



PENGON *The Palestinian Environmental NGOs Network*



**Friends of
the Earth**
palestine

Water and Climate in Palestine

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PENGON- FoE Palestine

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CONTROL

Israel retains control over all sources of water in the West Bank and retains significant control over water resources in Gaza

Israel extracts close to 90 per cent of the water from the aquifer underneath the West Bank

Palestinians have no access to the Jordan River

1995 Oslo II: greater Palestinians dependency on Israel

Interim Agreement= 5 years

Ground water resource	Israel's annual allocation	Palestine's annual allocation
Western Aquifer	340 MCM (94%)	22 MCM (6%)
Northeastern Aquifer	103 MCM (71%)	42 MCM (29%)
Eastern Aquifer	40 MCM (42%)	54 MCM (58%)(+ 78 for future needs)
Totals	483 MCM (or 80 % of the total)	118 MCM (or 20% of total)

Oslo quantities allocated to Palestinians haven't been met, Palestinians extract less water today than they did before Oslo.

Contrast with Israeli settlements

Average water consumption:

Palestinians: **50-70 lpcpd**

Israelis: **300 lpcpd** (settlers at 369 lpcpd)

WHO recommended: 100 lpcpd

Large discrepancies within same area:

Israeli settlement	Liters/Person/Day
Ro'i	431
Niran	433
Argaman	411

Figures by BTselem

Nearby Palestinian village	Liters/Person/Day
Al-Hadidiya	20
Al-Oja	82
Al-Zubeidat	82

Prime beneficiaries of appropriation of shared water resources are Israeli citizens, settlers in particular, at the expense of Palestinians



The West Bank

Permits “blackmail”

Large water infrastructure projects in the West Bank require Joint Water Committee (JWC) approval. Israel conditions approval of essential Palestinian projects to Palestinian approval of settlement projects.

Result:

- ✓ **Aprox. 200 000 people** with no connection to the water network paying up to **400 %** more for every liter of water than those connected
- ✓ Only **one** Palestinian-operated wastewater treatment plant
- ✓ Less than **a third** of the communities in the West Bank are connected to the sewerage network, with the remainder dependent on self-installed cesspits and septic tanks

Area C: settlers represented in planning committees deciding on fate of Palestinian communities

Water infrastructure demolition rates in 2012 have persisted.

Denial of access to water trigger for displacement, particularly in areas slated for settlement expansion (Jordan Valley, south Hebron hills)

• West Bank

- Between 2009 and 2011 the Israeli military has destroyed:
- **173** water, sanitation and hygiene (WASH) structures in the West Bank including:
 - **57** rainwater collection cisterns.
 - **40** wells supplying communities with water.
 - Irrigation equipment vital for food production and at least **20** toilets and sinks

Cistern demolition in the south Hebron hills

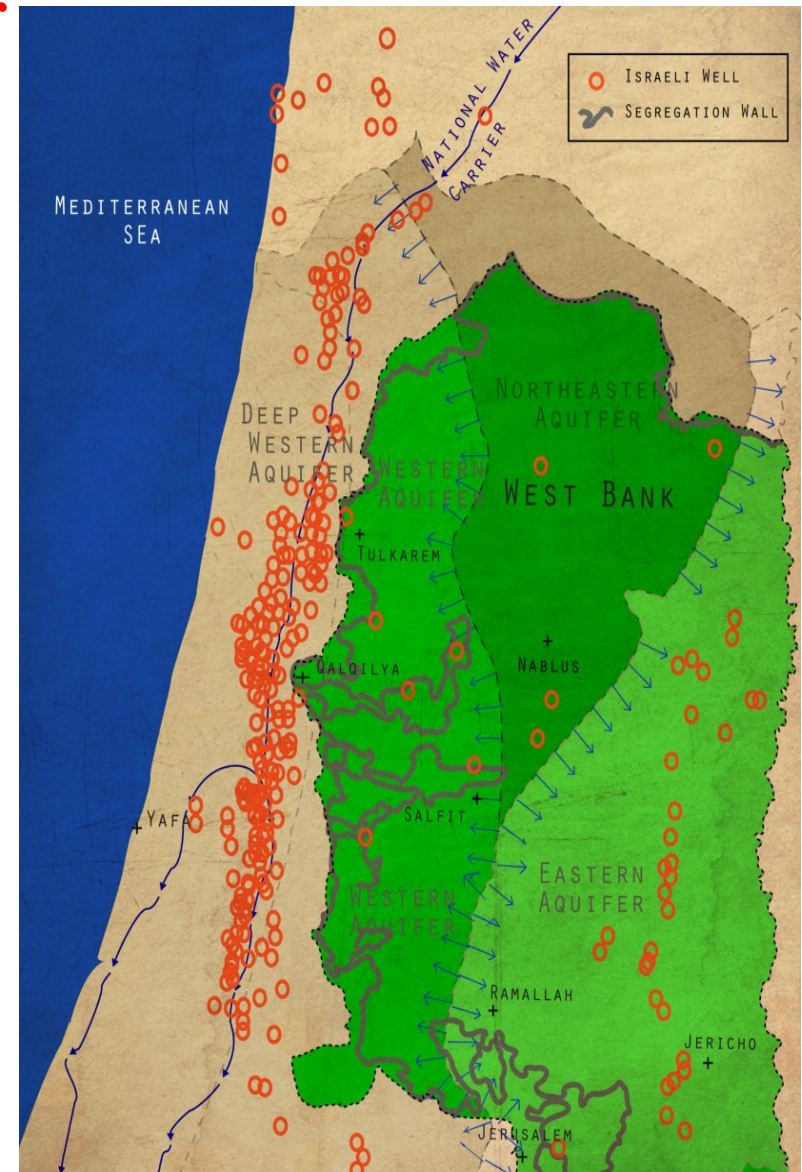


Consequences of settlements on access to water

Settlement infrastructure has been planned to take into account expropriation of water resources. Route of the wall takes into account key catchment areas for future extractions from strategic western aquifer

Violent actions from Israeli settlers have restricted or denied Palestinian access to water resources (springs)

Several Israeli settlements in the West Bank do not treat their wastewater



Mekorot: Israel's national water carrier

- Palestinians in the West Bank have to buy over half of their water from Mekorot (extracted from the West Bank!) at insufficient quantities
- Israeli settlements supplied by wide high pressure pipelines and Palestinian communities much smaller diameter pipes
- Discriminatory pricing policy (settlers subsidised on water for agriculture)
- Mekorot now with business contracts in US, Brazil, Argentina, India, Portugal and expanding on basis of its experience in the West Bank

Downstream from Ariel settlement wastewater pipe



- 69 % of West Bank Palestinians not connected to mains sewerage and dependent on cess pits and septic tanks, often emptied directly into surrounding environment—a direct result of inability to develop adequate sewage and wastewater treatment and management.
- 40% of the sewage produced in the West Bank originates from the settlements. Each year, settlements dump approximately 35 MCM of sewage in the environment, damaging Palestinian fields and water resources.



The Gaza Strip

Outflow pipe for Khan Younis Wastewater Treatment Plant

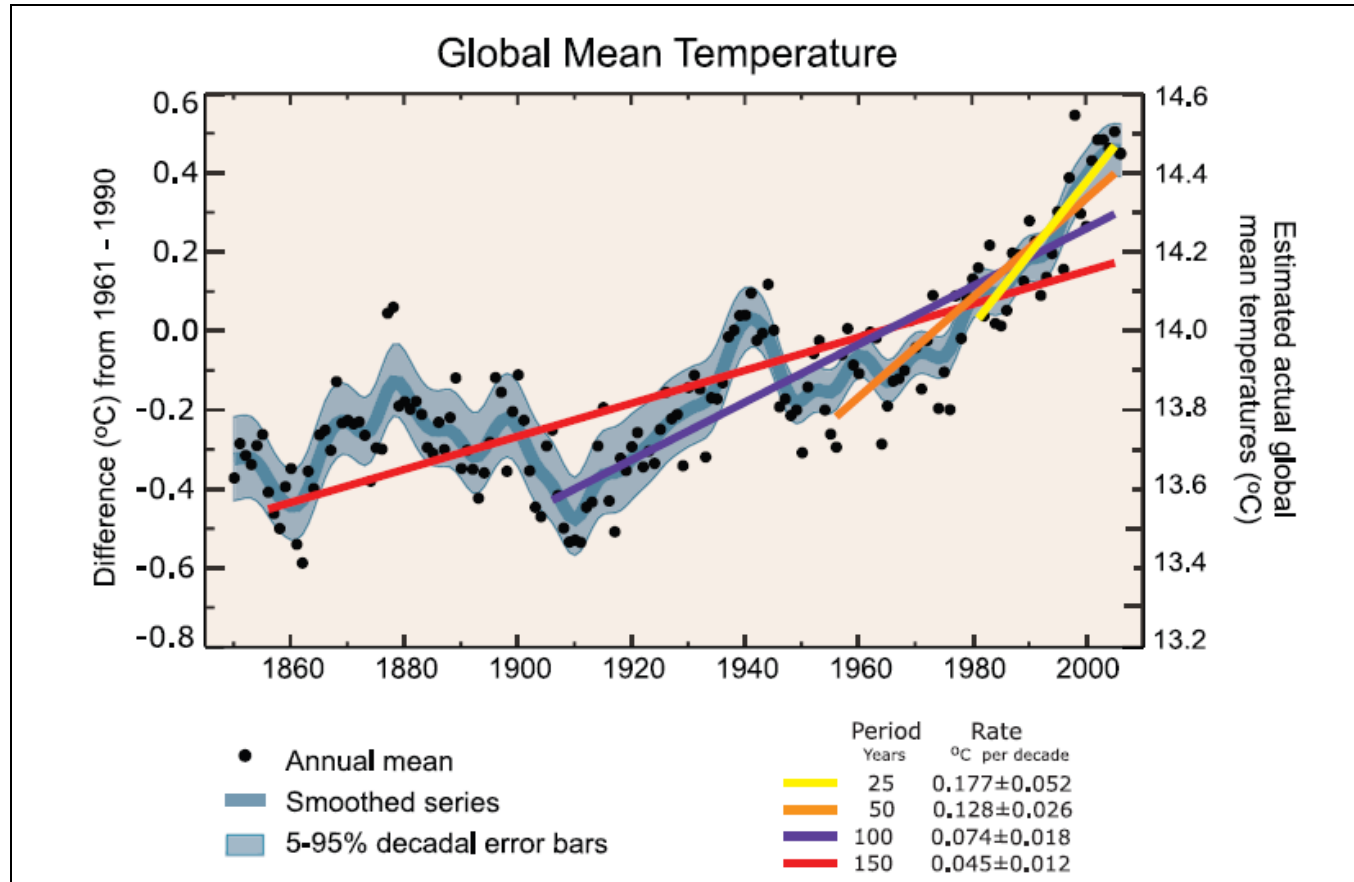
- Coastal Aquifer, Gaza's sole source of fresh water, unsuitable for human consumption
- UN estimates aquifer unusable by 2016 leaving 1.7 million Palestinians with no alternatives
- Dependence on desalinated brackish water for drinking. However, this is expensive.
- 60% of households connected to sewage network. However, sewage treatment plants stretched beyond capacity; **85-90 million litres of sewage** are dumped in the sea every day.

Effect of the blockade on water and sanitation in Gaza

- Israel prevents entry of essential materials necessary for construction and rehabilitation of water and sanitation infrastructure (94% of items cleared to enter in principle according to July 20, 2010 guidelines)
- Restricted fuel and electricity necessary to operate water and wastewater services
- At times has delayed entry of essential water purification chemicals such as chlorine.

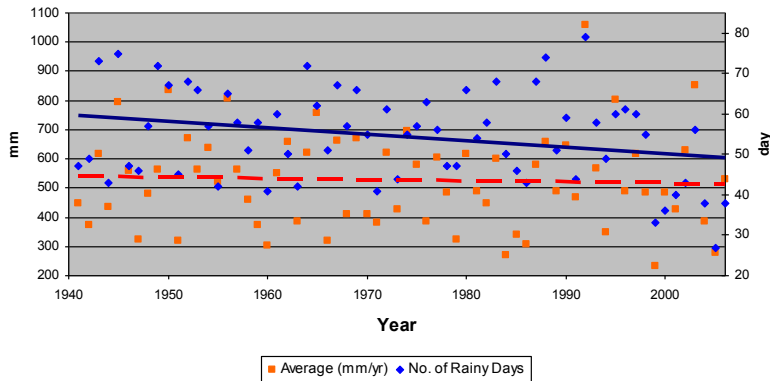
Climate Change in Palestine

Global Temperature Trend Analysis



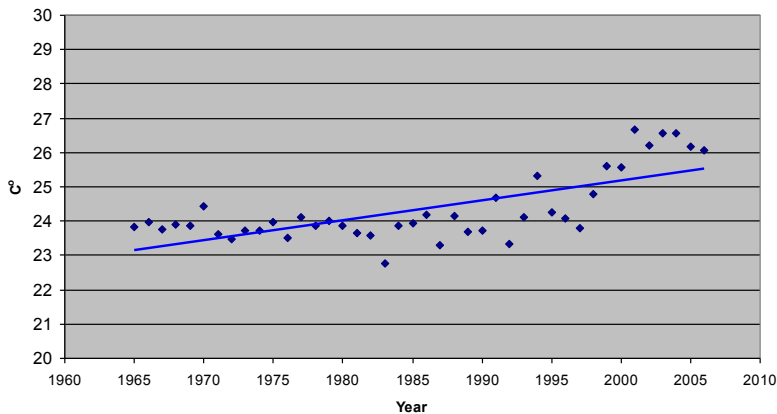
St#1

Yearly Rainfall for St#1

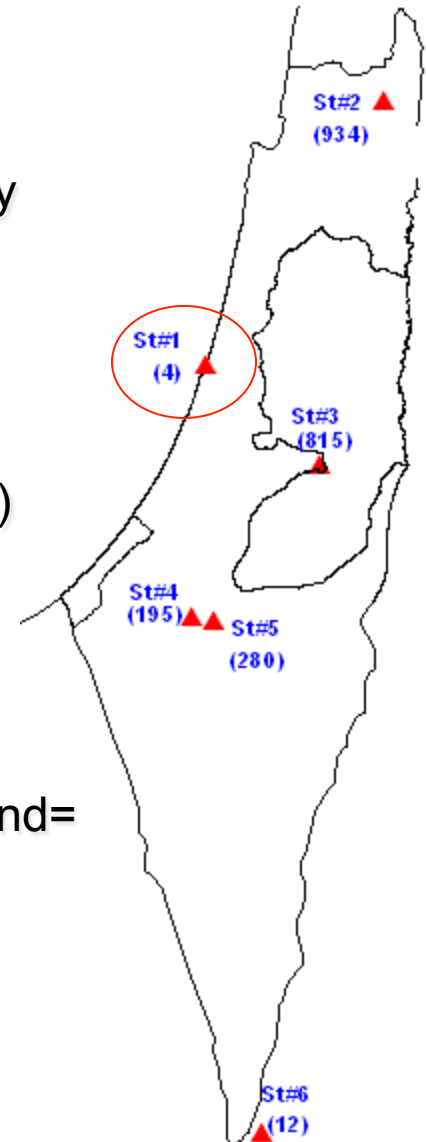


- Period: 65 years
- Mean annual average rainfall= 526 mm/yr
- Mean annual average rainy days= 60 days
- Change in rainfall trend= -22.4 mm (decrease)
- Change in rainy days trend= -10 days (decrease)

Average Yearly Temperature



- Period: 41 years
- Mean annual average temperature= 24.3 C°
- Change in temperature trend= 2.3 C° (increase)



Climate Change on Water

Climatic Parameters

Rainfall

Temperature

Humidity

Impact

Floods

Drought

Scarcity

Climate Change Impact

Soil

Soil degradation

Desertification

Soil Salinity

Fertility

Agriculture

Behavior

Quantitative & Qualitative

Floods in Palestine

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Thank You

