

IRRIGATION

Mesopotamia became one of the richest granaries in the ancient world. Wheat, barley, dates, and a variety of other fruits and vegetables thrived. Crops were often traded for stone, metals, or other goods from neighboring lands.

But farming the Fertile Crescent between the two great rivers was not an easy task. At the end of summer's dry season, the rivers trickled slowly through a desolate land of sunbaked mud. Winter rainstorms brought more water to the rivers, but not nearly a full load. By spring, melting snow from the nearby mountains fed the tributaries, and floods threatened the river plain and its crops.

This almost uncontrollable surge of water usually came between April and June—too late for watering the bulk of the crops, which were ready for harvest in April.

The solution was irrigation, routing water to dry land. The Sumerians became skilled engineers, digging ditches and building a complex system of canals, reservoirs, and dikes. Huge canals connected the river tributaries, and smaller canals branched off. Smaller irrigation ditches tapped water from the canals, making the land a maze of artificial waterways. To irrigate their smaller gardens, farmers used simple water-lift devices, a method still used in Iraq today. The entire system was so well-designed that directing water wherever it was needed was easy.

There was another advantage too. By quickly distributing excess water, the web of canals and irrigation ditches provided built-in protection from floods.

But skilled technology couldn't completely control the power of running water. Harnessing the rivers meant fighting a constant battle with nature. Canals and ditches quickly filled with silt and clay, which had to be scooped out and piled on nearby banks. And even then the problem wasn't solved. Piles of silt along the canal banks became so high that new canals had to be dug alongside the old ones. Today, airplane passengers can see an amazing network formed by the ancient channels. Some have as many as three sets of canals, lined side by side.

Even in ancient times, technology had its negative side. River water was high in salt, and as it evaporated the salt stayed behind as a white crust in the fields. In areas of heavy agriculture, salt built up faster than rainwater could carry it away. Farmers began growing more barely, which tolerates salt better than wheat. When barely could no longer grow, farmers moved to new ground, and the destructive process began again.

By 2000 B.C. the Sumerians had begun experimenting with ways to fight the salt problem or at least slow its damage. At the same time, they were learning other ways to make agriculture more productive. An agricultural manual from 2100 B.C. describes simple methods of draining land and of letting fields rest for a season or more between plantings.