

Advances in Technology and Exchange

Technology made large populations possible; large populations now make technology indispensable.

—Joseph Krutch, writer and naturalist (1893–1970)

Essential Question: How has the development of new technology changed the world since 1900?

While the population of the world grew, globalization made the world feel smaller, as did advances in telecommunications technology. Starting in the early 1900s, **radio** brought news, music, and cultural events to a wide range of people. Later in the century, air travel and **shipping containers**, large standard-sized units that could be carried on a truck or train or stacked on ship, promoted the widespread movement of people and goods. Energy technologies, such as the use of oil and nuclear power, made it possible to transport goods faster and more cheaply than ever. The internet, first developed for the U.S. Defense Department during the Cold War, emerged as a regular tool of communication for much of the public by the late 1990s. Knowledge economies, based on developing or sharing information, took root in cities around the world.

Communication and Transportation

Decades before the introduction of the internet, communication technologies were connecting people around the world. Television and radio ads encouraged people to “reach out and touch someone” by making a long-distance phone call. By the 1990s, mobile technologies such as cellphones put the tools of information creation and dissemination into the hands of individuals around the world. Twitter, Facebook, and other social networking sites made the media accessible to anyone anywhere.

The impact of this revolution became apparent quickly. Videos taken on phones of police actions in the United States and other countries led to inquiries into racial profiling and sparked outrage. Social media also played a role in the “Arab Spring,” a series of antigovernment protests that spread from country to country in North Africa and the Middle East in the 2010s as people shared their protest experiences on social media.



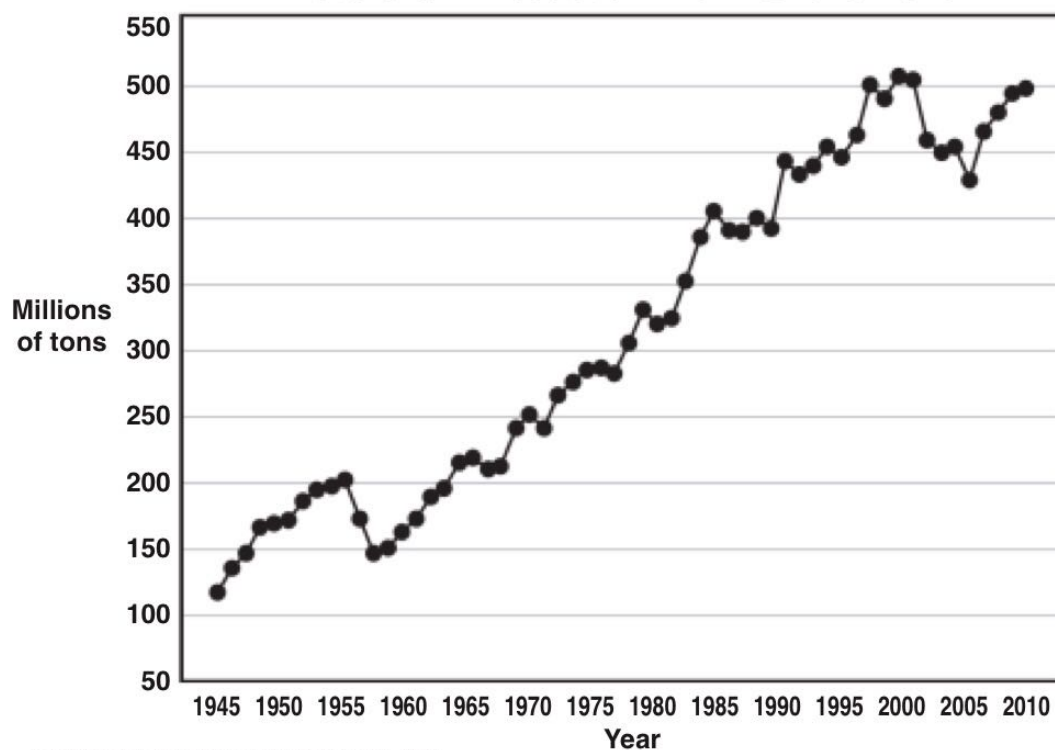
While communication technologies put people in virtual touch, transportation advancements move people and goods into actual proximity. Every day, about 2 million people fly on an airplane. Cargo planes transport commercial shipments around the clock. Giant tankers—up to one-quarter mile in length—loaded with thousands of shipping containers ply the seas in increasing numbers, some of them too big to fit through the Panama Canal.

The Green Revolution

In the mid-20th century, the **Green Revolution** emerged as a possible long-term response to hunger. Scientists developed new varieties of wheat, rice, and other grains that had higher yields and greater resistance to pests, diseases, and drought. The new varieties were first developed by **crossbreeding**—breeding two varieties of a plant to create a hybrid. More recently, scientists have used **genetic engineering**—manipulating a cell or organism to change its basic characteristics. Farmers also used more irrigation, fertilizers, and pesticides. In Brazil and elsewhere, people burned down forests and plowed the land for agriculture. Acreage devoted to crops, especially grains, increased dramatically worldwide.

The Green Revolution solutions were not free of problems. Many small farmers could not afford the new fertilizers or pesticides. For this reason, they were often unable to compete with large landowners. Many small farmers were forced to sell their land, increasing the holdings of large landowners even more. Also, since some of the techniques developed in the Green Revolution involved the use of mechanized equipment, fewer jobs were available for farm laborers. Finally, the heavy applications of chemicals damaged the soil and the environment.

Total Grain Production in China 1945–2010



Source: National Bureau of Statistics of China, 2009.

Genetic engineering created its own set of concerns as well. Some argued that a genetic modification designed to give a plant resistance to insects might inadvertently cause a decline in the population of pollinating insects, such as bees. Another problem was the loss of old seed varieties as new genetically engineered plants were adopted.

Energy Technologies

In 1900, coal accounted for about half of the global energy consumed. As extraction, refinement, and transportation technologies allowed for widespread use, petroleum, also known as crude oil, and natural gas joined coal in fueling industrial output and helped increase productivity. Research in the 1930s and 1940s that led to the atomic bomb also led to the first use of nuclear power plants to generate electricity for factories and homes.

Fossil fuels—coal, petroleum, and natural gas—are nonrenewable resources. Once they have been used up, the supply is permanently depleted. Fossil fuels have contributed to air pollution and to the cloak of greenhouse gases, especially carbon dioxide, that allow sunlight through the Earth's atmosphere but block the escape of Earth's heat. Nuclear power, while considered a clean energy, has its own dangers. Accidents at nuclear plants have caused serious problems with leaked radiation, and storing nuclear waste has hazardous consequences.

Technologies continue to be developed to combat the emission of carbon dioxide and other greenhouse gases as well as minimize harm from nuclear power. The building of nuclear power plants declined starting in the 1980s, and nuclear power accounts for only about 5 percent of global energy consumption. Renewable resources, such as wind and solar power, are beginning to supply energy to both industries and homes, but they too represent only 5 percent of global energy output. (Connect: Analyze the role of various energy sources in the first and second industrial revolutions and in the 21st century. See Topic 5.5.)

Medical Innovations

A number of advances in medicine have had a dramatic effect on the survival and longevity of humans. Medical research and advancement benefit from, and also inspire, new technologies.

Antibiotics In 1928, Scottish biologist Alexander Fleming was working in his lab in London when he accidentally discovered that a particular fungus produced a substance that killed bacteria. He had discovered penicillin. Penicillin became the first **antibiotic**, a useful agent in curing bacterial infections. During World War II, antibiotics saved the lives of soldiers who would have died in any previous war from a minor wound that became infected. After the war, antibiotics spread to civilian use, where they fought a range of illnesses.



“I would like to sound one warning,” Fleming said in a speech as he accepted the Nobel Prize. He pointed out that the extensive use of antibiotics carried a risk. By killing off certain strains of a disease, antibiotics allowed the evolution of strains of the disease unaffected by them. These antibiotic-resistant strains could be untreatable. This prospect raised fears of renewed epidemics of diseases once under control.



Source: Getty Images

Penicillium fungi are the source of penicillin, which people can take orally or by injection. Penicillin works by interfering with bacteria cell walls. Scientists began to treat humans with the drug in 1941.

Reliable Birth Control Another groundbreaking medical advance was in **birth control**. In the early 1950s, scientist Gregory Pincus developed a birth control pill, a more reliable method than the barrier methods then in use. Scientists tested the pill on women in the 1950s, and the U.S. government approved it for widespread use in 1960.

As a result of the pill and other forms of birth control, **fertility rates** declined in much of the world. In other words, the average woman began having fewer babies than her mother or grandmother had. Birth control transformed sexual practices and played a part in reshaping gender roles. By 2018, more than 300 million women worldwide were using modern forms of contraception, including the pill.

Vaccines Vaccines have existed since 1796, but governments and nonprofit organizations did not begin developing and widely distributing **vaccines** to prevent deadly diseases until after 1900. Thanks to vaccines, polio and measles became rare, and smallpox was eradicated by the 1980s. Vaccines are also available to prevent mumps, measles, tetanus, diphtheria, and whooping cough, all potentially serious diseases. As of 2019, a malaria vaccine is in the trial stage.

According to the World Health Organization (WHO), vaccines were preventing as many as 3 million deaths each year in the 21st century. However, the WHO also said that better vaccination coverage would save another 1.5 million people annually. Some people were unable to get vaccinated because they lived in hard-to-reach areas.

KEY TERMS BY THEME

SOCIETY: Communication

radio

internet

ENVIRONMENT: Ecology

Green Revolution

crossbreeding

genetic engineering

TECHNOLOGY: Travel

shipping containers

TECHNOLOGY: Medicine

antibiotic

birth control

fertility rates

vaccine

Technological Advancements and Limitations – Disease

We live in a world fraught with risk from new pandemics. Fortunately, we also now live in an era with the tools to build a global immune system.

—Nathan Wolfe, virologist (born 1970)

Essential Question: How have environmental factors affected human populations since 1900?

As virus specialist Nathan Wolfe pointed out, progress in science and medicine, combined with government-run public health measures, drastically reduced illnesses and deaths from many diseases after 1900. These included **pandemics**, epidemic diseases that spread across national borders. The disease **smallpox**, for example, had plagued the ancient Egyptians and devastated the native population of the Americas and Australia. As recently as the 1960s, it killed millions of people each year. However, the World Health Organization (WHO) conducted a global vaccination campaign to wipe out the disease. In 1979, scientists declared success. Smallpox had been eliminated from the planet, except for the culture kept alive at the Centers for Disease Control in the United States.

Other diseases persisted, especially those related to poverty, including malaria, tuberculosis, and cholera. New epidemics also emerged, such as deadly strains of flu, HIV/AIDS, and Ebola. Other conditions, such as heart disease and Alzheimers, became more common as people began living longer. Each medical problem spurred even more technological and medical advances to try to combat it.

Disease and Poverty

Even when cures exist, some diseases persist because the conditions of poverty are contributing factors. Poor housing or working conditions, contaminated water, and lack of access to health care are commonplace among populations with low incomes, and they all contribute to the spread of disease.

Malaria A parasitic disease spread by mosquitoes in tropical areas, **malaria** killed more than 600,000 people each year in the early 21st century. Most of these were young African children. The international non-governmental

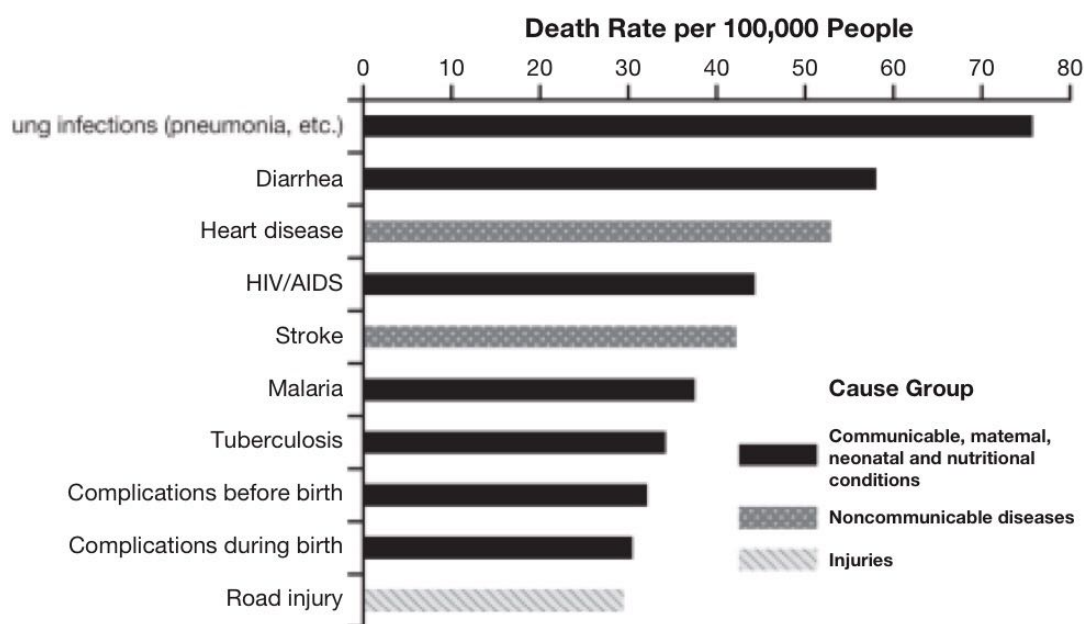


organization (NGO) **Doctors Without Borders** treated about 1.7 million people annually. Experts developed preventive approaches, such as distributing mosquito nets treated with insecticide as cover during sleep. However, people can still become infected during waking hours. A vaccine for malaria has been in development for many years, but one that is effective in most cases is still in trials. Nonetheless, progress has been made. In 2019, the World Health Organization certified Algeria and Argentina as malaria-free. The organization cautioned, however, that some types of mosquitoes were becoming resistant to insecticides.

Tuberculosis Another disease associated with poverty is **tuberculosis (TB)**, an airborne infection that spreads through coughs and sneezes and affects the lungs. Before 1946, no effective drug treatment was available for this deadly disease. Then a cure was developed involving antibiotics and a long period of rest. In countries where TB is common, vaccines are administered to children. In the early 21st century, a strain of tuberculosis resistant to the usual antibiotics appeared. The number of infected patients increased, especially in prisons, where people live in close quarters. The WHO began a worldwide campaign against tuberculosis in the 2010s.

Cholera A bacterial disease that spreads through contaminated water, **cholera** causes about 95,000 deaths per year. Like tuberculosis and malaria, cholera affects mainly poor people in developing countries. Methods to counter cholera include boiling or chlorinating drinking water and washing hands. Although cholera vaccines are available, they do not reduce the need to follow these preventive measures. A severe cholera infection can kill within a few hours, but quickly rehydrating an exposed person can effectively eliminate the risk of death.

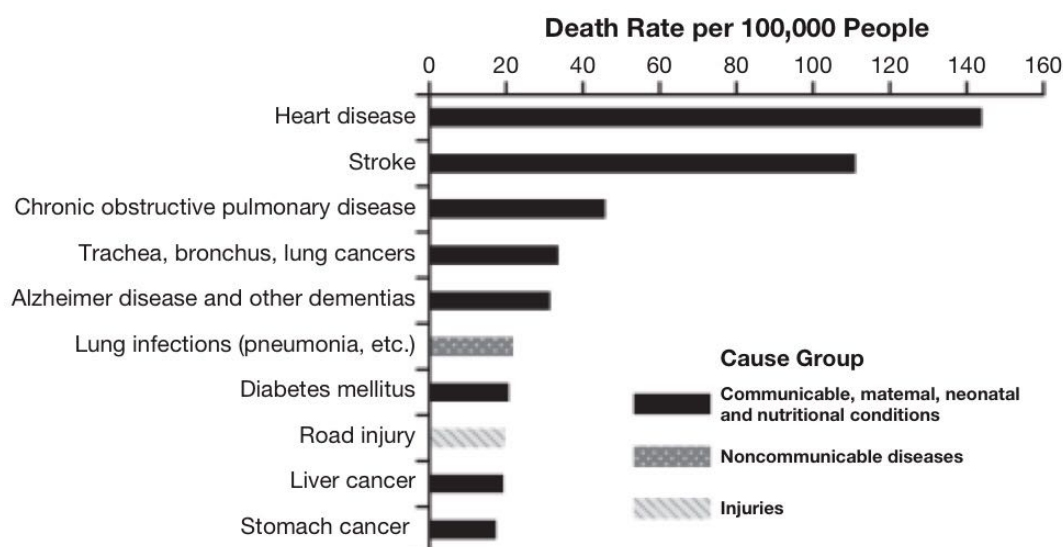
Top 10 Causes of Deaths in Low-income Countries in 2016



Source: Global Health Estimates 2016: Deaths by Cause, Age, Sex, by Country and by Region, 2000-2016. Geneva, World Health Organization; 2018. World Bank list of economics (June 2017). Washington, DC: The World Bank Group; 2017 (<https://datahelpdesk.worldbank.org/knowledgebase/articles/905319-world-bank-country-and-lending-groups>).



Top 10 Causes of Deaths in Upper-middle-income Countries in 2016



Source: Adapted from Global Health Estimates 2016: Deaths by Cause, Age, Sex, by Country and by Region, 2000-2016. Geneva, World Health Organization; 2018. World Bank list of economies (June 2017). Washington, DC: The World Bank Group; 2017 (<https://datahelp-desk.worldbank.org/knowledgebase/articles/905319-world-bank-country-and-lending-groups>).

Polio Another disease caused by water contaminated by a virus transmitted in fecal matter, **polio** once infected 100,000 new people per year. It could result in paralysis and sometimes death. The world cheered when an American researcher, **Jonas Salk**, announced on April 12, 1955, that an injectable vaccine against polio had proven effective. Six years later, an oral vaccine, developed by **Albert Sabin**, became available.

Vaccines became the centerpiece of a global public health campaign to eliminate polio. A joint effort by governments, private organizations, and United Nations agencies began in 1988. In less than 30 years, polio was eliminated in all but a few countries. In places where it still exists, such as Pakistan and Afghanistan, war makes administering the vaccine difficult. Political unrest and religious fundamentalism make people fearful of programs advocated by outsiders. Still, the success of the campaign showed that coordinated global efforts could help solve global problems. (Connect: Compare the effects of diseases during the Age of Exploration to those in the 20th century. See Topic 4.3.)

Emerging Epidemics

Some diseases have emerged that caused major social disruption. In the fall of 1918, as World War I was drawing to a close, a new fight erupted. The issue of the *Journal of the American Medical Association* published on December 12, 1918, described the battle this way: “Medical science for four and one-half years devoted itself to putting men on the firing line and keeping them there. Now it must turn with its whole might to combating the greatest enemy of all—infectious disease.” In fact, more soldiers died from the flu than from

battle. One quarter of all Americans and one-fifth of the world's population became infected with this particularly virulent strain of the flu, which killed 20 million people worldwide. Its victims tended to be between the ages of 20 and 40. The effects of the flu were so disastrous that longevity in the United States fell by 10 years. More people died from the flu in 1918–1919 than had died in four years of the Bubonic Plague (1347–1351). Like the plague, the flu spread along trade routes and with military troops.

HIV/AIDS Another disease outbreak causing social disruption occurred between 1981 and 2014. **Acquired immunodeficiency syndrome (AIDS)**, which is caused by the **human immunodeficiency virus (HIV)**, killed more than 25 million people around the world. HIV weakens the immune system, so people more easily succumb to other illnesses. The virus is contracted through the exchange of bodily fluids, usually through unprotected sex, blood transfusions, or sharing intravenous needles. Funding for the research on the disease, which was associated in its early days with homosexual men and drug addicts, was difficult to come by, and a high percentage of its first victims died.

By the mid-1990s, however, medical researchers had developed ways to treat the disease but not to cure it. **Antiretroviral drugs** could stop HIV from weakening the immune system, thus allowing a patient to live with the virus for many years. However, the drugs were very expensive, so access to treatment was difficult, particularly for patients in poor countries. Brazil is a notable exception. In 1996 it established a policy of providing free antiretroviral drugs to any person who needed them. Deaths have declined dramatically, and the program has actually saved the government money by lowering the number of hospitalizations, medical leaves, and early retirements.

After 2000, the WHO, the United States government, and private groups increased funding for AIDS prevention and treatment, but the disease remains a serious problem. In 2018, about 40 million people globally were living with HIV, the majority in developing countries or low-income neighborhoods of developed countries. Each week, more than 600 young women between the ages of 15 and 24 become infected with HIV, and many lack access to healthcare.

Ebola Another recent and frightening epidemic is Ebola. Discovered in the Congo in 1976, **Ebola** is a deadly disease caused by a virus that infects the African fruit bat, humans, and other primates. Humans get the virus from exposure to fluids of infected people or animals. The disease causes extensive bleeding, organ failure, and, for the majority of infected people, death. In 2014, a massive outbreak in West Africa caused fear around the world. However, a coordinated, intensive public health effort contained and then ended the outbreak. As with polio, countries demonstrated their ability to work together to confront a danger. The WHO took a leading role in this public health response, issuing emergency warnings and implementing a “road map” for handling the outbreaks.



Diseases Associated with Longevity

Heart Disease As longevity increases, diseases that typically do not develop until later in life began to assert themselves. **Heart disease**, for example, is associated with lifestyle, genetics, and increased longevity. One of the major discoveries in fighting heart disease was the **heart transplant**, first performed by the South African **Christiaan Barnard** in 1967. **Robert Jarvik** led a team that designed an **artificial heart**, used as a temporary device while the patient waited for a compatible human heart. Other researchers developed less invasive procedures: replacing valves, installing stents in arteries, replacing the vessels leading to the heart, and developing medications to reduce blood conditions that led to heart disease. In the 2000s, people with heart disease lived longer than similarly affected people did in the 1970s.

Alzheimer’s Disease As people lived longer, a form of dementia known as **Alzheimer’s disease** that affects elderly and some middle-aged people also became an increasing concern. Alzheimer’s patients progressively lose their memory, eventually leading to a stage in which they do not recognize their loved ones. Since the disease undermines bodily functions, it leads to death. Researchers continue to search for a cure.

KEY TERMS BY THEME		
<p>ENVIRONMENT: Epidemics pandemic smallpox malaria Doctors Without Borders tuberculosis cholera smallpox Jonas Salk</p>	<p>Albert Sabin polio Acquired Immunodeficiency Syndrome (AIDS) Human Immunodeficiency Virus (HIV) Ebola SOCIETY: Disease heart disease Alzheimer’s disease</p>	<p>TECHNOLOGY: Medical Advances antiretroviral drugs heart transplant Christiaan Barnard Robert Jarvik artificial heart</p>

Technology and the Environment

Climate change does not respect border; it does not respect who you are—rich and poor, small and big. Therefore this is what we call global challenges which require global solidarity.

—Ban Ki-moon, UN Secretary General, 2007–2016

Essential Question: What were the causes and effects of environmental changes from 1900 to the present?

During the 20th and 21st centuries, human agricultural, industrial, and other commercial activity contributed to many environmental changes that led to increased competition for increasingly scarce resources. These problems include:

- **Deforestation**—the loss of Earth’s trees as a result of cutting down trees so the land could be used for agriculture
- **Desertification**—the removal of the natural vegetation cover through expansion and intensive use of agricultural lands in arid and semi-arid lands
- A decline in **air quality** as a result of increased pollutants in the air
- Increased consumption of the world’s supply of fresh water

Scientists observed that, along with these changes, Earth was getting warmer. Ban Ki-moon, a South Korean politician and diplomat, and many other world leaders concluded that climate change was a global problem and debated the best ways to approach it through global action.

Causes of Environmental Changes

A number of interconnected factors contributed to the environmental changes that have taken place since 1900.

Population Growth In 1900, the world population was 1.6 billion. By 1950 it had risen to 2.55 billion, and by 2000 the population was 6.12 billion. All of the billions more people that lived on the planet since 1900 needed to be fed. Growing populations led to a demand for more croplands. This increase in land used for agricultural purposes resulted in deforestation, soil erosion, and smaller habitats for many species of plants and animals.

Growing populations affected not only land resources but also water resources. Overfishing in the oceans has led to the near disappearance of cod. Although fresh water is a renewable resource, growing populations consume increasing amounts of it.

Urbanization Another cause of environmental change is the increasing size and number of cities. By some estimates, by 2025, 5.1 billion people will live in cities, which will pressure those who grow food to use intensive farming methods that deplete the soil and cause erosion or to clear more forests for agricultural use. City dwellers also produce vast amounts of waste, some of which pollutes the water they depend on.

Globalization and Industrialization The global reach of industrialization has also affected the environment. As industry spread to developing countries, energy and other natural resources used in manufacturing were in demand, drawing further on the reserves of resources. Workers in industry in these developing countries are creating a new middle class that increases the market for such products as cars that require metals and other resources and that also contribute to pollution.

Effects of Environmental Changes

While humans have always competed for raw materials and natural resources, this competition became more intense as industrialization spread. With an ever-growing population, humans grappled with hunger, environmental damage, and global epidemics.

Resource Depletion Since the mid-1800s, when petroleum extraction began in earnest and oil pumped energy into the Industrial Revolution, about half of the earth's finite resources of this vital resource have been used up. With the rapidly growing urban and industrial population, some experts predict the remaining half could be used up at a much faster rate, within the next 30 to 40 years. While supplies of coal will last longer, if coal is used to make up for the loss of petroleum, coal reserves could also be depleted in 60 years. (Connect: Evaluate the claim that the Industrial Revolutions have created dependency on natural resources that will soon lead to their depletion. See Topic 5.5.)

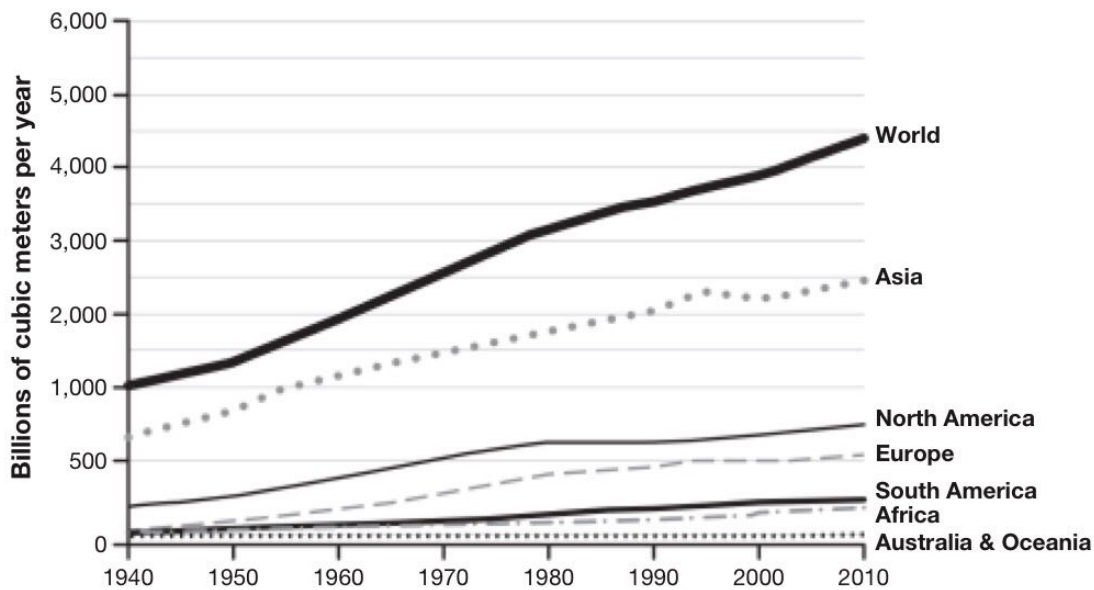
Inequality and Scarce Resources According to the United Nations, 31 countries are facing **water scarcity** and more than 1 billion people lack clean, accessible drinking water. As water consumption continues to increase, some corporate interests are depleting, polluting, and exploiting water sources. The World Health Organization predicts that by 2025, half of the world's population will lack clean and safe drinking water.

Water scarcity is also linked to other inequalities. Surveys from 45 developing countries show that women and children bear the primary responsibility for water collection in most households. This is time not spent working at an income-generating job or attending school. A study in Ghana found that a 15-minute reduction in water collection time increases the proportion of girls attending school by 8 percent to 12 percent.



In 2015, world leaders agreed to 17 goals for a better world by 2030. Many of these global goals address the environmental problems the world faced after 1900 that relate to extreme poverty, inequalities and injustice, and climate change.

Global Water Consumption, 1900–2025



Source: Adapted from Sampa, Commons.Wikimedia.org

Changes in the Atmosphere Factories, automobiles, airplanes, and many other products and processes of industrialization have emitted huge amounts of pollutants, including carbon dioxide and other **greenhouse gases**—those that build up in the atmosphere and let the heat of the sun reach Earth but trap it from escaping Earth. At the same time, some of Earth’s natural carbon trapping resources, including forests and ground cover for unused farmlands, are shrinking.

Development of Renewable Energy Sources Concerned about unsustainable demands for energy through **fossil fuels** (coal, oil, petroleum, and natural gas), companies and nations began to invest in **renewable energy**, energy derived from resources that are continuously replenished, such as wind, solar, tidal, and geothermal power. At first, high costs slowed development of such sources. However, as new techniques and technologies reduced costs, these sources became increasingly attractive options. Renewable energy provides only about 7 percent of the world’s energy needs. However, a 2018 study predicted that by 2050, half the world’s electricity will come from wind power and solar power.

Increasing Environmental Awareness In 1968, the “Club of Rome”—an organization of scientists, industrialists, diplomats, and others—formed in Europe to promote solutions to global challenges facing humanity. It called attention to concerns that resource depletion would limit economic growth. In many countries, people joined a **Green Party** that focused on environmental issues. Some supported the **Green Belt Movement** to protect wilderness areas from urban growth. (See Topic 9.5.) By the 21st century, the Green Belt



Movement had planted more than 51 million trees in Kenya. The trees help to preserve ecosystems and lessen the effects of greenhouse gases. Planting trees also created employment and the improved soil quality.

Debates About Global Warming

Air pollutants and greenhouse gases prompted debates about rising temperatures. Scientists, including those on the United Nations’ Intergovernmental Panel on Climate Change, cited data showing that the emissions of carbon dioxide and other greenhouse gases caused by the burning of fossil fuels were causing **global warming**. This is an increase in the average temperature of the world. Experts advised governments to reduce their countries’ **carbon footprint**—the amount of carbon dioxide that each person produces. Without a reduced carbon footprint, global warming would contribute to catastrophes: more powerful hurricanes, more severe droughts, and rising sea levels that could flood islands and coastal areas. Some activists argued that the term “global warming” was too mild to express the urgency of action. They said that humanity faced a “climate emergency” or “climate crisis.”

Climate-change skeptics, in contrast, questioned whether global warming was happening and whether human activities had any influence on the climate. In addition, some people in the energy industries resisted the interference of government, arguing that market forces would cause consumers to reduce their carbon footprint if that became necessary. In contrast, other leaders of energy companies began planning for a shift to renewable fuel sources.

Most government leaders, however, agree that global warming requires a global response, but countries disagree on how to reduce carbon emissions.

Debate over Reducing Carbon Emissions		
Issue	Developed Countries (including the United States and Western Europe)	Developing Countries (including China, India, Russia, and Brazil)
Reason for Reducing or Producing Carbon Dioxide	Developing countries need to reduce their rapidly increasing outputs of carbon dioxide.	Developing countries are trying to provide electricity, cars, and a path out of poverty for their citizens. (Developed countries already did this by using huge amounts of coal and oil.)
Quantity of Carbon Dioxide Produced	In 2007, China passed the United States as the world’s biggest emitter of carbon dioxide.	Developing countries emit far less carbon dioxide <i>per person</i> than developed countries do. Therefore, developed countries must take the lead in restricting their use of fossil fuels.

Kyoto The first major international agreement to reduce carbon emissions was the **Kyoto Protocol**, signed in 1997. Developed nations in Western Europe, along with the United States, argued that developing countries, such as China, India, Russia, and Brazil, needed to curb their rapidly increasing output of carbon dioxide. However, the United States refused to ratify it, and China and India were not required to agree to the strictest terms of the protocol.



Global Action at Paris In 2015, 195 countries signed a deal, the **Paris Agreement**, that gave new hope for progress against global warming. Leaders of both the United States and China supported this new deal. However, in 2017, President Donald Trump announced that the United States would withdraw from the Paris Agreement.

Climate Activism Increasing global temperatures led to calls to action. “You say you love your children above all else, and yet you are stealing their future in front of their very eyes,” 15-year-old climate activist Greta Thunberg raged in a speech at a United Nations climate conference in 2018. Beginning with a solo protest in her native Sweden, Thunberg eventually led a global climate strike with more than 1.6 million participants in more than 125 countries.

Extinction Rebellion, a climate activist group formed in 2018, engaged in civil disobedience in London, blocking a main bridge and key intersections for more than a week, chaining themselves to the headquarters of big companies, and interrupting “business as usual” in other ways. About a thousand people were arrested, but the group succeeded in having Members of Parliament call a citizens’ assembly to discuss ideas for addressing the climate emergency. Many other citizen groups are pressuring lawmakers in many countries to take necessary steps to avert the worst consequences of continued warming predicted in reports from the UN’s Intergovernmental Panel on Climate Change.

A New Age?

What should people call the time period we live in? Traditionally, geologists have called the current period the Holocene epoch. *Holocene* means “entirely recent.” This time period started about 11,700 years ago, at the end of the last significant ice age.

However, some scientists believed humans have left the Holocene. They wanted to call the present time the **Anthropocene**. This term means “new man.” These scientists wanted to change the name because humans now affect almost the entire planet. In 2019, a panel of scientists voted to approve the name. *Anthropocene* reflects the idea that humans are the strongest influence on Earth’s climate and environment—for better and for worse.

KEY TERMS BY THEME		
<p>CULTURE: Movements and Organizations Green Party Green Belt Movement</p>	<p>ENVIRONMENT: Scientific Studies deforestation desertification air quality greenhouse gases fossil fuels water scarcity</p>	<p>renewable energy global warming carbon footprint Anthropocene</p> <p>GOVERNMENT: International Agreements Kyoto Protocol Paris Agreement</p>