

## EUROPE

# Human-Environment Interaction

All questions require at least  
**THREE** sentences on own paper.

**PLACES & TERMS**

**dike** earthen banks that hold back water

**polder** land reclaimed by diking and drainage

**seaworks** structures used to control the sea's destructive impact on human life

**terpen** high earthen platforms that provide a place of safety during floods and high tides

**Zuider Zee** an arm of the North Sea that the Dutch transformed into a freshwater lake

**Ijsselmeer** name of the freshwater lake created from the Zuider Zee

## Polders: Land from the Sea

***How** did the Dutch get more land?*

The Dutch needed land for their growing population. So they reclaimed land from the sea. To do this, the Dutch built **dikes**, earthen banks to hold back the sea. Then they drained the water off the land. Land that is reclaimed by diking and drainage is a **polder**.

At least 40 percent of the Netherlands was once under the sea. Because of this, much of the Netherlands is below sea level. As a result, if a dike breaks, the sea floods in and causes destruction.

The Dutch erected **seaworks**. These are structures that help reduce the destruction that the sea causes. The seaworks include dikes and terpen. **Terpen** are high earthen platforms that are safe places to go during floods and high tides.

Over the centuries, the Dutch found ways to make dikes stronger. They also learned to control water in low-lying lands. One way was to pump

water from the land. In the 1400s, the Dutch added **windmills** to power the pumps. Today, electric motors power the pumps.

The Dutch also changed their environment by changing the **Zuider Zee**. This was once an arm of the North Sea. Now it is a freshwater lake. The idea was first proposed in 1667. In the 1800s and 1900s, the Dutch finally made a plan to build dikes all the way across the entrance to the Zuider Zee. The dikes stopped saltwater from flowing into that body of water. In time, it became a freshwater lake called **Ijsselmeer**. The land around the lake was drained. This created several polders that added hundreds of square miles to the Netherlands.

### 1. Why were windmills important to the Netherlands?

Answer in at least **THREE SENTENCES** on own paper.

## Waterways for Commerce: Venice's Canals

### **How** did Venice grow?

Humans also created a unique environment in Venice, Italy. The city is on about 120 islands and part of the Italian *mainland*. Venice has more than 150 canals that snake around and through the islands. Venetians use the canals to move people or goods.

People escaping invaders founded Venice. They took shelter on a cluster of islands in a *lagoon*. The land was swampy and hard to live on. But it was located on the Adriatic Sea, so it was a good site for a port. Trade helped Venice grow.

To build on swampy land, Venetians sank wooden *pilings* into the ground. They constructed buildings on top of the pilings. Venetians needed so much wood, they completely cut down oak forests in northern Italy and Slovenia. Over time, the weight of Venice's buildings squeezed the ground underneath. This is one reason why Venice is slowly sinking. Another reason is that the sea level is rising. And people have pumped too much water from the ground, which also makes the city sink.

Industrial waste and sewage have created severe water pollution in Venice. This pollution and saltwater eat away the *foundations* of buildings. In addition, floods threaten the city.

Another problem is agricultural runoff. Farm chemicals run into Venice's harbor. The chemicals make algae grow too much. When the algae die, they create conditions that kill fish, and dead fish create a stench.

### **2. Why did people choose to build Venice in this location?**

Answer in at least THREE SENTENCES on own paper.

## A Centuries-Old Problem: Deforestation

### **What** is deforestation?

Deforestation is the clearing of forests from an area. People have been clearing the forests of Europe since ancient times.

Forests provided wood to burn for fuel. People also used wood to build ships and houses. Europeans began to develop industry in the 1700s and 1800s. As a result, they used even more wood to make charcoal, which industries used in blast furnaces. In time, people used coal as a fuel in place of wood. By then, it was too late. Huge areas of Europe had lost their native forests.

In the 1960s, people noticed that many trees in Germany's Black Forest were discolored. Those trees were losing needles and leaves, and dying. Scientists found that acid rain was one cause of tree death. Factories put out high amounts of sulfur dioxide and nitrogen oxide. These combine with water vapor and oxygen to form acid rain or snow. Winds carry the *emissions* to other parts of Europe. About one-fourth of European forests have been affected.

### **3. What has caused the deforestation of much of Europe?**

Answer in at least THREE SENTENCES on own paper.