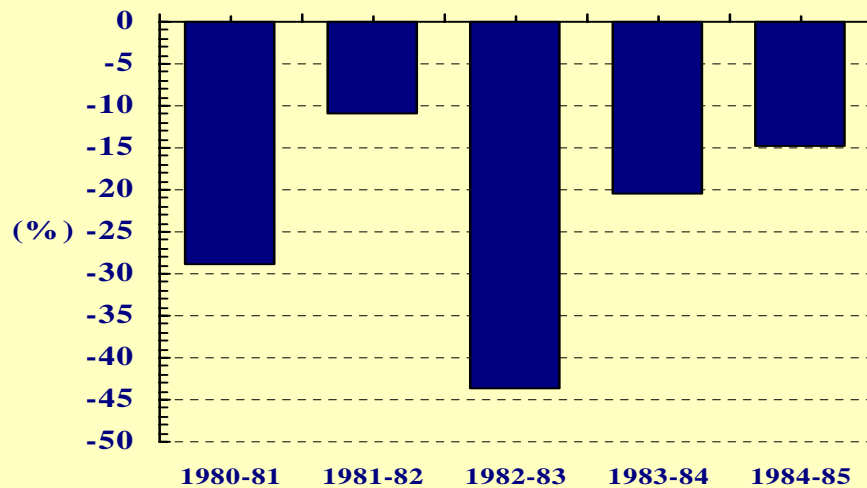
## ✓ Groundwater:



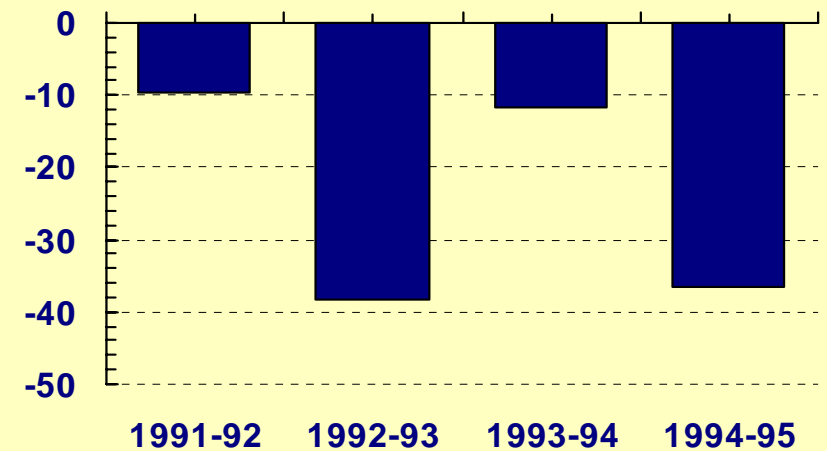
**Alarming decrease in most water tables: 40m for Souss, 30m for Haouz, 60m for Saïss...**

## Frequent droughts as a remarkable fact

- ☀ **20 periods of droughts have occurred last 35 years, sometimes generalized to all the country:**
  - ☀ **Rainfall deficit has exceeded sometimes 60%**
  - ☀ **Length of drought period has reached 5 years and more**



**Rainfall deficit between 1980-85**



**Rainfall deficit between 1991-95**

# Measures to reduce droughts impact

## ☀ Droughts impact:

- ☀ Difficulties in water supply in rural areas (long distance to lay in supply, diseases risks)
- ☀ Negative economic impact on agricultural sector (decreasing corn production, increasing rural unemployment)
- ☀ Drop in hydroelectric energy production
- ☀ Negative impact on water quality (decreasing self-purification, disruption of drinking water treatment stations)

## ☀ Measures to diminish this impact:

- ☀ Actions to improve forecasting and prevention
- ☀ Actions to raise available water resources
- ☀ Actions to protect water resources and promote water economy
- ☀ Actions to regulate and control

# Measures to reduce droughts impact

## ☀ Actions to improve forecasting and prevention:

- ☀ Enhancing water resources monitoring
- ☀ Developing research to forecast droughts
- ☀ Elaborating maps for vulnerable areas to droughts

## ☀ Actions to raise available water resources:

- ☀ Carrying on dams construction programme with adaptations to climatic changes context
- ☀ Transferring water from regions showing excess to regions in deficit
- ☀ Developing artificial recharging of water tables
- ☀ Exploring deeper water tables
- ☀ Developing non conventional water resources as reuse of waste water, desalination of groundwater and sea water
- ☀ Generalizing the access to water in rural areas (PAGER)



# ☀ Role of dams in the protection against droughts:

- ☀ Water supply
- ☀ Water tables recharging

O. EL MAKHAZINE



AL WAHDA



S. M. BEN ABDELLAH



AL MASSIRA



Y. BEN TACHFINE



MANSOUR EDDAHBI



HASSAN ADDAKHIL



SMIR



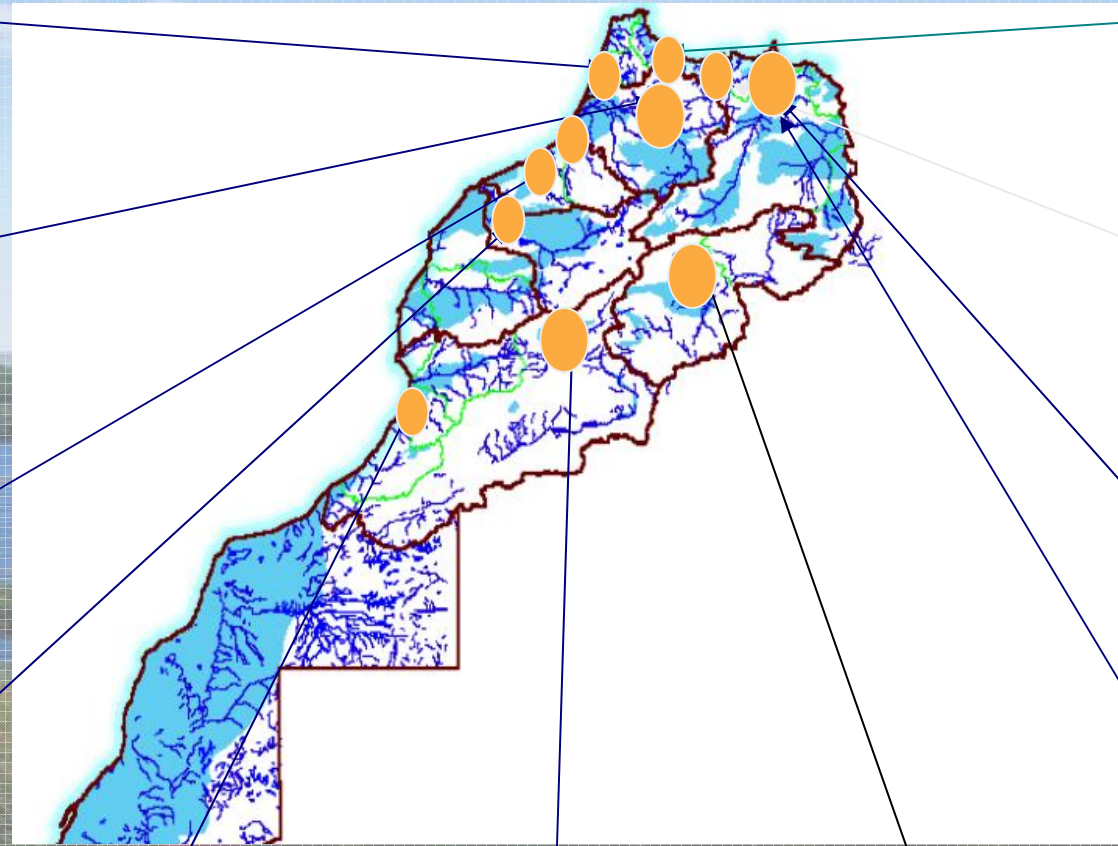
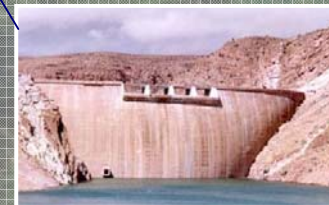
M. B. A. KHATTABI



MOHAMED V



HASSAN II



# Measures to reduce droughts impact

## ☀ Actions to protect water resources and promote water economy:

- ☀ Protecting water resources against pollution
- ☀ Struggling against overexploitation of groundwater
- ☀ Safeguarding hydraulic assets
- ☀ Improving distribution networks efficiency
- ☀ Establishing differential pricing to promote efficient use of water
- ☀ Adapting cultivation and irrigation techniques to the context of water scarcity
- ☀ Growing public awareness about social and economic value of water

## ☀ Actions to regulate and control:

- ☀ Establishing regulations tools to prevent and manage exceptional situations of water scarcity and droughts
- ☀ Making a real enforcement of the water law

## **Measures to reduce droughts impact: Conclusion**

- ☀ **Moroccan water policy adopted since 1960s played a significant role in mastering the impacts of the recent severe droughts.**
- ☀ **The coming droughts that the country would face should have greater impact, especially in a context of water scarcity, socio-economic development and climatic changes.**
- ☀ **So, it's fundamental to carry on efforts to enforce an integrated policy of sustainable development of water resources.**

**Contact : [skim@water.gov.ma](mailto:skim@water.gov.ma)**

شكرا على انتباهكم

**Merci de votre attention**

**Thank you for your attention**

