

# IWRM in Israel

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Hydrological Service

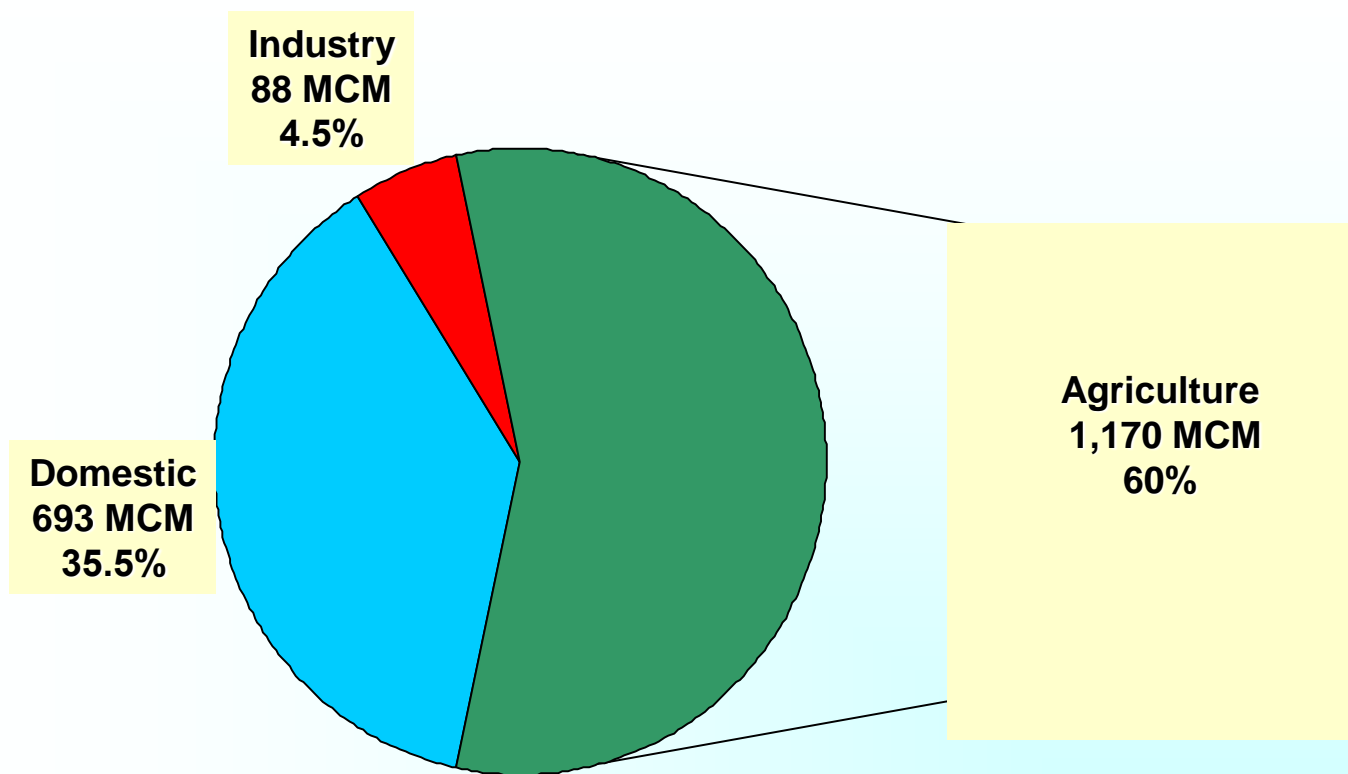
**The Israeli Governmental Authority for  
Water and Sewage**

# Main Constraints and Challenges



- Average total natural enrichment – 1.7 billion m<sup>3</sup>/year
- Water demand > 2.2 billion m<sup>3</sup>/year
- Current potable water demand < 1.2 billion m<sup>3</sup>/year
- Forecast for water demand 2020 ~ 1.7 billion m<sup>3</sup>/year

# Water Consumption In Israel according to sectors Data for 2011



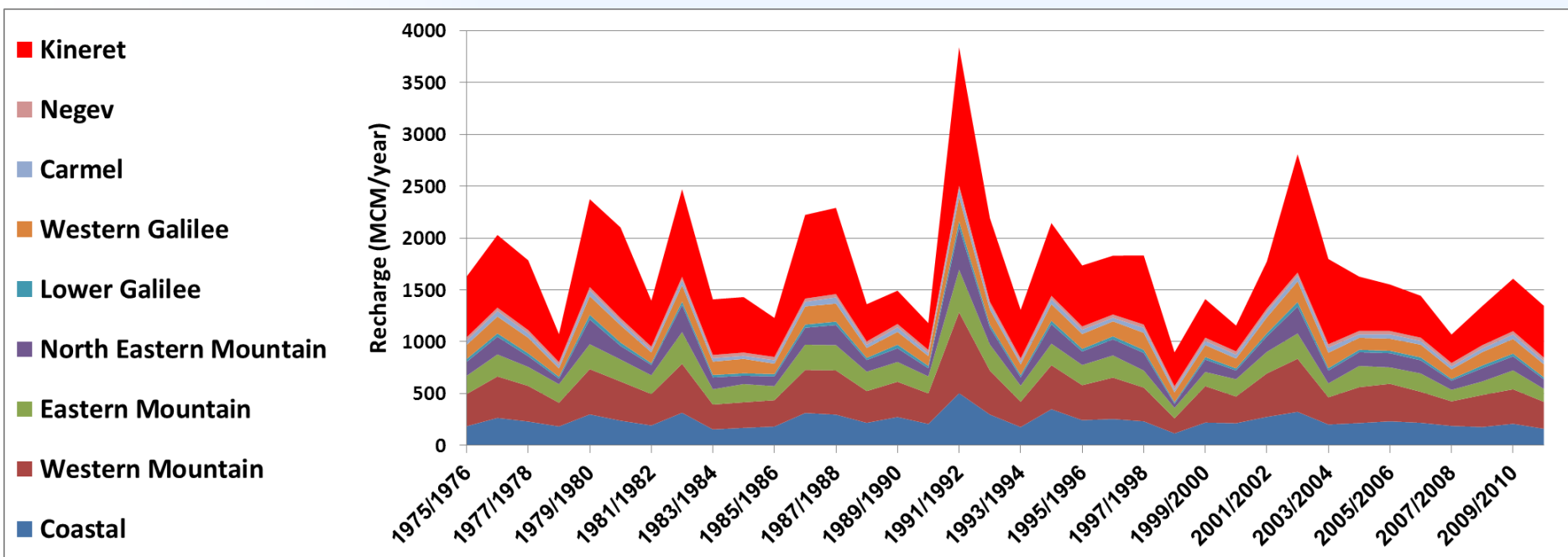
**Total in Israel: 1,966 MCM**  
(including 15 MCM for Nature)

**Total demand ~ 2230 MCM**

**Supply to PA – 52 MCM; Supply to Jordan – 48 MCM; PA pumping ~160MCM**

# Recharge from Rainfall years: 1975-2011

**AVERAGE: 1,728 MCM , MEDIAN: 1618, STD: 572 MCM  
MINIMUM :898MCM, MAXIMUM:3839**



**Natural water recharge is not sustainable water source**

# **SWIM in Israel**

## **Progress and Achievements**

- **Waste water reuse**
- **Sea water and brackish water desalinization**
- **Consumption Reducing**
- **Centralized/Integrated Water Supply System Enabling IWRM**
- **Water resources rehabilitation**
- **Storm water utilization**

# Waste Water Re-Use

An aerial photograph of a wastewater treatment plant. The image shows several large circular clarifiers in the foreground, a central rectangular aeration tank, and a large reservoir in the background. The surrounding landscape is arid and brown, with some green patches of vegetation. The sky is clear and blue.

- Re-use of 500 MCM/Y in 2014 (370 today~80% of waste water).
- Sewage effluents for Agriculture – 50% of allocations in 2014.
- Tertiary treatment – unrestricted irrigation. New stringent standards for effluents quality (37 parameters).
- Methods of agricultural cultivation in Israel are constantly modernized and innovated.
- Israel is the international leader in developing water saving technologies and WW Re-Use.

In accordance with government decisions in 2001, large scale seawater desalination facilities are being built:

Production 12/09

(127)  
Hadera

**Completed facilities ~ 300 MCM/Y**

Ashkelon - 105 MCM/Y (VID) + 15 exp.

Palmachim - 30 MCM/Y (Via Maris) + 15 exp.

Hadera - 100 MCM/Y (H<sub>2</sub>ID) + 27 exp.

Under  
Construction ~2013

Full production  
Since 9/07

(150)

Sorek

(45 + 45)

Palmachim

(100)  
Ashdod

Mekorot Develop.  
Production ~2013

**Under Construction ~300 MCM/Y**

Sorek - 150 MCM/Y (SDL)

Ashdod - 100 MCM/Y (TK Mekorot)

Palmachim - 45 MCM/Y Enlargement

(120)  
Ashkelon

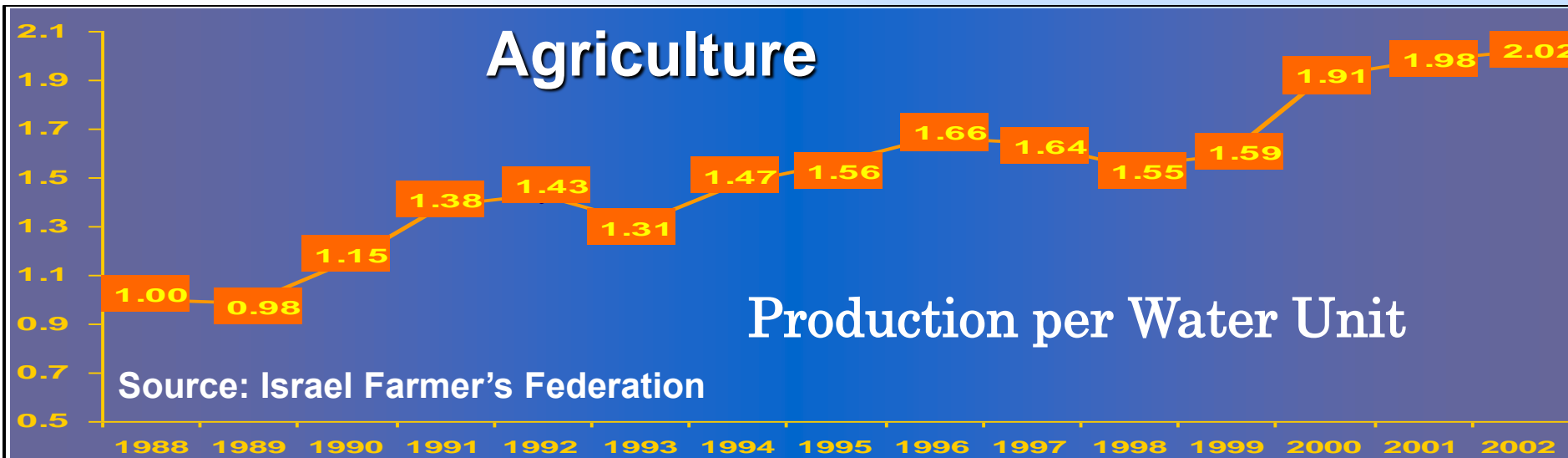
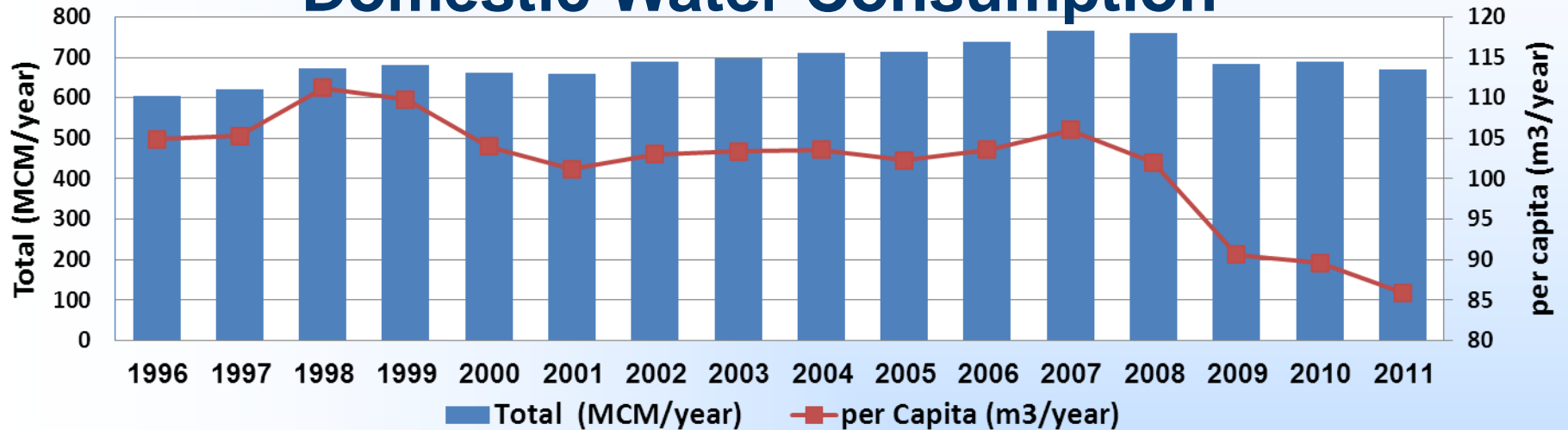
Full production  
Since 12/05

**Overall by 2013 = 600 MCM/Y**  
**By 2020 = 750 MCM/Y**



# Consumption Reducing

## Domestic Water Consumption

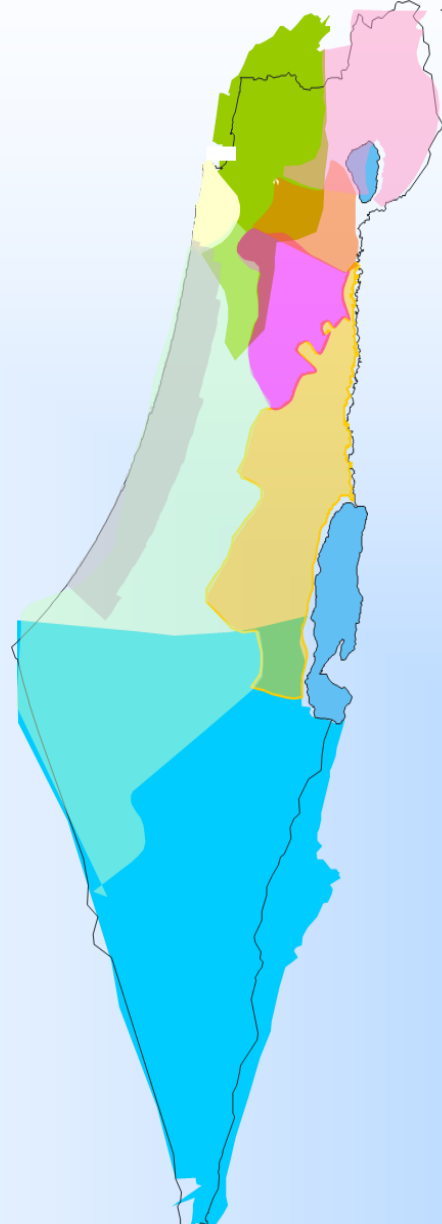




# Centralized/Integrated Supply System Enables IWRM

## Recharge from rainfall Average 1973-2009

Basin	Recharge (mcm)
Kineret	579
Coastal	243
Western Mountain	352
Eastern Mountain	192
North Eastern Mountain	142
Lower Galilee	28
Western Galilee	136
Carmel	41
Negev	32
<b>Total</b>	<b>1745</b>



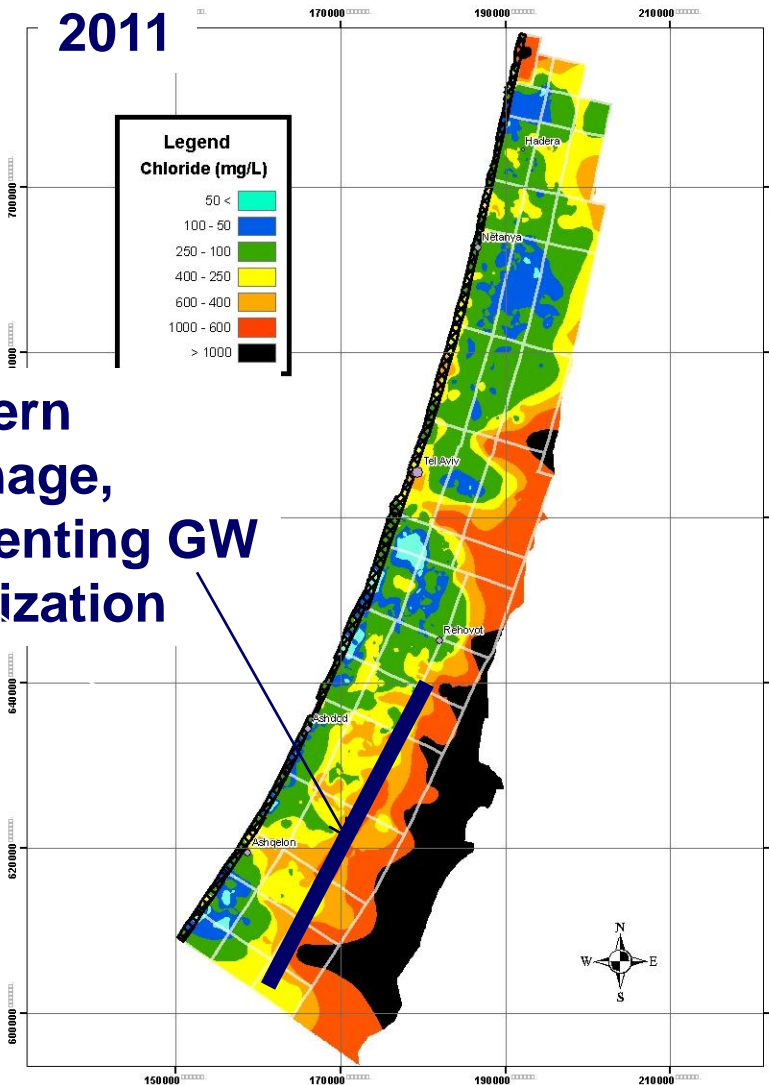
Annual quantity of floodwaters in Israel is 235 MCM of which 210 MCM occurs in the western drainage regions and 25 MCM in the eastern flow system. Unfortunately, only a quarter of this quantity, around 50 MCM, is now being captured and utilized.



Runoff from built-up areas estimated as 40 MCM



**2011**

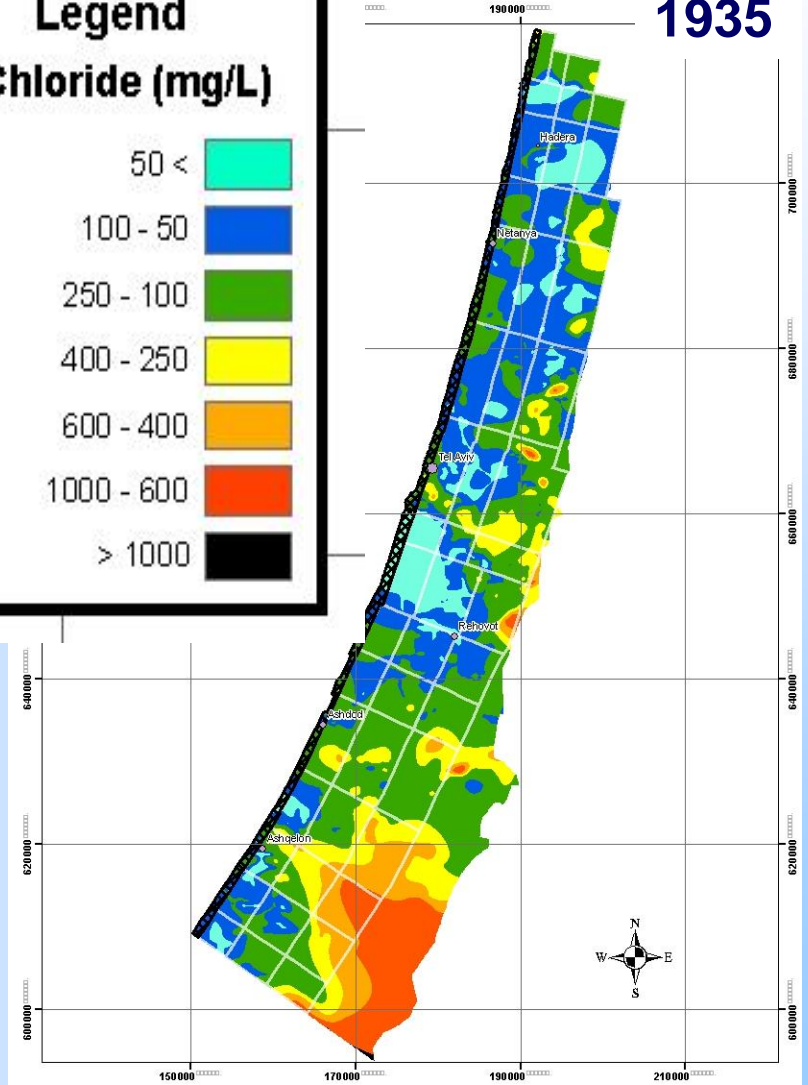


**Eastern drainage,  
Preventing GW  
salinization**

**Legend**  
**Chloride (mg/L)**



**1935**



# The Way Forward

## Challenges

- **Positive population growth**
- **Negative climate change forecasts**

## Solutions

- **Man-Made Water (Desalinization and WWT)**
- **IWRM**
- **Aquifer Rehabilitation – To provide long-term groundwater recharge and storage**



**Water is a matter of deeds,  
not words!**