

# Past and future trends of water consumption in Egypt

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## Video Abstract

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# Abstract

For thousands of years, the Nile has provided bountiful gifts to the people who make their home around its banks, offering food, a means of transport, irrigation, and fertile soil. But there is a limit to how much the Nile can give. Already in the 1970s, Egypt began fully utilizing the available resources of the Nile. Any additional demand has been met virtually, through imports of food. Now, research suggests that within the next decade, Egypt is poised to import as much “virtual water” as it receives from the Nile. In a new study from MIT, researchers compiled water and crop data for Egypt spanning the past 60 years. That gave them one of the most detailed looks at modern water use ever produced for the country, and helped them understand Egypt’s trade in “virtual water”. Virtual water refers to the hidden flow of water in food and commodities. For example, it takes about 1100 tons of water to produce one ton of maize in Egypt. So importing one ton of maize is like injecting 1100 tons of water into the system. For years now, Egypt has been steadily increasing its importation of virtual water through crops like wheat and maize to satisfy its growing population. Other ways the country has managed water supply and demand include the construction of the High Aswan Dam, improving crop yields, expanding water reuse, and reducing population growth. The problem is that at the current pace of population and economic growth, by the year 2030, the amount of virtual water Egypt imports will surpass the amount of real water the Nile can possibly supply, nearly 62 cubic kilometers. Egypt could be forced to look to the market instead of its own resources to meet demand. That’s a strong signal that current measures for managing water use must be intensified or revamped if Egypt is to have a sustainable water supply for the coming generations. One solution could be to leverage the country’s high agricultural yields and expand their share of natural water resources by exporting high-value, high-water-efficiency crops, like fruits and vegetables, and continuing to import low-value, low-efficiency groups, like grains. Other proposed solutions include pricing water to reflect scarcity, improving irrigation efficiency, adopting new cropping patterns, and curbing population growth. To be sure, no single solution is likely to compensate for all additional needs the country will encounter in the coming decades. A combination of adaptations is necessary to enable continued growth and prosperity with more careful management of natural resources. The key is change. If changes aren’t made, Egypt could soon serve as an ecological cautionary tale to other water-scarce nations—bringing into question the historical depiction of the region as “the gift of the Nile.”