

Policy and Economics of the Israeli Water Sector

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Scale



Area (sq mi)	164,000	8,000
Population (millions)	39	8.7
Density (1/sq mi)	240	1015

Israel National Water Supply System



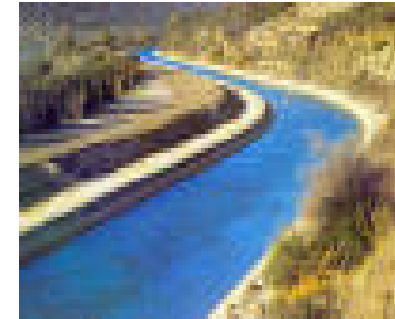
Sea of Galilee

The Shore Aquifer

The Mountain Aquifer

Tel Aviv

Jerusalem



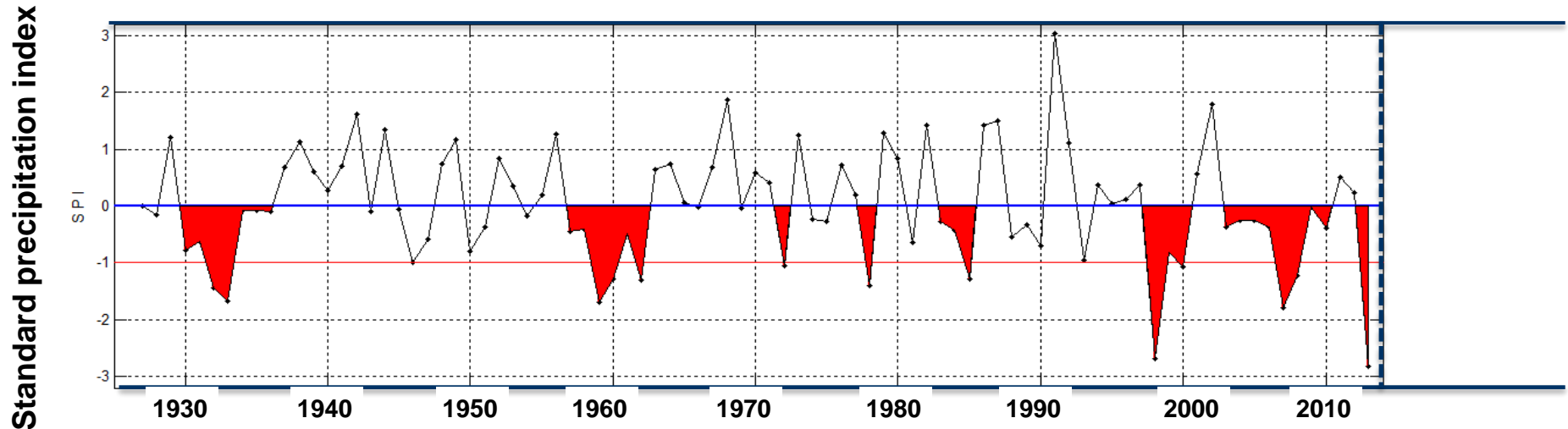
The National Carrier



Recurring Droughts

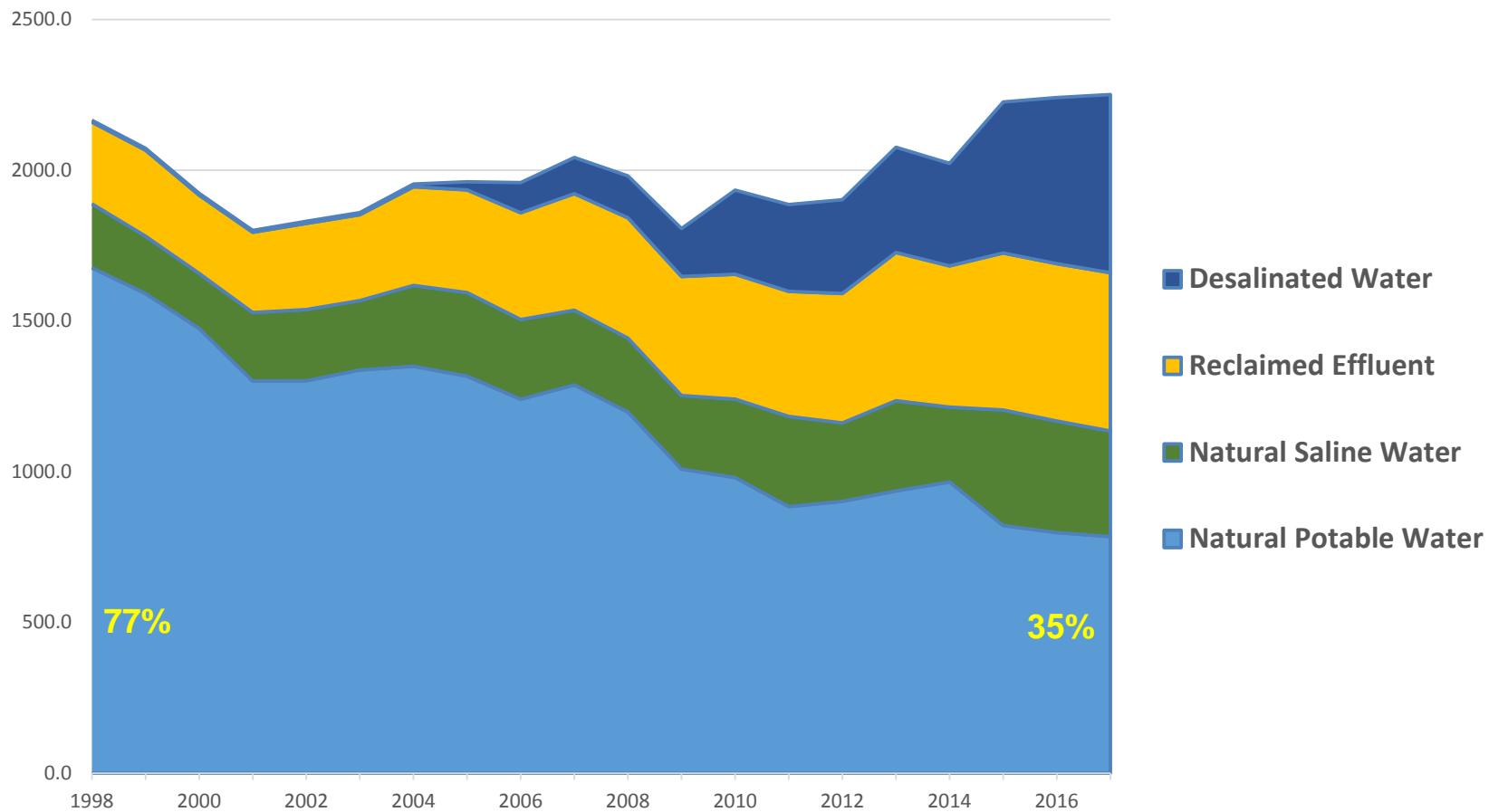


Simulated Droughts

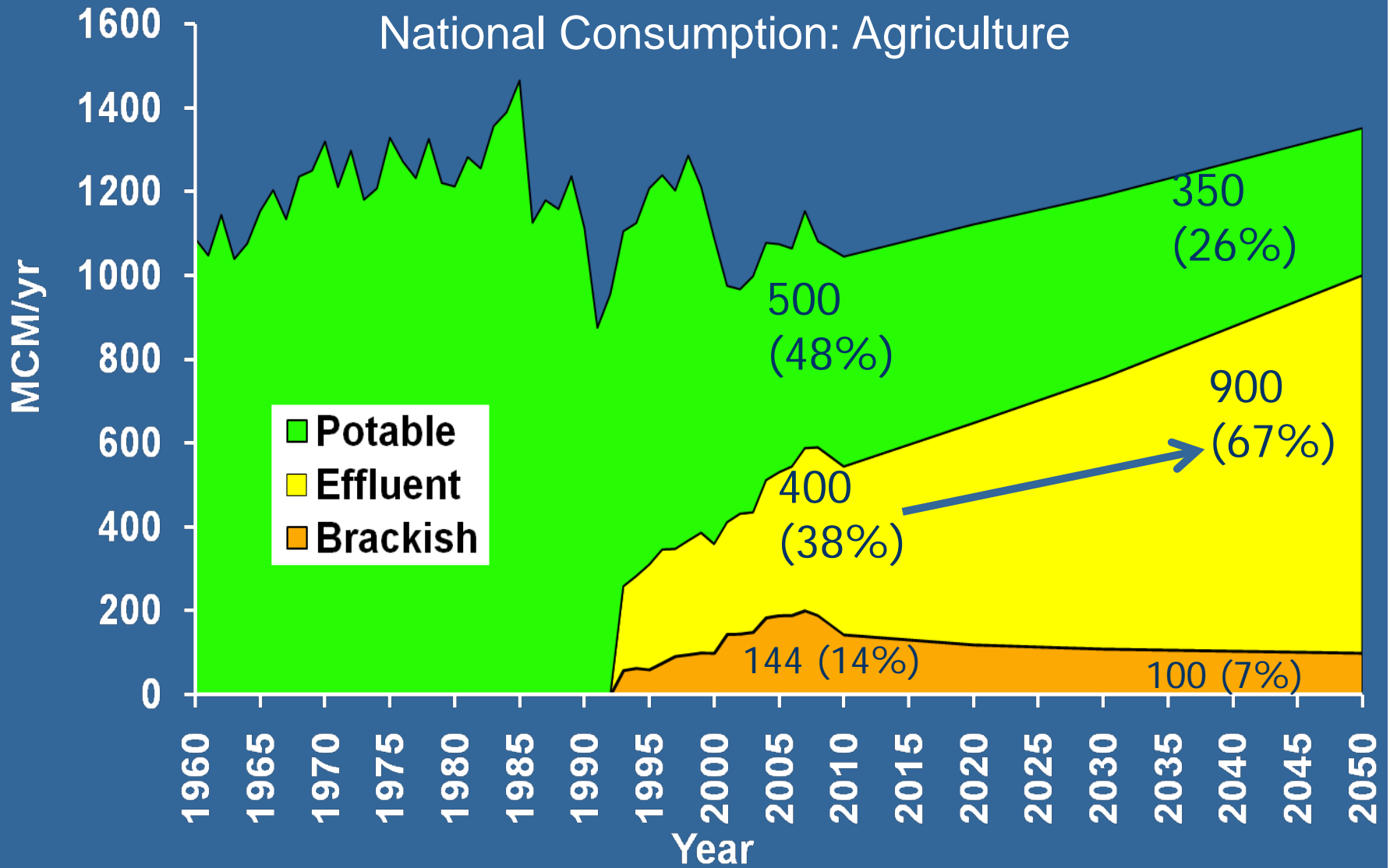


Drought magnitude, intensity and duration are expected to increase in the future

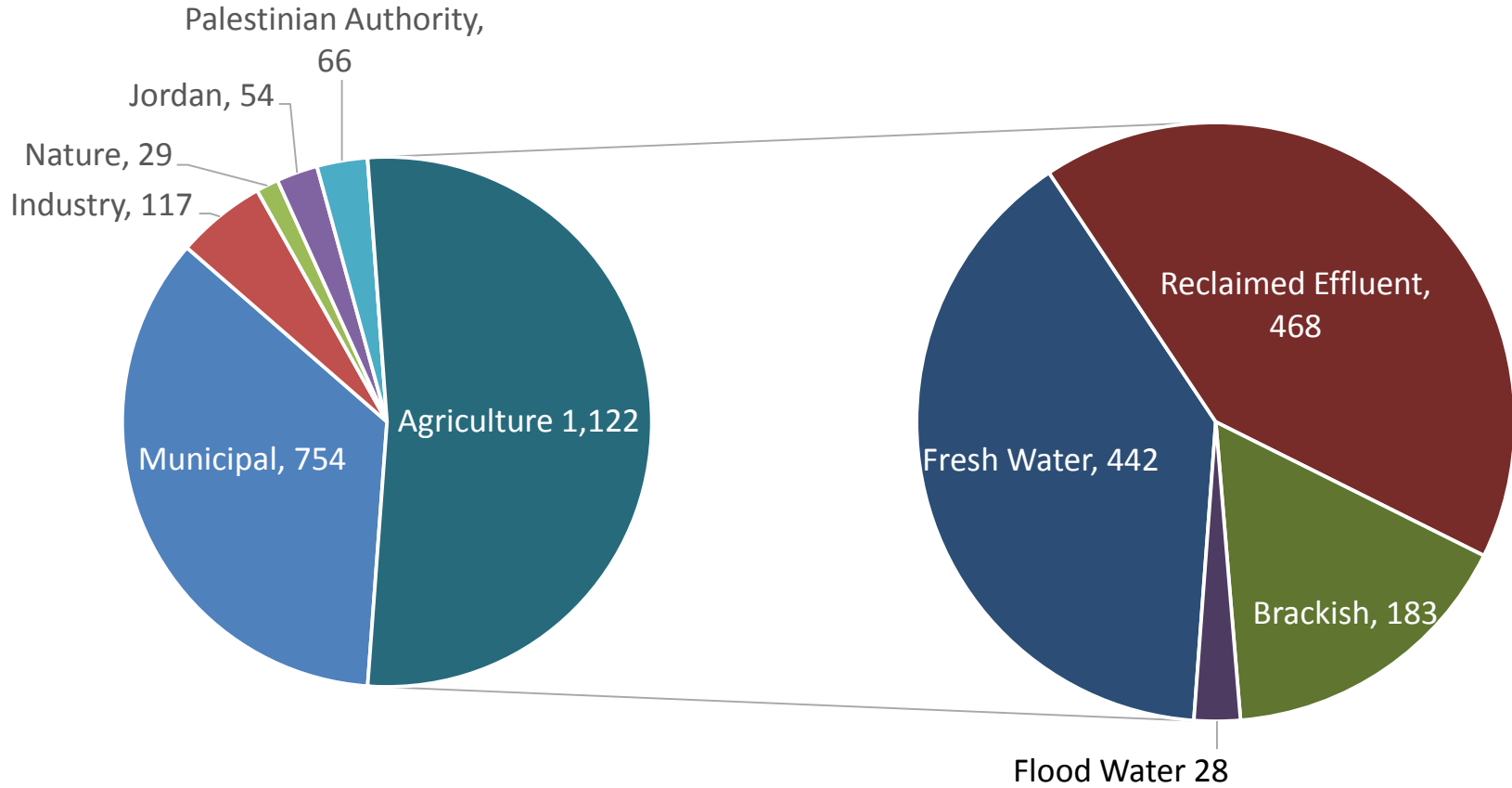
Water Supply by Resources (MCM) in Israel 1998 - 2017



National Consumption: Agriculture



Israel Water Supply 2014 (Million Cubic Meters)



Total Annual Quantity Supplied – 2,144 MCM

Reuse of All Sewage Effluents

- **With governmental support, sewage infrastructures have been developed and upgraded nationwide, what enabled to turn the environmental hazard to a valuable resource.**
- **Annual Reuse of \approx 470 MCM**
- **Sewage effluents use for agriculture exceeded potable water use**
- **Tertiary treatment – unrestricted irrigation. New stringent standards for effluents quality (37 parameters).**
- **Nutrients and Salt Removal.**



Reuse of all sewage effluents in Tel Aviv area

Sewage from Tel Aviv area – 150 MCM/Y

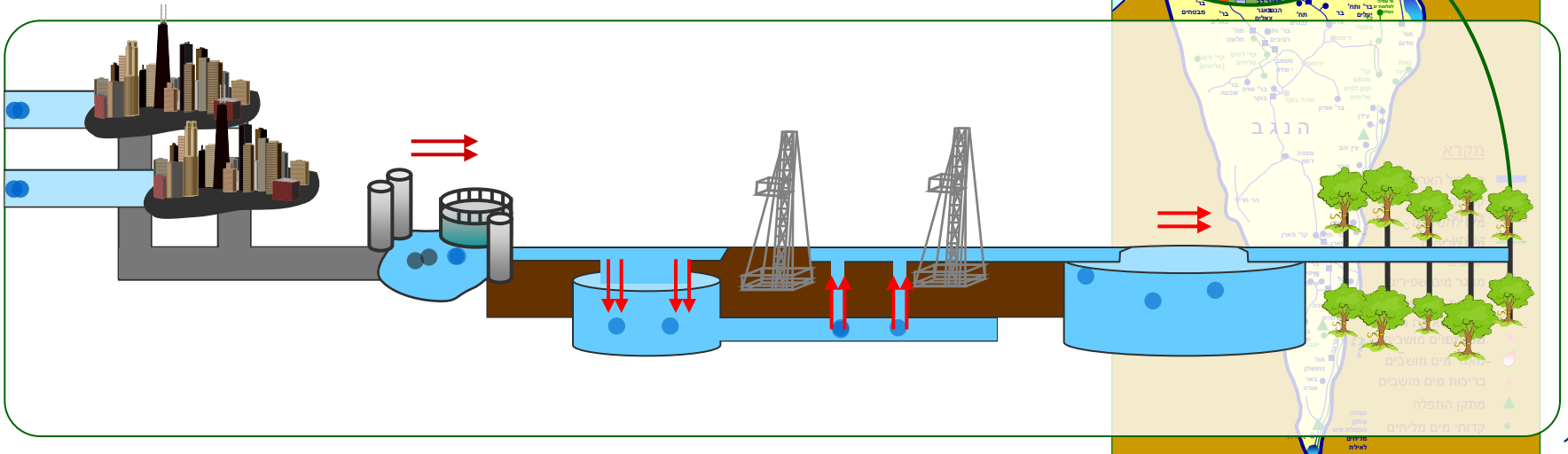
Large-scale WWTP – secondary treatment quality

Six infiltration fields

150 production and monitoring wells

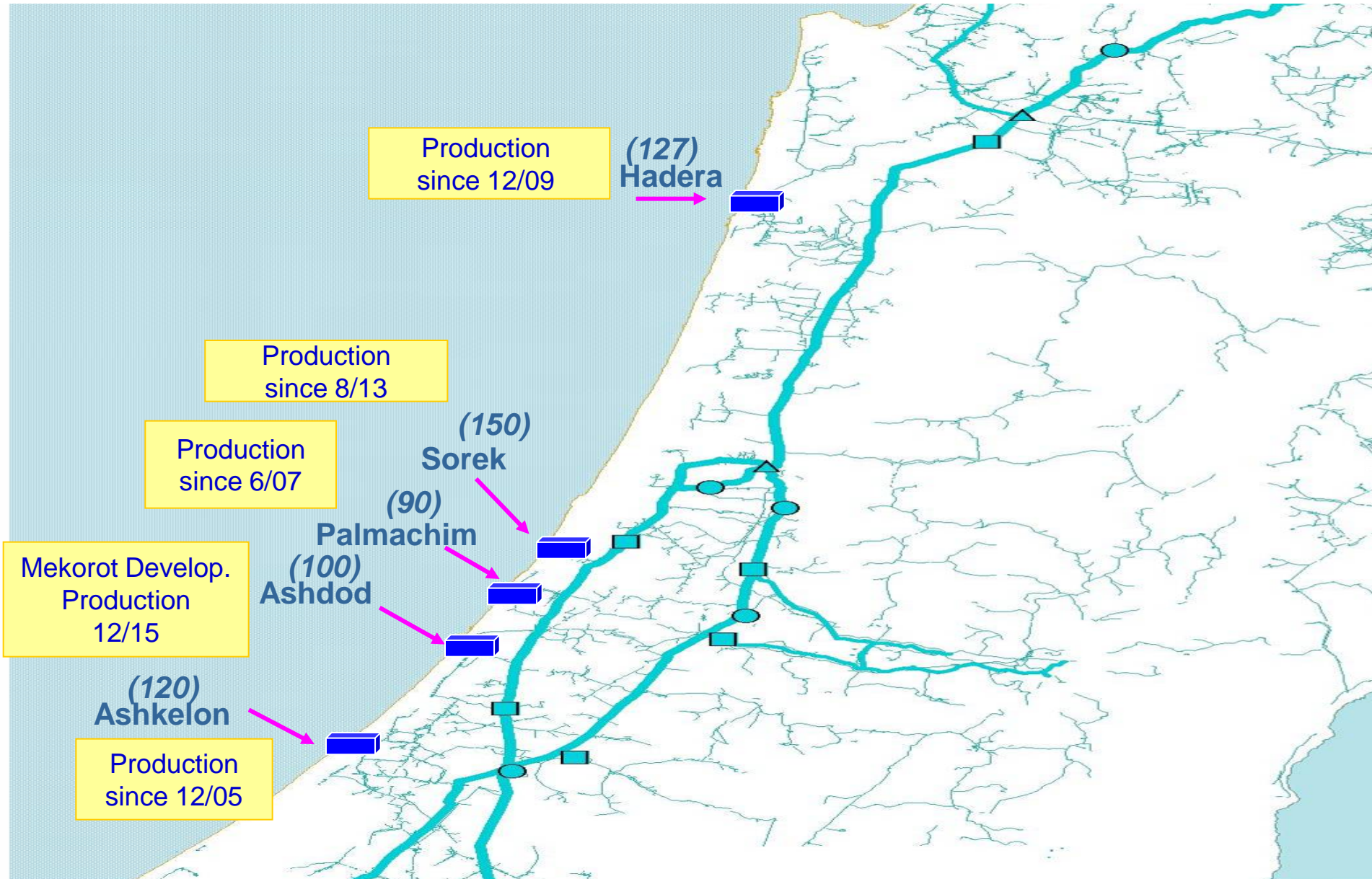
60 miles pipeline to Negev

32 pumping stations, operational storages and seasonal storages (20 MCM)





Sea Water Desalination

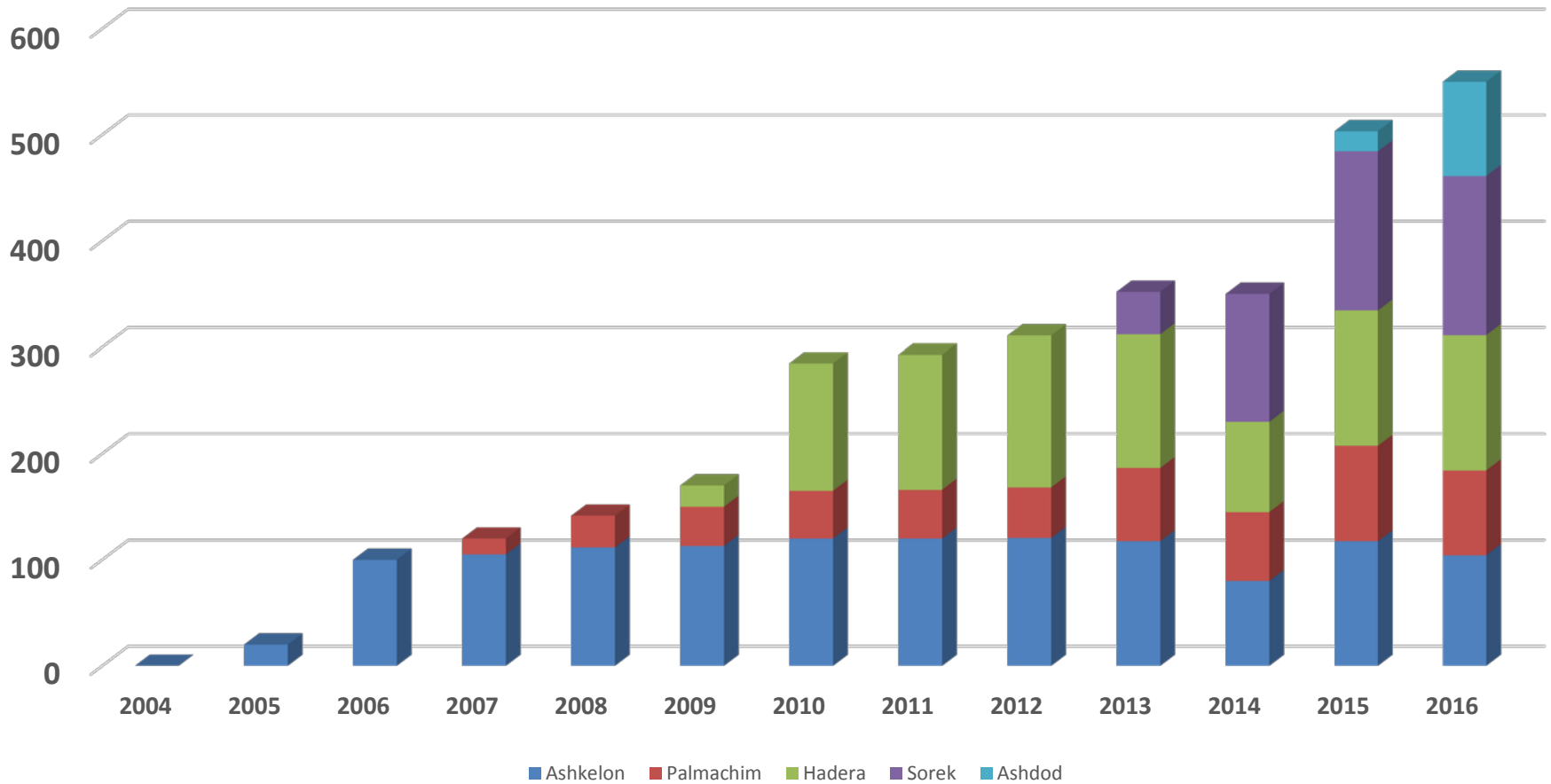




5 Large Scale Facilities in less than 15 years



SWRO Facilities - Annual Production



* 2016 – Projected data

How do we ensure sustainability?

Integrated Water Resources Management

Reuse of treated effluents

Seawater and brackish water desalination

Development of the national and regional infrastructure

Technologies for efficient use of water

and

Governance & Regulation!

From The Israeli Water Law - chapter 1:

“The country's water resources are public property, controlled by the state and are designated for the needs of its residents and the development of the country..”

“”Water resources”, for the purpose of this law, include: springs, streams, rivers, lakes, reservoirs, either surface or ground water, natural or artificial, standing or flowing, including drainage water and sewage”.

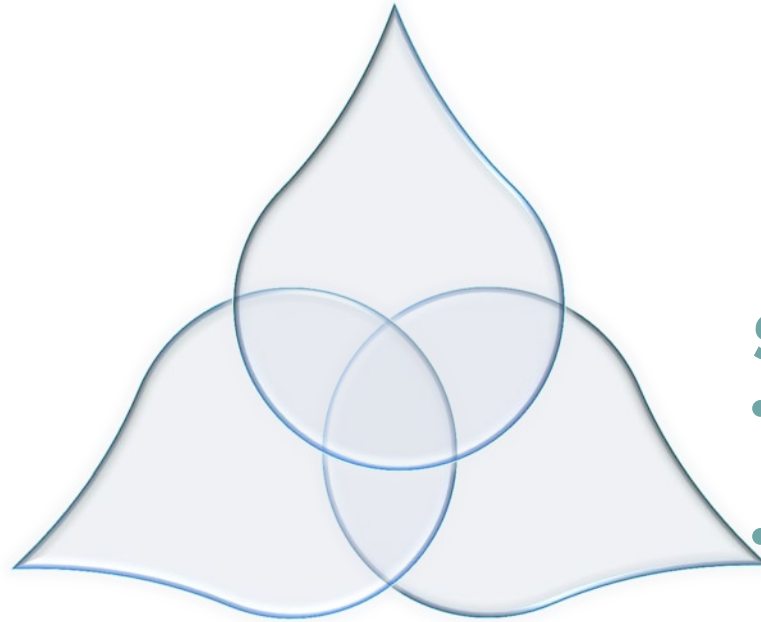
Central Control

- All of the water production, from all the facilities (wells, pumps, sewage treatment) is metered
- The measurements are transferred online to the Water Authority control center
- Annual water supply data is delivered to IWA by every supplier .



Regulation:

- One decision making regulatory body
- Professional (not political) level
- Integrative approach



Finance:

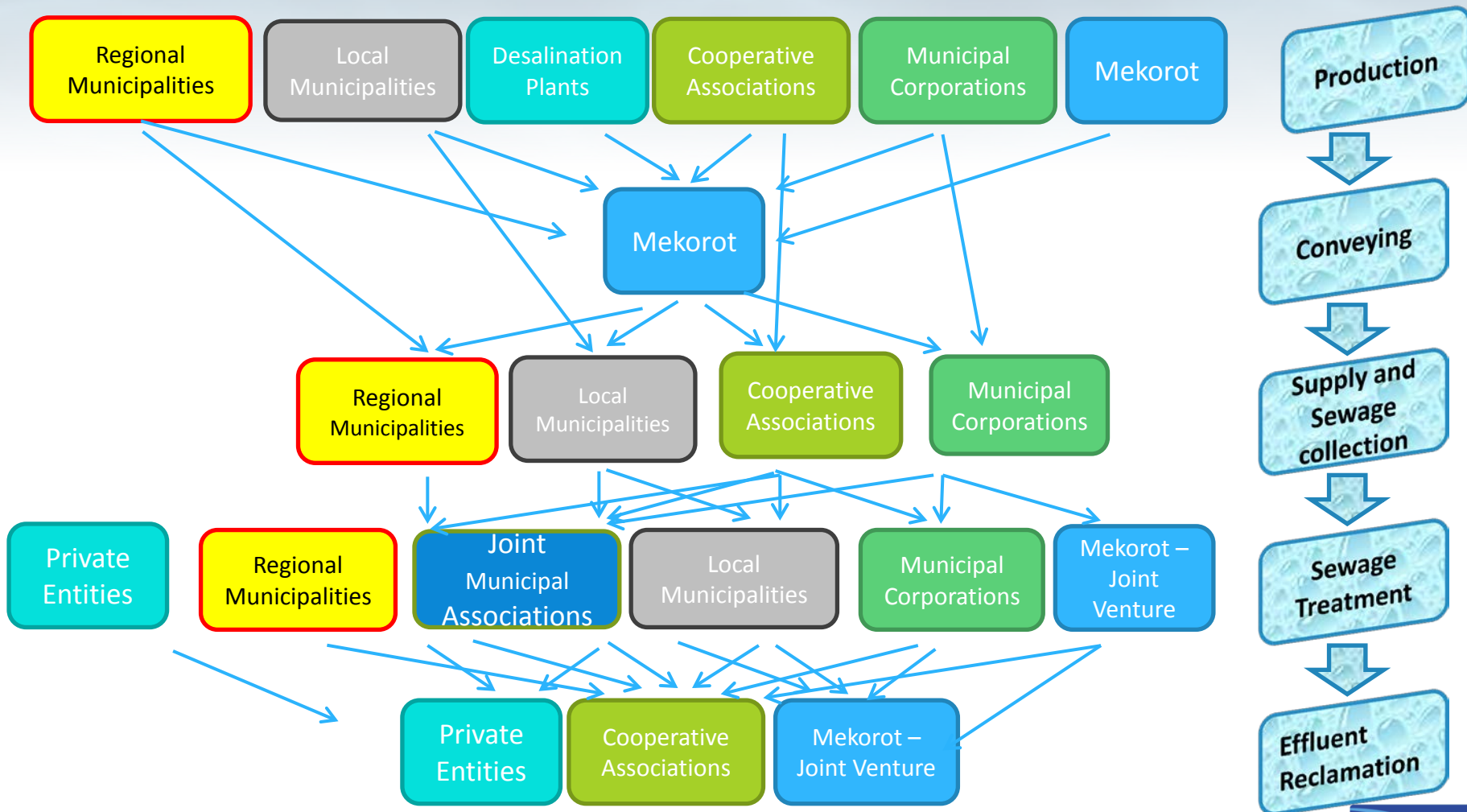
- Cost recovery for suppliers
- Fairness and uniformity for consumers

Service Standards:

- Investments in infrastructure
- High quality standards for end users

**The Water Authority –
Governance Principals**

The Main Water Sector Players



The Reform in Water Tariffs

The Annual financial volume of the water sector in Israel is 2.5 billion \$

- **The principle of covering all costs**
providing resources for infrastructure needed for water supply and encourages water conservation.
- **The principle of fairness or uniformity**
As a rule, all users of water in a given sector pay the same price, regardless of their location.

Water Tariffs for the Domestic Sector:

Two-block tariff system:

- Below 3.5 m³/person/month - the rate is ~ 2.2 \$/m³
- Above 3.5 m³/person/month - the rate is ~ 3.5 \$/m³

- ❖ Progressive pricing
- ❖ Encouraging conservation
- ❖ Cost recovery

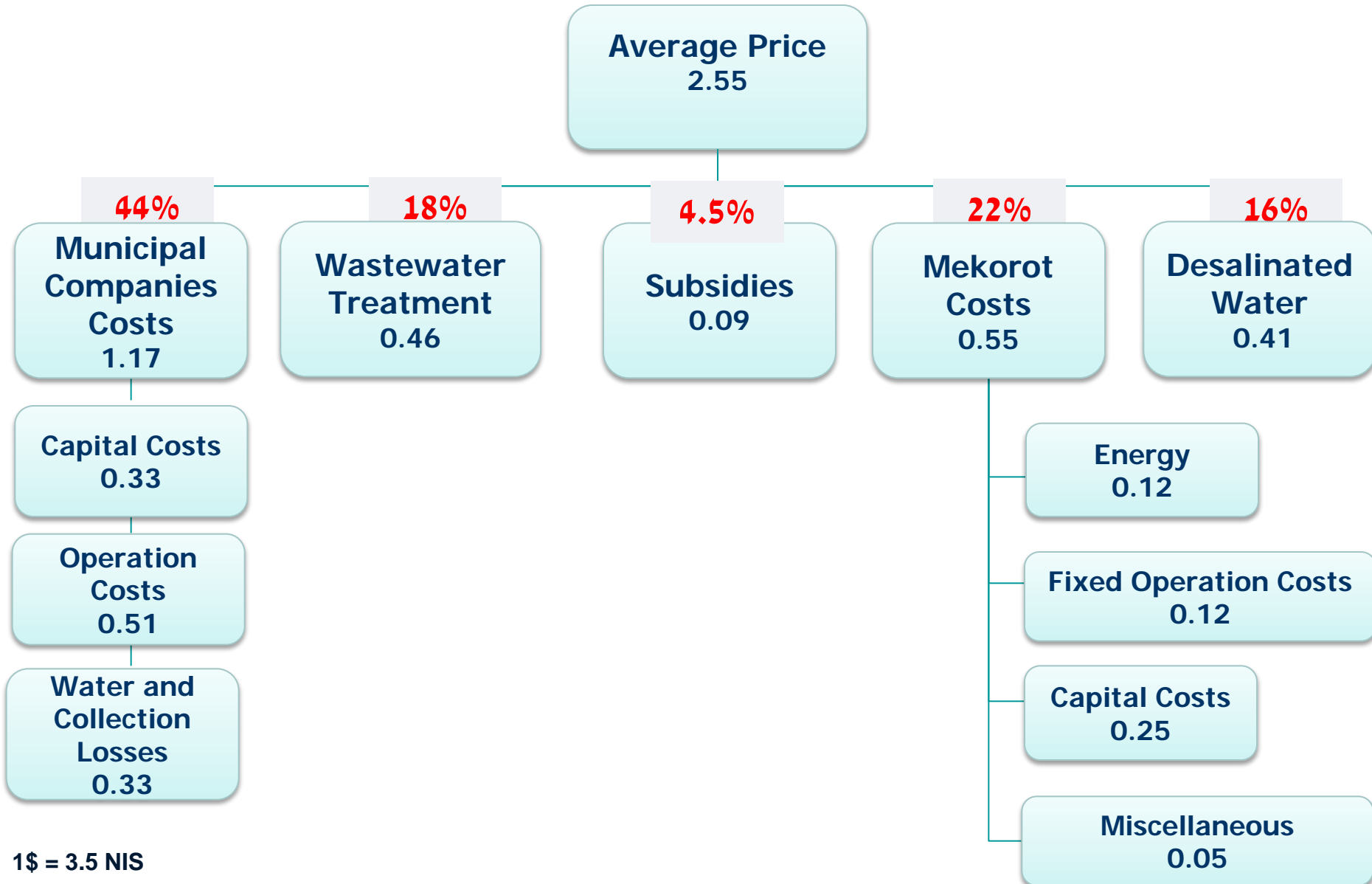


1\$ = 3.5 NIS

During the last 3 years (2014-2016) the water tariffs for domestic use were reduced by 18%!

Municipal Water Prices Components – 2016

(in US\$/CM without VAT):

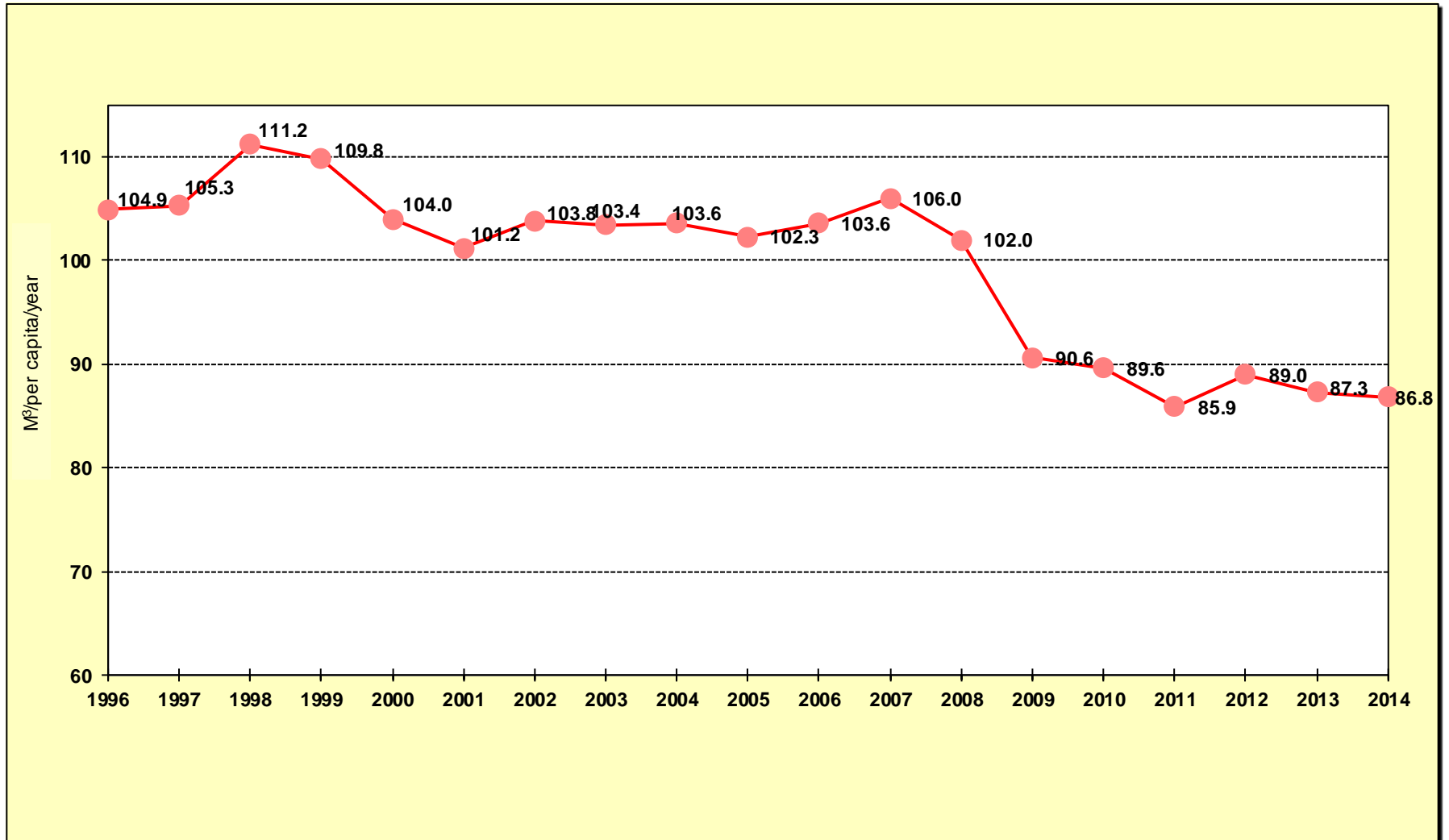


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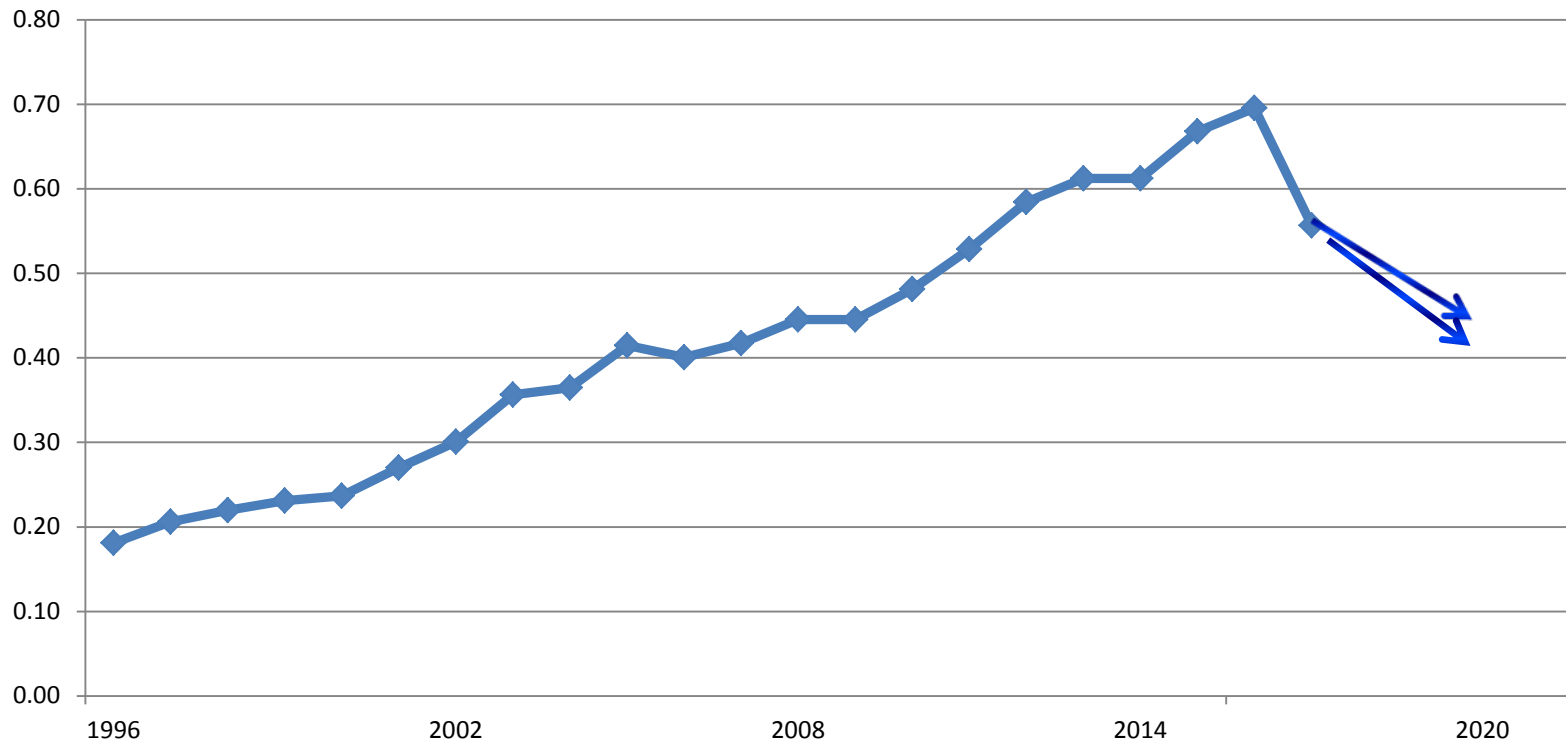
Municipal Water Consumption

1996-2014

Per capita / annum



Water Prices for Agriculture (US\$/CM)





Thank you

■ The Governmental Authority for Water and Sewage ■

