



## Geography and Economics Activity

### Technology for Farming Dry Lands

Little rain falls in North Africa and Southwest Asia. To grow enough food, the people rely on technology. **Technology** is the application of knowledge for practical purposes. Technology can be a new machine. It also can be an improved method of doing something.

One type of farm technology is irrigation. **Irrigation** is the use of artificial methods to bring water to dry lands. For centuries, Egyptians built basins in their fields near the Nile River. The Nile's annual floods filled the basins. When the floodwater withdrew, the farmers used the trapped water for their crops.

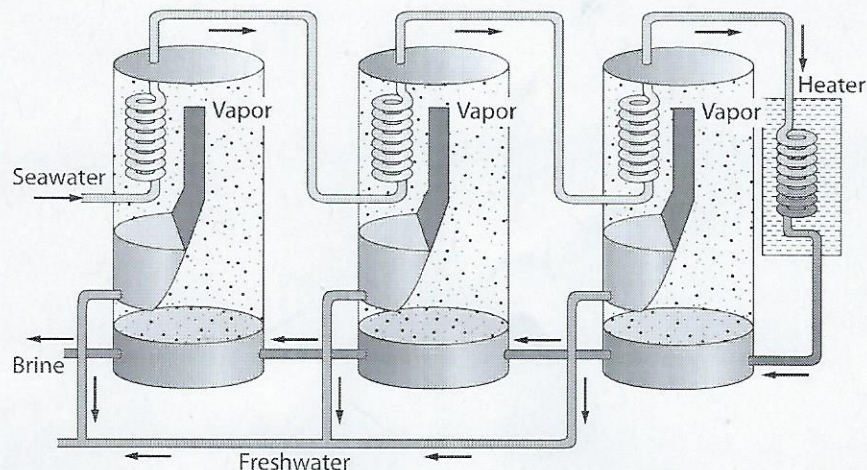
Today Egyptian farmers no longer have to depend on the Nile's annual floods. They have replaced basin irrigation with new technology. Dams control floodwaters and store water. Pipes and canals make this water available to farmers throughout the year.

Israel has increased its farm production using a method called **drip irrigation**. Narrow plastic tubes deliver small amounts of water directly to the roots of each plant.

In order to irrigate, farmers need freshwater. Saudi Arabia and Israel obtain some freshwater through **desalinization**—removing the salt from seawater. The diagram below illustrates the process. The seawater is pumped in and heated. Heating causes some water to *evaporate*, or change to vapor. The remaining liquid, called *brine*, contains the salt. The brine is discarded. The vapor is condensed back into liquid and drawn off as freshwater. Researchers are working on new technology to make the process less costly.

Irrigation is only one technology that increases food production in dry regions. Improved fertilizers also increase the crop yield per acre. Another new technology is the development of improved varieties of plants. For example, Israeli farmers plant Negev tomatoes. This type of tomato can thrive on the salty water found underground in the Negev desert. The graph on the next page shows the increase in food production in three dry nations. Improved technology is the main reason for this increase.

**Water Desalinization**



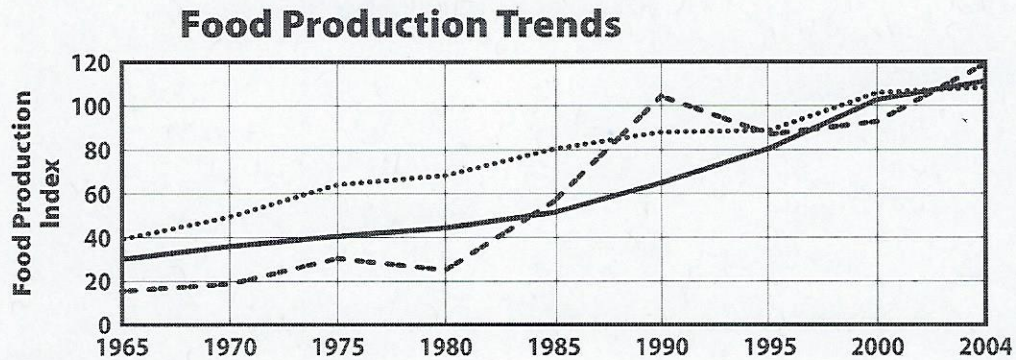


# Geography and Economics Activity

continued

## Thinking Economically

**Directions:** Examine the information and diagram on the previous page and the line graph below. Then answer the questions that follow.



Source: Food and Agriculture Organization of The United Nations (FAOSTAT), March 17, 2006.

- Defining** What is *technology*?  
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- Identifying** What are four examples of farm technology that have improved food production in Egypt and Israel?  
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- Analyzing Visuals** In the diagram, what method is used to separate freshwater vapor from brine?  
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- Cause and Effect** What is a main reason for the food production trend shown in the graph?  
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- Analyzing Visuals** Which country on the graph increased its food production the most between 1980 and 1990? How do you know?  
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- Making Connections** Give an example of technology that helps you learn in school.  
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- GOING FURTHER** Do further research on food production technology. Research topics may include drip irrigation or another type of irrigation, improved fertilizers including bio-fertilizers and crop rotation, genetically improved seeds and/or plants, and desalination. After researching, summarize your information in a PowerPoint presentation. Present your research to the class.

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