What Was the Agricultural Revolution

An agricultural revolution definition outlines specific periods in human civilization when farming techniques drastically improved the mass cultivation of crops within a relatively short period of time. This leads to greater production of food and the transformation of societies and economies. Three agricultural revolutions have taken place in human history. The First Agricultural Revolution, also known as the Neolithic Revolution, began around 10,000 BCE. Humans shifted from being hunter-gathers to being subsistence farmers and herders. The Second Agricultural Revolution, or the British Agricultural Revolution, began around 300 years ago during the 18th century. Major changes to farming techniques included selectively breeding livestock, systematic crop rotation, and the development of chemical fertilizers. The Third Agricultural Revolution, or the Green Revolution, took place during the 1950s and 60s. Improvements in technologies for growing plants allowed for much greater crop yields, helping to increase the world population.

First Agricultural Revolution

The First Agricultural Revolution occurred during the Neolithic period beginning around 10,000 BCE. Until this point, humans primarily led a nomadic hunter-gather lifestyle, foraging for edible wild plants and hunting animals for food. As the Ice Age ended, the climate became milder and warmer, fostering conditions where humans could settle in one location and begin to grow crops. During this first revolution of agrarian methods, humans began planting small gardens that eventually grew into extensive farms and domesticating animals to use for food. Archeologists have found evidence of the first farms at different sites around the world.

During this time, humans began cultivating crops of rice, barley, maize (corn), and wheat as human civilization developed methods of cooperative labor in order to produce larger amounts of food. Greater yields of food enabled population growth and the development of political and social structures, growing economies, and the advancement of culture and the arts. Sophisticated stone tools enabled new methods for crop cultivation, and reliable and stable food supplies fostered the development of cities. However, the environmental impact of farming included the manipulation of the land, the development of irrigation methods that altered the natural flow of water, and barren fields where livestock overgrazed.

The First Agricultural Revolution was believed to originate in the Mesopotamian civilization of Sumer (southern Iraq), though agrarian revolutions occurred simultaneously in other parts of the Middle East, Africa, Mesoamerica, East Asia, and Southern India.

Where Did the Agricultural Revolution Start?

The earliest and most prominent archeological evidence of the First Agricultural Revolution can be traced to the Fertile Crescent of the Middle East, known as ''the cradle of civilization.'' Farmers in the Fertile Crescent (modern-day eastern Turkey, southwestern Iran, and Iraq) cultivated wheat, barley, flax, chickpeas, lentils, and peas. Domesticated animals such as pigs, sheep, goats, and cattle were used as food sources. Farmers also used domesticated animals to help cultivate the crops.

Recently discovered archeological sites have found evidence of independent Agricultural Revolutions in different parts of the world, including Syria, Turkey, China, and the Americas. Archeological sites at Abu Hureyra, Catalhoyuk, and elsewhere reveal evidence of growing grain, cultivating fruit trees, and domesticating animals.

Second Agricultural Revolution

The Second Agricultural Revolution, or the British Agricultural Revolution, dating from 1500–1800, occurred just prior to the First Industrial Revolution (1700s–1800s). During this time, land use was gradually privatized and controlled by a smaller number of farmers who maintained larger plots. These farmers learned to selectively breed livestock to create animals that yielded more meat, milk, wool, or hide. Farmers developed methods of crop cultivation, using four-year cycles to produce and rotate high-yield crops such as wheat, turnips, barley, oats, and clover in the field. These crops maintained a chemical balance in the soil, allowing high crop yields. After 1750, the potato was regarded as an important European crop due to its ease of farming and the crop's richness in vitamins and carbohydrates.

Though initially a slow transition, the British Agricultural Revolution gained advancements at the beginning of the 18th century, as the medium of agriculture was transformed from a means for sustenance to the development of big business. Continuing until the 19th century, the Second Agricultural Revolution facilitated improvements in scientific breeding methods for cattle, advancements in drainage systems, and experimentation with new crops. The Second Agricultural Revolution affected European society by creating healthier populations.

What Started the Second Agricultural Revolution?

Both the Second Agricultural Revolution and the First Industrial Revolution were motivated by a desire to increase work efficiency and maximize productivity during the production process. During this period in human civilization, trade had expanded around the globe amid the rise of capitalism, and farmers made profits by selling their crops to distant lands. Seeking new innovations and cost-effectiveness in farming, industrialization created advanced machinery and new technologies such as selective breeding and chemical fertilizers, helping to develop agriculture into a profitable business. There were several inventions that helped contribute to the Second Agricultural Revolution:

Third Agricultural Revolution

The Third Agricultural Revolution, or Green Revolution, occurred during the 1950s and 60s. Massive increases in crop yields fostered by the use of concentrated nitrogen to fertilize fields contributed to this time period being known as the Green Revolution. While the Green Revolution originated in Mexico, new agricultural revolutions emerged in Africa, India, Latin America, and Asia. In Mexico, farmers sought to increase self-sufficiency for a growing population, while India was experiencing a mass famine. Improvements in synthetic fertilizers and modern irrigation methods allowed crops to grow in climates previously too dry. Agricultural scientists such as American researcher **Norman Borlaug** (1914–2009) bred plants that were resistant to disease, produced more grain, and responded well to fertilizers. Borlaug would go on to win the Nobel Peace Prize for his innovative research.

The Green Revolution sparked a massive increase in the global population by significantly improving crop productivity while reducing poverty and hunger. However, the Green Revolution encouraged monoculture farming, where industrial farms raised a single strain of highly productive crops. While these homogeneous crops increased yield, they reduced biological diversity, were less disease-resistant, and elevated the need for greater use of pesticides. The use of pesticides is now known to threaten pollinators such as bees. Additionally, many crops developed during the Green Revolution are water-intensitive and have increased water scarcity in the 20th and 21st centuries.

Summary

Throughout human history, agricultural revolutions have changed the way humans work, think, and eat. Humans during the **First Agricultural Revolution** transitioned from hunter-gather to farmers. During this time, they invented tools to aid in their work, along with art and religion. During the **Second Agricultural Revolution**, humans industrialized farming to produce greater crop yields with fewer workers. This allowed larger cities to form and paved the way for the First Industrial Revolution. The **Third Agricultural Revolution** introduced new fertilizers and irrigation, along with specially bred plants, which greatly increased crop yields.

Early archeological sites tracing the development of the First Agricultural Revolution have been found in **Abu Hureyna** (modern Syria) and **Catalhoyuk** (modern Turkey), revealing evidence of cultivating fruit trees, growing grain, and domesticating animals. During the Second Agricultural Revolution, inventors such as **Jethro Tull** and **Charles ''Turnip'' Townshend** perfected new techniques for improving crop yields. In the Green Revolution, scientific researcher **Norman Borlaug** bred disease-resistant plants and produced more yields, and innovations in the Third Agricultural Revolution helped to reduce world poverty and hunger.

All Credit goes to Prof. Farah Aslan