



**OECD Session:**

**Israel**

**Water pricing and command and control for water demand management in cities and agriculture in Israel**

**Sinaia Netanyahu**  
**Chief Scientist**  
**Ministry of Environmental Protection**  
**ISRAEL**  
**[netanyahu-s@sviva.gov.il](mailto:netanyahu-s@sviva.gov.il)**



Ministry of Environmental Protection

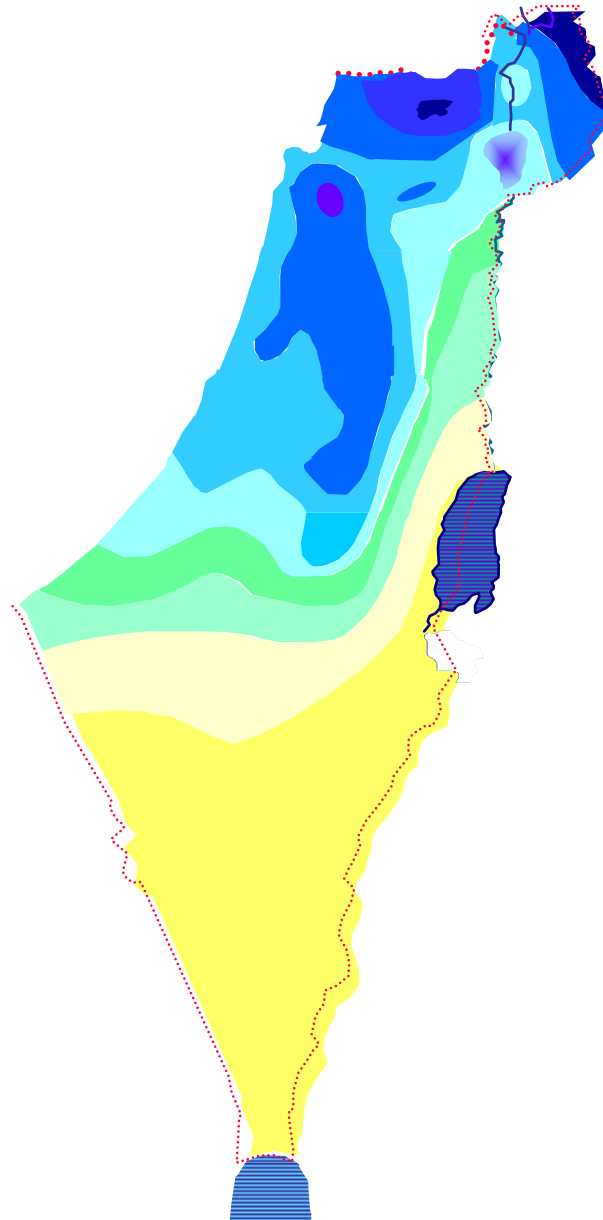
**WATER IN THE GREEN  
ECONOMY IN PRACTICE:  
TOWARDS RIO+20**



**Zaragoza, Spain  
3-5 October 2011**

# Dry South and Rainy North

Annual precipitation (mm)



Annual distribution:  
5 rainy months  
7 dry months



## Water Demand Per Sectors (2010, MCM/Year)

Neighbors	150	(7%)
Domestic	700	(35%)
Industry	130	(6%)
Nature	50	(3%)
Agriculture –Potable	450	(22%)
Agriculture –Non Potable	550	(27%)
Agriculture (total)	1000	(49%)

**Natural water refill: 1170 MCM (per year)**

**Water consumption: 2030 MCM (per year)**

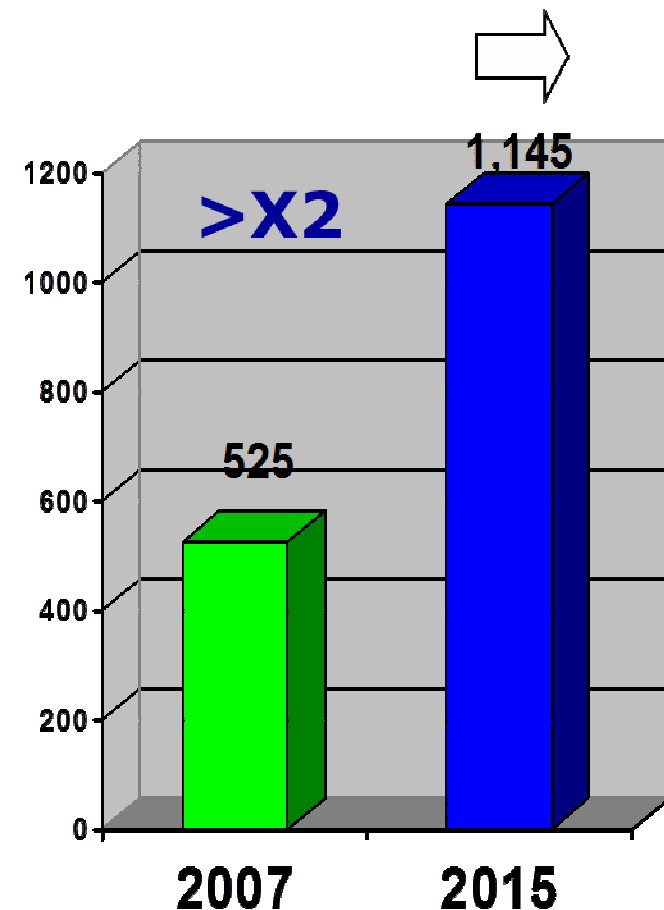
**Annual Shortage of over ~45%**

**Daily Domestic Consumption Per Capita ~250 Liters**

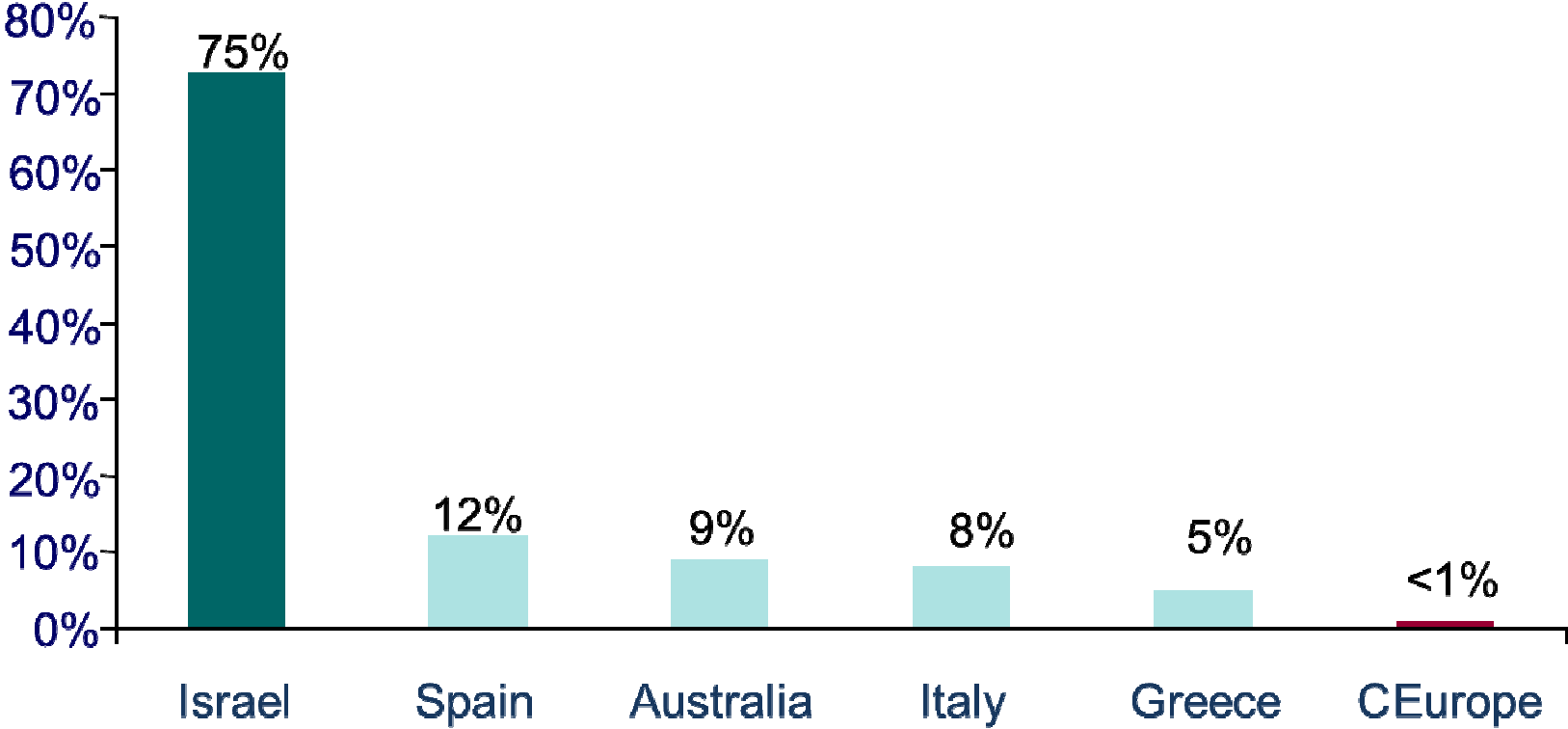
**Source: Israeli Water Authority**

# New Water resources

- **Shortage of Natural Resources**
- **New Water Resources**
  - **Desalinated Seawater**
    - **2007** – 130 Mcm/year
    - **2015** – 500 Mcm/year
  - **Desalinated Saline water**
    - **2007** – 25 Mcm/year
    - **2015** – 75 Mcm/year
  - **Wastewater Reuse**
    - **2007** – 370 Mcm/year
    - **2015** – 570 Mcm/year



# Reused Effluent; Israel and World



# Governing Laws & Institutions

## Water & Sewage Corporations Law

- Municipalities / Municipal Water Corporations
- Municipal water supply

## Ordinances for Public Health

- Ministry of Health
- Drinking water standards

## Water Law

- Water and Sewage Authority (with inter-ministerial council, including environment)
- Government is the custodian of the water

## ***Major changes within the water sector***

- ✓ **Overexploitation and deterioration** of natural resources
- ✓ **National water and sewage authority**
- ✓ **Municipal water corporations (56)**
- ✓ Increase in **sewage treatment (95% collected, of these 91% treated, 75% used for irrigation)**
- ✓ Use of **effluents for irrigation (~60% of total water for irrigation)**
- ✓ **Desalination** technology (~1/3 of drinking quantity)
- ✓ **Filtration of surface water** (1.5 mcm per day)
- ✓ Increase **water-use efficiency** in agriculture
- ✓ **Public awareness:** education & campaigns for domestic water saving
- ✓ **Increasing demand:** population growth, standard of living, obligations to PA & H.K. of Jordan

# WATER DEVELOPMENT IN ISRAEL



Water & food security



From an infant economy to  
advanced industry



Social and ideological values



Health



Environment



Tourism



# SUPPLY MANAGEMENT

## Engineering and hydrological based

- increase storage capacity
- connect remote areas
- develop water resources
- divert saline water from fresh water sources

## Technologically based

- water treatment: desalination of seawater and brackish water, waste water treatment to be reused for irrigation

## Environmentally based

- allocate fresh water to the environment in order to maintain ecological assets and services
- divert waste water to streams only after treatment
- divert saline water
- manage resource exploitation

## Efficiency & economically (cost) based

minimize wasted water by repairing leakages, managing water pressure, etc.

# DEMAND MANAGEMENT

Education,  
awareness, water  
saving campaigns

- influence behavioral change

Increasing block  
tariff

- incentive to consume less

Fines

- pay fines for consumption above allotted quotas (farmers and industry), pay over-use fee during drought period (residential, imposed for limited time)

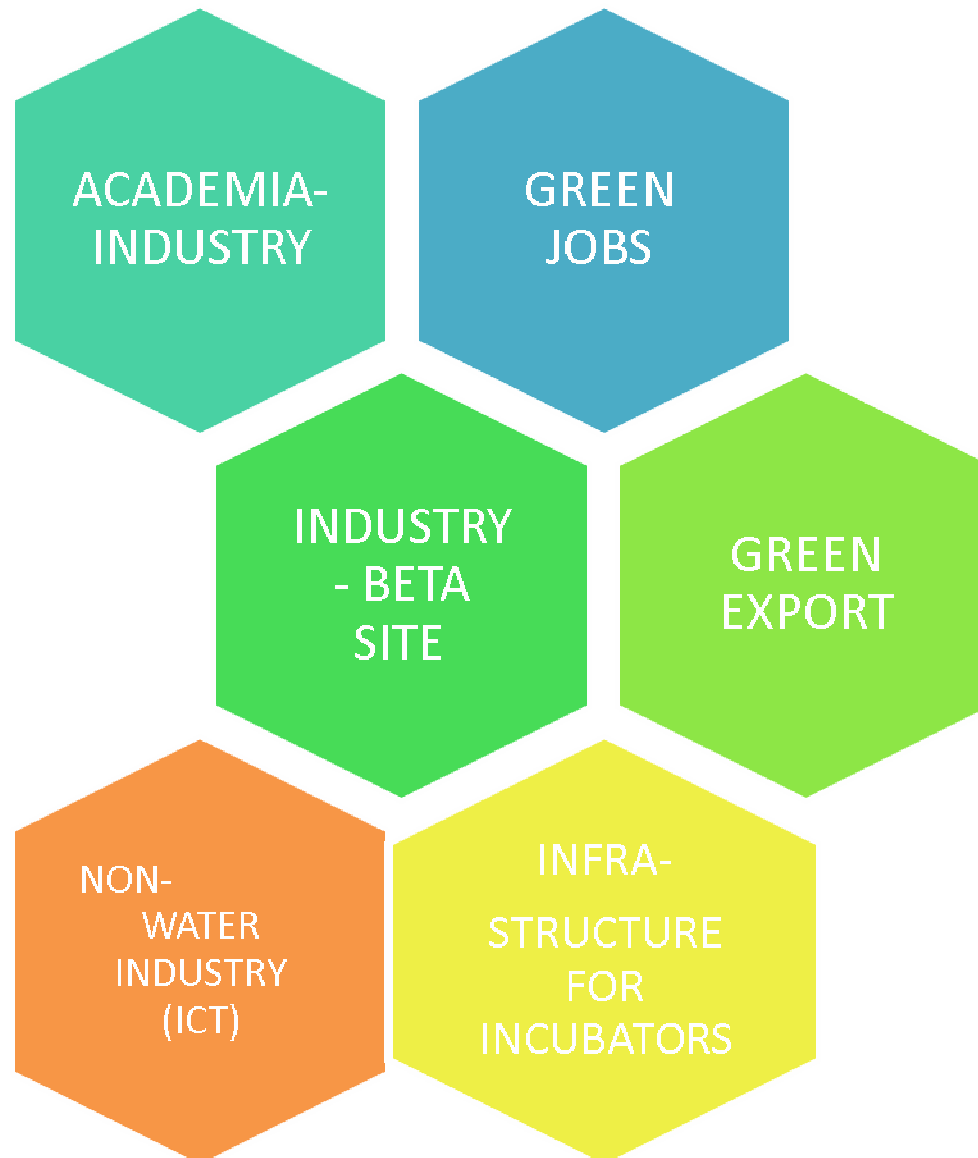
Aquifer  
—  
production levies

- pay for water production to reflect water scarcity rent

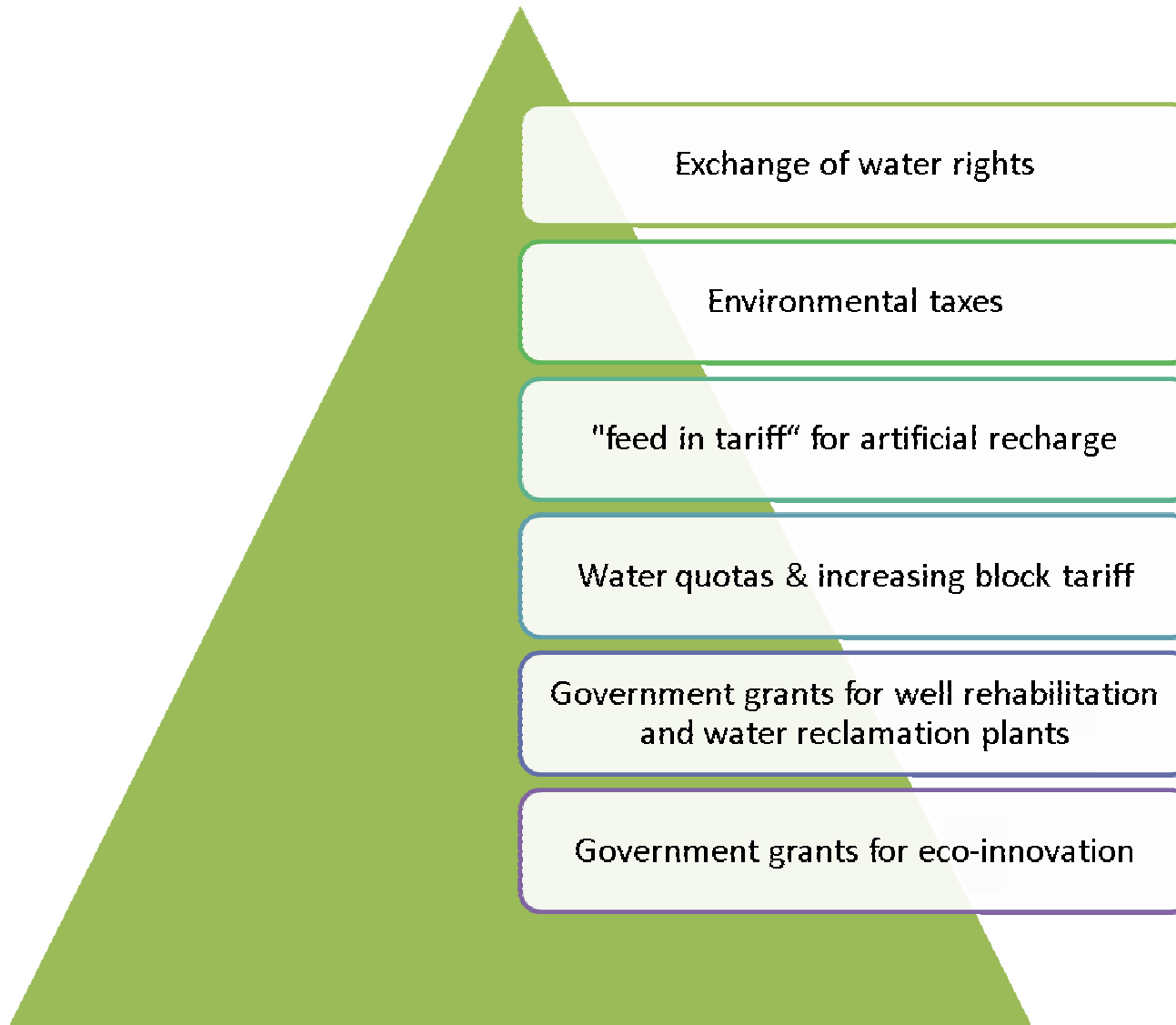
# Financial policy

- Water sector operates as a closed economy
- Relies on water tariff for its financial needs
- Water tariffs reflect cost recovery and scarcity of resources
- Government backs the sector with long term commitments for purchasing water from desalinated plants
- Government also granted and backed the establishment of Municipal Water Corporations
- It is likely that government budget would still be needed for unique projects

# National policy for promoting the water industry, green jobs and green export



# Economic and administrative instruments for green growth



**Thank you!**