

## Neolithic Revolution

Around 10,000 years ago (8000 B.C.E.), as the climate was warming up from an Ice Age, a collection of social and political developments coalesced into what is called the *Neolithic Revolution*, a set of dramatic changes in how people lived based on the development of agriculture. These changes are sometimes called the Agricultural Revolution. This "revolution" did not happen instantaneously, nor did it occur everywhere at the same time, nor did it affect everyone directly. For example, the Neolithic Revolution in China dates to 5000 B.C.E., whereas in the Middle East, it can be dated to around 8000 B.C.E. It can be characterized by several major developments:

1. agriculture
2. pastoralism
3. specialization of labor
4. towns and cities
5. governments
6. religions
7. technological innovations

**Agriculture** Taking advantage of a warmer global climate following the end of the last Ice Age, some hunter-forager cultures learned to grow crops by putting seeds of wild plants into the ground. They gave up their nomadic way of life to stay in one place and take up *agriculture*, the practice of raising crops or livestock on a continual and controlled basis. As they learned to plant, tend, and harvest crops, people found they often had a *surplus*, or more than they needed for themselves. The development of agriculture occurred first in lands just east of the Mediterranean Sea. It also occurred independently at several other places and from these places spread throughout the world.

These early farmers domesticated the crops that were already growing wild in their region: wheat and barley in Southwest Asia, millet in Northern China, rice in Southeast Asia, and maize (corn) in Mesoamerica. As cultivation of these crops spread, the natural diversity of plants in a region decreased. With that change came reductions in the diversity of insects and animals that depended on the other crops.

The availability of these farmed crops also made the diets of people less diversified. Usually people in an area would grow just one or two crops, and they would eat foods prepared with those crops at every meal. People continued to hunt animals and to gather wild fruits and nuts when seasonably available, but overall the farmers' diets lacked the variety of full-time hunter-foragers. By cultivating just one or two plants, they eliminated other plants that had been part of people's diets.

**Pastoralism** Even before people settled down as farmers, people in Africa, Europe, and Asia had begun to tame wild animals so they could be brought up to live with humans, a process called *domestication*. The first animal that

people domesticated was the dog. Initially, humans employed dogs to assist with hunting and to provide warnings about the approach of dangerous animals. Goats were domesticated next. They provided both meat and milk. Other animals were domesticated soon after—cattle, horses, sheep, pigs, and chickens—that provided labor or food. As people began to keep larger herds of animals, they began to lead them from one grazing land to another. Their way of life is called *nomadic pastoralism*, or simply pastoralism, because it was based on people moving herds of animals from pasture to pasture. Like hunters and foragers, pastoralists were mobile. Like farmers, pastoralists controlled their food supply. Pastoralism first emerged in grassland regions of Africa and Eurasia.

Domestication of Plants and Animals						
Area	18,000 to 15,000 B.C.E.	15,000 to 12,000 B.C.E.	12,000 to 9,000 B.C.E.	9,000 to 6,000 B.C.E.	6,000 to 3,000 B.C.E.	3,000 to 1 B.C.E.
Europe	• Dogs			• Sheep • Pigs • Goats • Cattle	• Wheat	
Middle East			• Cattle • Barley • Wheat			
Africa				• Cattle	• Sorghum	• Rice
Asia			• Rice • Pigs	• Millet • Cattle		
Americas				• Maize • Squash	• Beans	

Like farmers, pastoralists made the shift away from hunting-foraging hoping to create a more dependable food supply for themselves. And like farmers, pastoralists affected the environment dramatically. At times, pastoralists would allow their animals to graze an area so heavily that the animals would destroy the grass. When rains came, without grass to hold the soil in place, the soil would wash away and the land became infertile.

However, pastoralists were unlike farmers in one important way: While farmers settled in one place, pastoralists moved regularly. Hence, while farmers accumulated belongings, pastoralists usually owned very little. And while farmers had only a little contact with people in other communities, pastoralists were in contact with new items and new ideas. Over the past



10,000 years, pastoralists have played an important role in spreading ideas and trading goods among people. (Test Prep: Create a chart comparing Paleolithic pastoralists with later pastoralists such as the Mongols. See page 241.)

**Specialization of Labor** The growth of agriculture and pastoralism reduced plant and animal diversity, but the surpluses of food they produced led to dramatic changes. For the first time in history, some workers were free to focus on tasks other than producing food. Some people became *artisans*, people who made objects people needed, such as woven clothe or pottery. Others became *merchants*, people who buy and sell goods for a living. Still others became soldiers, religious leaders, or politicians. This process of allowing people to focus on limited tasks is called the *specialization of labor*.

The impact of specialization of labor was far-reaching. Freed from work on the farms, artisans made weapons, tools, and jewelry. A merchant class, engaged with trading these objects, emerged. The surplus of food and goods, combined with the needs of religious ceremonies and a rudimentary system of taxation, led to the invention of writing, which was first used to keep records about trades and tax payments. People later began to use writing to communicate with one another, to record descriptions of events, and to write down religious stories. The development of writing marked the transition from prehistory to history.

**Growth of Villages, Towns, and Cities** The food surplus encouraged both a growth in population and an opportunity to do work not related to producing food. Permanent dwellings and villages and towns multiplied as tribes abandoned their nomadic lifestyles and, eventually, some cities emerged. With the change in food production came *social stratification*. This means that some people accumulated wealth in the form of jewelry and other coveted items and by building larger and better decorated houses. The idea of private property became increasingly important. People with more wealth or more power to control the surplus formed an elite. In general, the elites were men.

One of humankind's first cities was *Jericho*, which was built on the west bank of the Jordan River. The oldest evidence of human settlement there dates from about 9000 B.C.E. Another ancient city, *Catal Huyuk*, in present-day Turkey, was founded in 7500 B.C.E. along a river that has since dried up. The city existed for about 2,000 years, but its well-preserved remains have helped modern people understand life long ago. Although both cities were significant population centers, and while Jericho has tremendous significance in the Judeo-Christian tradition, neither city became a major site of an emerging civilization.

**Governments** The surplus of food also led to the creation of governmental institutions. People had to work together to clear land and, in many places, provide irrigation to water the crops. To coordinate these efforts required a government. And if the community produced a surplus, powerful leaders were required to supervise how it was used, and soldiers were needed to protect it from other groups. Priests were needed, not only to supervise religious ceremonies, but also to explain how the behavior and rulings of leaders were based on religious doctrine.

The leaders of farming communities and towns developed the earliest forms of government. Those who owned the most land or livestock became the wealthiest and thus the most powerful. They became the leaders of local governments.

**Religions** Given the unpredictable nature of weather and longer-term climate changes, Neolithic farmers experienced temporary interruptions and problems, just as farmers do today. Moreover, agricultural land could lose its fertility through *overfarming* unless it was left fallow or it was fertilized, usually by the spreading of animal manure. Pastures could erode due to *overgrazing*, or the continual eating of grasses or their roots, without allowing them to regrow. As people tried to persuade the spirits of nature to help with their crops and herds, religious ceremonies became more elaborate. These ceremonies became so important and elaborate, a special class of *priests* and *priestesses* developed to conduct them.

In some regions, new religious beliefs became highly organized before 600 B.C.E. For example, along the eastern coast of the Mediterranean Sea, the Hebrews emerged under the leadership of Abraham. They were among the first religious groups to worship only one deity, a practice called *monotheism*. In South Asia, the Vedic religion included a variety of deities and a heavy emphasis on rituals. In what is now Iran, a teacher named Zoroaster inspired the religion of Zoroastrianism, which focused on the eternal battle between two forces, one good and one evil.

**Technological Innovations** Societies advanced as people adopted new tools and skills. In some cases, these advances were probably made in one place. In other cases, they were made in several places independently. Either way, most people learned about new technology through trade, war, or other forms of contact with other societies:

- To store food and carry water, they invented waterproof clay pots. People shaped pots out of wet clay and then hardened them in fire. Sometimes people decorated the pots before firing by etching designs on them. Since these pots are one of the artifacts that has lasted thousands of years, they provide insight into how people lived and what they thought was important.
- People improved on the drilling stick, creating a plow. The plow could be pulled by oxen or other animals, which made cultivating crops much easier. In addition, turning over the soil disrupted the growth of weeds, which enabled crops to grow better and increased their yield.
- The development of the wheel with an axle revolutionized transportation and trade. A wheeled cart could transport a load with about 3 percent of the effort needed to drag it. People could transport everything more easily, from grain for overseas trade to stones for building monumental architecture. Adding wheels to a plow made planting crops easier.



- The production of *textiles*, items made of cloth, included several steps. Weavers, who were usually women, learned to spin hair from animals or fibers from plants into threads and then weave the threads into cloth. Workers would often decorate the textiles by dyeing the threads and making patterns. All of this work was usually done in the home.
- People gradually learned *metallurgy*, the science of the study of metals. They replaced their stone tools and weapons with ones made from metal, a process made easier as they learned to heat metals with fire. They first used *copper*, which they found in a pure state in the ground. Through experimentation, they learned that melting tin and copper together made a stronger metal, *bronze*. This metal marked such an advance that it gave the period a new name: the *Bronze Age*, which began at different locations at different times but generally between 3300 and 2300 B.C.E.

### The First Civilizations

The seven developments of the Neolithic Revolution that began around 8000 B.C.E. created the foundation for a new form of human society to emerge over several thousand years. This new form is *civilization*, a large society with cities and powerful states. In early civilizations, many people continued to hunt and forage, often mixing those activities with farming or herding.

Trends that began to emerge in the Neolithic Revolution became even stronger in the early civilizations. For example, society became more stratified into clearly different socio-economic classes, human impact on the environment became more intense, government and religious and military institutions became larger and more complex, and trade increased. Elites grew more powerful as they became increasingly wealthy. The gap between the rich and the poor grew wider, and the relative power of men and women in society diverged more noticeably. Most societies became *patriarchies*, ones ruled by men. (Test Prep: Write a paragraph comparing the Neolithic Revolution with the Industrial Revolution. See pages 421–433.)

The first four civilizations that grew out of the Neolithic Revolution developed independently in river valleys scattered around the earth. The first one was in Southwest Asia, in the valleys of the Tigris and the Euphrates, a region called Mesopotamia. The next three were in the Nile River valley in Egypt, the Huang He (Yellow) River valley in China, and the Indus River valley in India. Two other early civilizations, in Mesoamerica and the Andes Mountains, were not tied closely to a major river valley.

All six of these civilizations developed ways of life, such as language, religious beliefs, and economic practices, that would heavily influence successor civilizations in their regions. Because of their influence, they are examples of *core* and *foundational* civilizations.

### HISTORICAL PERSPECTIVES: WAS FARMING A MISTAKE?

Scholars who study the development of agriculture disagree about its impact of. Many see it as advance, but others note its high cost.

**Criticism of Farming** Evolutionary biologist Jared Diamond called the development of agriculture the “worst mistake in the history of the human race.” He argued that reducing the variety of food in people’s diets increased malnourishment. Relying on fewer food sources made people more susceptible to famine. Living in concentrated settlements increased everyone’s risk for disease. Together, Diamond concluded, these changes reduced the average life span.

**Reducing Violence** In contrast, evolutionary psychologist Steven Pinker argued that agriculture and pastoralism reduced violence. He cited studies that suggest that hunter-forager societies had high murder rates and frequent warfare. These societies were dangerous because they lacked governments strong enough to maintain peace.

**Costs and Benefits** Evolutionary anthropologist Jay Stock saw both negatives and positives in the Neolithic Revolution. From a study of 9,000 skeletons from ancient Egypt, he found that hunter-foragers who lived before the agricultural revolution averaged 5 feet, 8 inches tall. However, those who lived in the first several thousand years after the development of farming averaged 4 inches shorter. Still, he noted the long-term benefits of agriculture: “Without the surplus of food you get through farming, we couldn’t have the runaway technological innovation we see today.”

### KEY TERMS BY THEME

ENVIRONMENT	STATE-BUILDING	SOCIAL STRUCTURE
overfarming overgrazing	Jericho Catal Huyuk	kinship group clan tribe
<b>CULTURE</b> artifacts <i>Homo sapiens sapiens</i> Paleolithic Period Neolithic Revolution monotheism Bronze Age civilization core and foundational	<b>ECONOMICS</b> textiles specialization of labor copper bronze hunter-forager agriculture surplus domestication nomadic pastoralism	patriarchal artisans merchants social stratification priests priestesses