

The Aral Sea: An Environmental Crisis

1 For decades, environmental scientists have warned of the ecological damage that results from poorly planned economic development. As land clearing in many areas of the world has shown, apparently reasonable solutions to the need for more employment, housing, and food are often shortsighted. In the worst cases, these solutions have the potential to render an area unlivable. One of the world's most extreme cases of ecological disasters is the Aral Sea region, located between Kazakhstan and Uzbekistan. This region is a clear example of the damage that poorly planned human economic activity can have on the environment.

2 In the 1960s, this inland sea was the world's fourth largest lake. Its basin extended into three other countries, and the sea covered 26,300 square miles (68,000 square kilometers), roughly the same size as Belgium and the Netherlands combined. It had a mean depth of 52 feet (16 meters), and its waters were fresh with a low salt content of about 1 percent. Two large rivers, the Amu Darya and the Syr Darya, flowed into the sea. The water from these rivers, combined with the annual rainfall, maintained the volume and level of the water. Although the land around the sea and the rivers was dry and desertlike, the region still supported a wide diversity of wildlife, including 500 species of birds, 200 species of mammals, and numerous species of fish.

WHILE YOU READ 1

Reread paragraph 1. Highlight the general problem and the specific example.

The Aral Sea in 2000 and 2012



3 In the late 1950s, the government of the Soviet Union decided to develop agriculture in this dry area by using water from the two rivers for irrigation. At that time, the Soviet Union was pushing agricultural development in the region as part of its national economic development plan. The government built huge farms, digging long canals to bring water from the rivers. By 1965, the Amu Darya was providing water across 7 million acres of wheat and cotton. These crops flourished with the help of huge amounts of chemical pesticides and fertilizers.



Rusting ships stand on land that was once under the Aral Sea.

4 In the short term, this plan was successful. In the early 1960s, the farms and the fishing industries saw marked economic benefits. Each year, more than 40,000 tons of fish were caught and transported by rail to Moscow. Thousands of people were employed in the boats, processing plants, and railroad yards. The irrigation system made the once dry desert fertile, encouraging more farms to be established. There were 19 villages and 2 cities on the lake. The population in the northern city of Aralsk grew to 80,000 while to the south, another 40,000 people lived in Muynak.

5 Within a few years, however, it was clear that this agricultural effort was not only unsustainable, but was, in fact, causing devastating damage to the **environment**. The Amu Darya river shrank drastically, to about half its original size by the early 1990s; its flow fell from 28,000 cubic feet (2,600 cubic meters) per second to just 5,000 cubic feet (465 cubic feet) per second. Eventually, as it receded, this river was cut off from the Aral Sea. Moreover, the reduction in volume and water flow led to increased salinity. Salt content climbed from 10 to 30 grams per liter, almost as high as the oceans. Native species of fish died out, and the commercial fishing industry collapsed. Today, huge and rusting Soviet ships remain on what was once water, a reminder of how quickly this industry fell.

6 For the residents of the region, it became increasingly hard to cope with living within this environmental crisis. To address the problem of high unemployment, the Soviet government transferred many of the fishermen to work in the Caspian and Baltic seas. However, thousands of families were left behind to struggle in the inhospitable Aral region. Their health quickly began to suffer. The land was now dry again, with salt flats stretching hundreds of miles. The pesticides and artificial fertilizers, which had been needed to support the wheat and cotton, saturated the earth. Every few weeks, dust storms kicked up hundreds of tons of salt, sand, and pesticides into the air and into people's lungs. Toxic chemicals contaminated local drinking water leading to an increase in respiratory diseases and throat cancer, and as is often the case with environmentally

WHILE YOU READ 2

Which sentence expresses the main idea?

- a) The first
- b) The second
- c) The last

WHILE YOU READ 3

As you read, highlight the negative effects of this development on the environment.

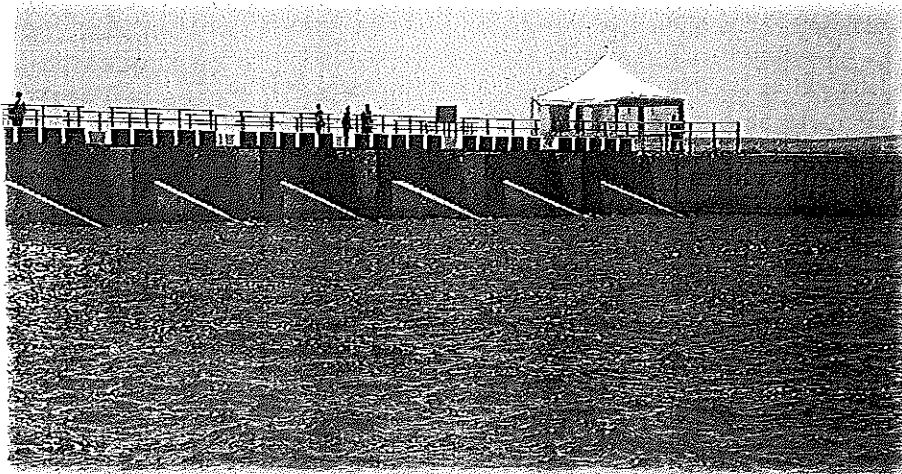
WHILE YOU READ 4

Highlight the solution marker in this sentence.

linked illnesses, infants and children were the most vulnerable. Infant mortality rose to 60 in 1,000, which was the highest rate in the Soviet Union. Tuberculosis reappeared, and by 2002, was killing more than 2,000 of the region's people every year.

7 The first real scientific response to the Aral crisis came in 1990, when a conference of international scientists met and concluded that the region was an ecological disaster area. Massive changes in agricultural practices were urgently needed to reverse the process of environmental destruction. If such measures were not taken, scientists warned that the region would become a wasteland, incapable of supporting human settlements.

8 Because of the enormous size and complexity of the crisis, practical responses were slow to appear. After the collapse of the Soviet Union, however, the World Bank stepped in, and together with the newly independent Kazakhstan, began to tackle the problem by funding extensive projects aimed at saving the northern part of the Aral Sea. By 2005, they had built a dam intended to raise the water level of the North Aral by about 13 feet.



The Kokoral Dam on the North Aral Sea

This would return the water to its previous salt level, and therefore, allow native fish to repopulate. The results were promising. The North Aral grew by 20 percent. The salinity fell to almost the 1960 level, and freshwater fish returned. The fishing industry slowly rebounded, with 1,500 tons caught in 2008. Today, fish-processing plants are operating again, providing badly needed employment. However, the cost for this improvement has been high. Furthermore, the condition of the South Aral Sea has continued to worsen, and scientists predict that it will be completely dry by 2020.

9 Unfortunately, the case of the Aral Sea region is not unique. It is one of many examples of poorly planned economic development that has devastating ecological consequences. However, while the Aral Sea is a clear warning for the catastrophic dangers of this type of development, the continuing survival of the North Aral also offers hope for ecologically-damaged areas as well as for sustainable development worldwide.

WHILE YOU READ 5

Reread paragraph 8. Highlight the problem and solution markers.