What are the challenges of ensuring the sustainability of desalinated water in Gaza Strip?

Seawater desalination is energy intensive. In recent years, however, Gaza Strip has faced an acute energy shortage, with the electricity grid in Gaza Strip running for only limited hours each day. This means that the desalination plant often operates using emergency diesel generators. Fuel secured through United Nations' humanitarian funding has allowed the plant to function at reduced production capacity (10-15%) providing drinkable water to families; however, such an operational model is unsustainable. The desalination plant has recently been equipped with solar panels to supplement electricity from its diesel generators. UNICEF, through EU funding, installed Gaza Strip's largest solar energy field to increase the sustainability of the desalination plant.

Sea Water Desalination Plant

For the Southern Governorates of the Gaza Strip

EUROPEAN UNION

unicef
for every child

The EU funded Southern Gaza Seawater Desalination Plant, implemented by UNICEF

What is the problem with water in Gaza Strip?

Safe water in Gaza Strip is in short supply. Overextraction of the aquifer underneath Gaza Strip, and contamination of this aquifer by pollutants has meant that largescale access to potable ground water in Gaza Strip is now unsustainable. Some 96 per cent of the water extracted from Gaza Strip's sole underground water source is now unfit to drink.

Most families buy drinking water privately at high cost and without quality control. The high price of privately supplied water places a significant strain on most families in Gaza Strip. Women and young children are particularly vulnerable.

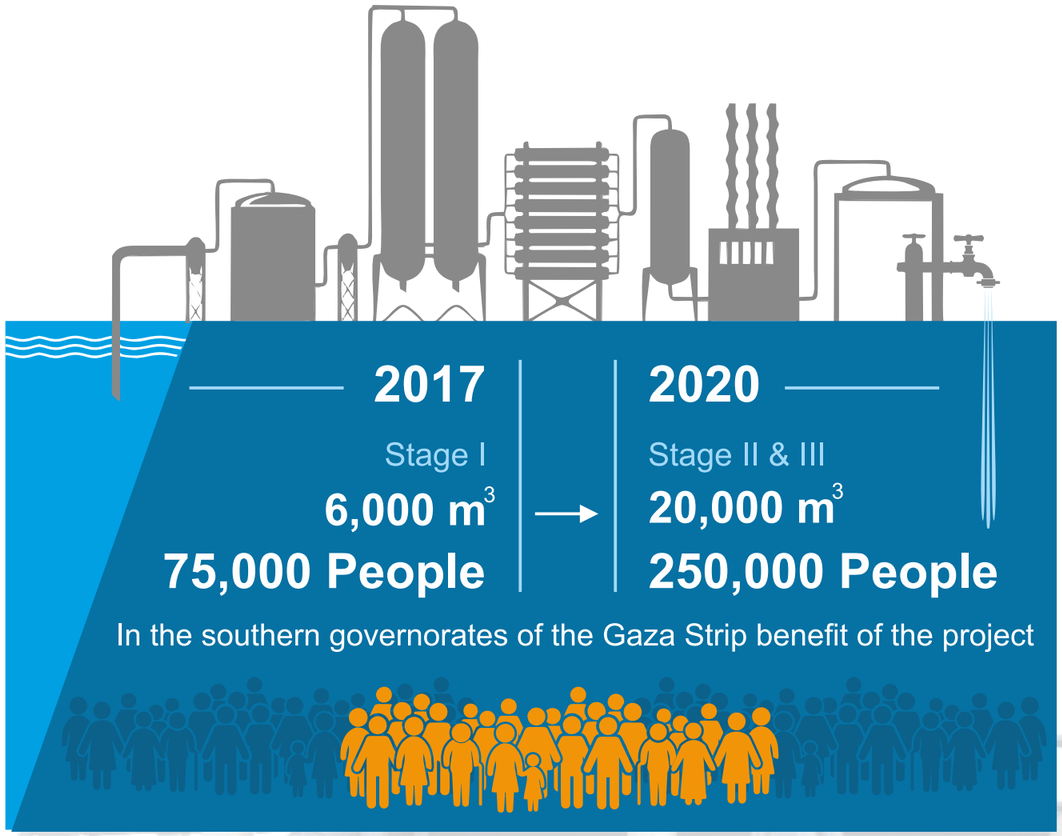
Israel's blockade of Gaza Strip, which has been in effect since 2007, has also prevented the entry of material for fixing and developing water infrastructure, and shortages of fuel for electricity production has meant that many water treatment plants cannot clean enough water.

What is being done about the water problem in Gaza Strip? How is the EU and UNICEF helping?

Given Gaza Strip's proximity to the Mediterranean Sea, seawater desalination is a strategic priority adopted by the Palestinian Water Authority (PWA) to provide safe drinking water. There is currently no large-scale realistic alternative in Gaza Strip to desalination.

In September 2012, the European Union (EU) partnered with UNICEF to build a seawater desalination plant to serve the southern governorates of Khan Younis and Rafah daily with up to 20,000 m^3 of safe drinking water. Construction of the plant in the southern-central Gaza Strip began in October 2014.

The first stage of the desalination plant is completed, with a capacity to desalinate up to 6,000 m^3 of water for users in southern Gaza governorates. In 2020, the plant will be expanded in Phases II and III to produce 20,000 m3 of water when running at full capacity. This is enough water to meet the needs of some 250,000 people.



What would happen if nothing was done to address the water problem in Gaza Strip?

Desalination of seawater from the Mediterranean is required to curb further overextraction of groundwater from the aquifer, to prevent an environmental disaster, and to begin aquifer restoration. If desalination of seawater from the Mediterranean did not occur, over- extraction of the aquifer would mean it would be irreversibly damaged.

How much impact will the desalination plant have on the water problem in Gaza Strip?

The development of a desalination plant that can provide 20,000 m^3 of water provides diversity to the water supply market, decreasing extraction from the aquifer. As people come to trust desalinated water, keep it clean in domestic water tanks, avoid waste, and understand how paying their water bill contributes to water sustainability in Gaza, this impact will increase.