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July 2023

# Regulation and Tariffs of Water for Agriculture services in Israel

## Economics Division

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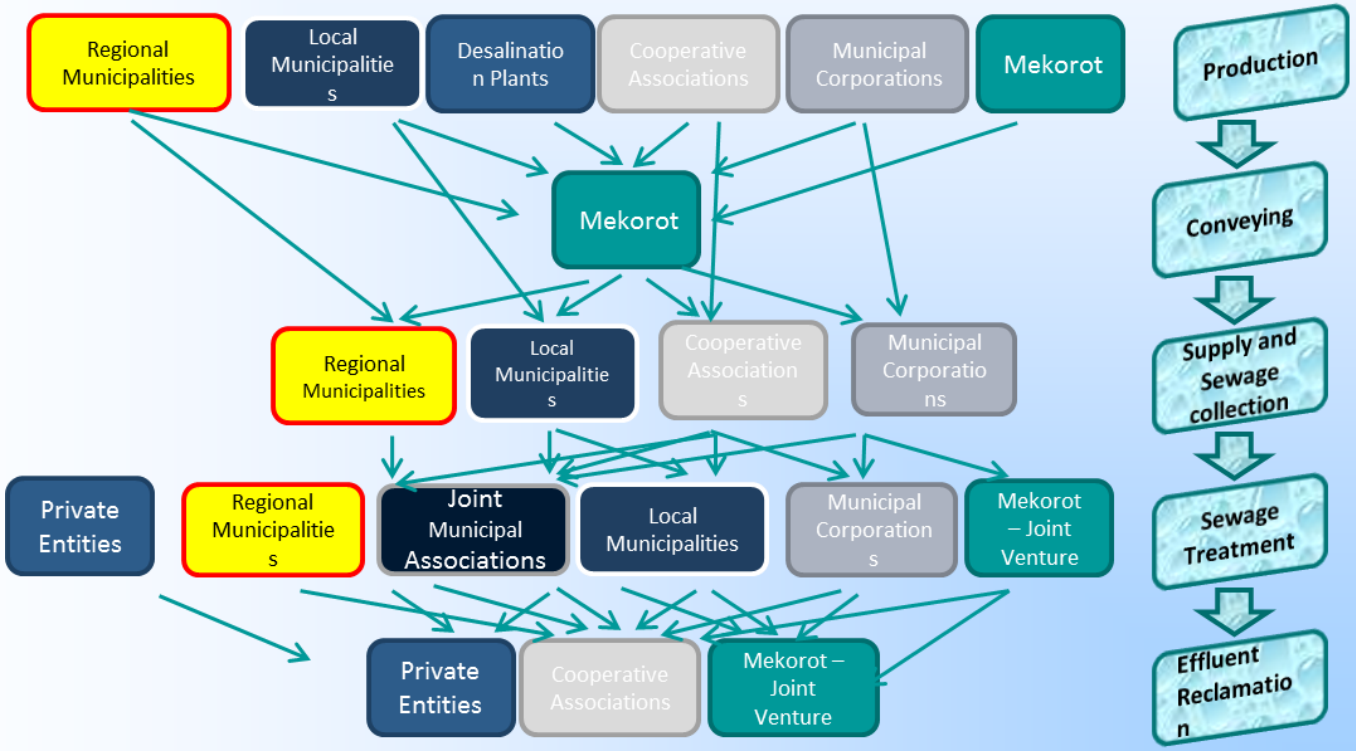
# The Water Playground - Main Players



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# Tariff Policy Principles

1. All water resources are public property, controlled by state

2. Full cost recovery - all cost covered through tariff – desalination.

3. Fairness and uniformity - Jerusalem vs. Tel Aviv different place Same tariff (costs are different ).

4. Tariffs sets – all tariffs under control of Israel water authority

5. Revenues from tariff – source of financing each utility

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# Two established policy principles:

1. All water resources are public property, subject to the control of the state (as trustee). There are no private water rights or resources.

2. Full cost recovery- the economic policy is based on tariffs that cover the recognized costs of various supply services, and thereby creates an efficient use of the water resources.

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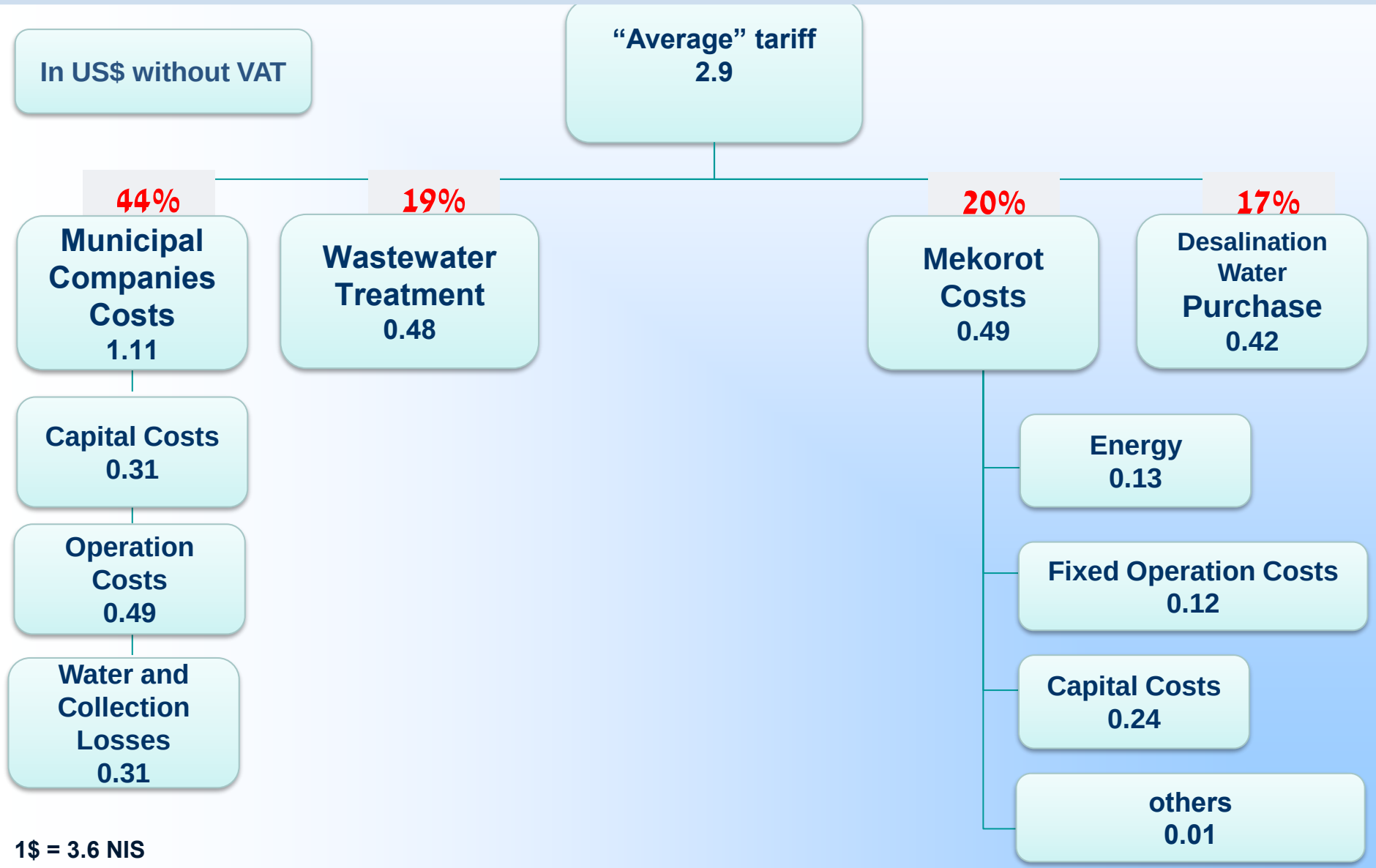
# Water Tariff Components, USD – 2023




1$ = 3.6 NIS

# Water Tariffs – Household, 2023

## Two-block tariff system ( water+ sanitation + vat)

- Below 3.5 m3/person/month - the rate is ~ 2.12 $/m3
- Above 3.5 m3/person/month - the rate is ~ 3.9 $/m3

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

1$= 3.6 NIS

# Water Tariffs - Agriculture Sector, 2023

- Reclaimed wastewater for limited irrigation is ~0.33 $/m3
- Reclaimed wastewater for unlimited irrigation is ~0.45 $/m3
- Potable water for Agriculture  is ~0.55 $/m3

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# Full cost recovery of water prices

1. Usable water from all sources - natural, brackish, desalinated and even effluents – is a rare public resource and therefore should be regulated, using hydrological operational and economic considerations.
2. The economic regulation is based on tariffs that cover the recognized costs of various water supply services, and therefore creates an efficient use of this resource.
3. The economic regulation is subjected to sectorial and political agreements, such as the agreement with the agricultural sector and the water supply agreements with Jordan & the PA.
4. Unrealistic tariffs => enhanced demand => risk of water supply crisis.
5. Realistic cost based tariffs => efficient allocation of water.
6. Significant increase in water supply costs (Desalination) and therefore an increase in cost based tariffs

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## Water tariffs for the agricultural sector:

### The goal -

- economic based tariffs for agricultural sector by gradual replacement of subsidy trough water tariff with direct subsidy to farmers/economic based tariffs.

### The assumption-

- A part of The agricultural sector would not be able to pay water rates that are based on realistic costing.

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# Setting the Water Cost for the Israeli Market

Calculating the water cost should reflect the overall cost for supplying water in the National Perspective -

- The total of the overall water supply includes the scope of the consumption capacity - meaning an increase of desalination, even if it services the national market, which results in directing natural water for the consumption of private suppliers. Therefore, all of the water consumers should pay the cost from the desalination and distribution value, with respect to generating and distributing from the natural sources.
- All of the water belongs to the general public, therefore, the tariff for similar water services (generating and distributing) should be uniform (as best as possible) for all of the water market consumers (similarly to the electricity market, communication market, etc.)
- By this calculation, this is the required “Average Tariff” for covering the recognized costs of the fresh water generating and distribution, which is approximately 2.8-2.5 NIS per cubic meter.
- In the coming years, in light of the projected additional increase of the desalination system, and in light of the massive investments in the water market (that include connecting areas in the periphery, and ensuring supply reliability), this “Average National Tariff” is projected to increase by approximately10% by 2028.

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# Objective of the Proposed Regulation

- Asses the decreased reliability for the agricultural consumers, and reflect it in a differential tariff between agricultural purposes and the rest of the uses
- Gradually reduce the balance of the gap (the subsidization) between the agricultural purposes tariffs and the other uses, until it is canceled
- Setting reasonable tariffs for the agricultural market on all of the various water types using a proper tariffs scale

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# Base Tariff - The Water Cost in the System

- Reliability Level - Measured by the following scales:
  - **Available Water Supply** –When several consecutive drought years occur, it is possible that Israel will not have enough water to meet the projected demand of all of the consumers.

The agricultural sector supplied with fresh water is the “first in line” when it is necessary to cut the volume of the supplied fresh water due to a weak hydrological situation, as it happened in the past in every sequence of drought years: 1989-1991, 1999-2001, 2008-2009, and even recently in 2014 and 2018.

  - **Malfunctions in the Water Supply** – Inability to provide water services as a result of systems malfunctions, water security incidents, or due to other reasons (initiated maintenance actions).
    - It is common practice to use backup systems for households in the residential market
    - Should a malfunction occur, households in the residential market are prioritized over agricultural purposes consumers
- **Water Quality** - Some water supply systems intended for agricultural purposes are based on surface water. The water quality they supply is not for drinking purposes, and since the water is supplied only for agricultural purposes, the water betterment component for providing drinking water can be forewent.

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# Water Supply Reliability Cost Setting Method

**Two alternatives were set for the base tariff**

**1. Full Supply Reliability for Agricultural Purposes**

- **In this alternative, the agricultural sector is "eligible" for the same supply reliability as the supply reliability provided for the residential sector's consumers within the scope of the multi-annual aspect and the local operational aspect** (unlike the current situation when the agricultural sector is ineligible for supply reliability components, such as diesel for generators, an extra pump, etc., and in every crisis regardless of its cause, water security/malfunction, the consumption for agricultural purposes is reduced).
- **In This Alternative: Target Tariff for Agricultural Purposes = Average Cost**

**2. Reduced Supply Reliability for Agricultural Purposes**

- In this alternative, it is possible under extreme situations **to reduce the water supply for agricultural purposes in a limited manner, and to this end make less investments on a day-to-day basis, as well as reduce the desalination objective.**
- The **Objective Tariff** is intended to be **lower than the average cost.**
- In order to asses the proper difference between the residential purposes tariff and the agricultural purposes tariff, a comparison of the average cost between the two aforementioned situations was made.

The gap in the water market with respect to the investments and costs was reflected by two components:

1) Postponing the building of 100 million cubic meter of a desalination facility by 4 years at a time.
2) Reducing 50 million NIS in the annual investment.

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# Water Supply Reliability Cost Setting Method (Continued)

It was found from the simulation that was carried out **that there was a *0.22 NIS per cubic meter* gap between the residential purposes tariff and the agricultural purposes tariff** in the second alternative, which leads to an **identical tariff for residential purposes** presented under alternative 1. (Under alternative 1, both the agricultural sector and the residential sector pay the average cost)

**This situation meets the set "0" subsidization by the target date.**

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# Setting a reduced cost for inferior quality fresh water

Just as the agricultural sector uses waste water, they can also make direct use of surface water without applying significant treatment to the water, as would have been required for supplying for residential purposes. The direct use of surface water saves on costs for the water market on the one hand, and diverts additional costs on the agricultural purposes consumer on the other hand.

**There are several approaches for pricing the proper difference in this case:**

1. **The treatment cost for bringing the water up to par** for distribution in the regular supply systems. Subsequent to reviewing, it was found that this cost ranges **between 0.45 NIS per cubic meter and 0.3 NIS per cubic meter**, pending the facility's size (sub-par alternative with respect to the market, and with respect to the agricultural purposes consumer).

2. **Since there is no ban or restriction on using the same surface water for agricultural purposes - no reduction is necessary**

3. **Distributing the Savings From the Water Treatment Between the Entire Market and the Surface Water Users –** Reducing the surface water cost by **0.17 NIS per cubic meter**. Presumably, this is the efficient alternative.

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# Thank You