CHAPTER 1  From the Origins of Agriculture to the First River-Valley Civilizations

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Babylonian Map of the World, ca. 600 B.C.E.  This map on a clay tablet, with labels written in Akkadian cuneiform, shows a flat, round world with the city of Babylon at the center. Nearby features of the Mesopotamian landscape include the Euphrates River, mountains, marshes, and cities. Beyond the great encircling salt sea are seven islands. Like many ancient peoples, the Babylonians believed that distant lands were home to legendary beasts, strangely formed peoples, and mysterious natural phenomena.
The Emergence of Human Communities, to 500 B.C.E.

Human beings evolved over several million years from primates in Africa. Able to walk upright and possessing large brains, hands with opposable thumbs, and the capacity for speech, early humans used teamwork and created tools to survive in diverse environments. They spread relatively quickly to almost every habitable area of the world, hunting and gathering wild plant products. Around 10,000 years ago some groups began to cultivate plants, domesticate animals, and make pottery vessels for storage. This led to permanent settlements—at first small villages but eventually larger towns as well.

The earliest complex societies arose in the great river valleys of Mesopotamia, Egypt, Pakistan, and northern China. In these arid regions agriculture depended on river water, and centers of political power arose to organize the labor required to dig and maintain irrigation channels. Kings and priests dominated these early societies from the urban centers, helped by administrators, scribes, soldiers, merchants, craftsmen, and others with specialized skills. Surplus food grown in the countryside by a dependent peasantry sustained the activities of these groups.

Certain centers came to dominate broader expanses of territory, seeking access to raw materials, especially metals. This development also stimulated long-distance trade and diplomatic relations between major powers. Artisans made weapons, tools, and ritual objects from bronze. Culture and technology spread to neighboring regions, such as southern China, Nubia, Syria-Palestine, Anatolia, and the Aegean.

In the Western Hemisphere, different geographical circumstances called forth distinctive patterns of technological and cultural response in the early civilizations in southern Mexico and the Andean region of South America.
Engraving of Two Cattle in the Sahara, ca. 3000 B.C.E. Around 10,000 B.C.E. people settled in the central Sahara and began to engrave rocks with pictures of animals. The engravings display an expert knowledge of animal stance, movement, and anatomy.

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From the Origins of Agriculture to the First River-Valley Civilizations

The Epic of Gilgamesh, whose roots date to before 2000 B.C.E., defines civilization as the people of ancient Mesopotamia (present-day Iraq) understood it. Gilgamesh, an early king, sends a temple prostitute to tame Enkidu (EN-kee-doo), a wild man who lives like an animal in the grasslands, perhaps symbolizing the foraging lifestyle of the preagricultural populations of the Mesopotamian borderlands. Using her sexual charms to win Enkidu’s trust, the temple prostitute tells him:

Come with me to the city, to Uruk (OO-rook), to the temple of Anu and the goddess Ishtar... to Uruk, where the processions are and music, let us go together through the dancing to the palace hall where Gilgamesh presides.

She clothes Enkidu and teaches him to eat cooked food, drink beer, and bathe and oil his body. Her words and actions signal some of the traits of civilized life in ancient Mesopotamia.

The Mesopotamians, like other peoples throughout history, equated civilization with their own way of life, but civilization is an ambiguous concept, and the charge that a particular group is “uncivilized” has been used throughout human history to justify many things. Thus, it is important to explain the common claim that the first advanced civilizations emerged in Mesopotamia and Egypt sometime before 3000 B.C.E.

Scholars agree that certain political, social, economic, and technological traits are indicators of civilization: (1) cities as administrative centers, (2) a political system based on control of a defined territory rather than kinship connections, (3) many people engaged in specialized, non-food-producing activities, (4) status distinctions based largely on accumulation of substantial wealth by some groups, (5) monumental building, (6) a system for keeping permanent records, (7) long-distance trade, and (8) major advances in science and the arts. The earliest societies exhibiting these traits developed in the floodplains of great rivers: the Tigris (TIE-gris) and Euphrates (YOU-FRAY-teez) in Iraq, the Indus in Pakistan, the Yellow (Huang He [hwang huuh]) in China, and the Nile in Egypt (see Map 1.2 on page 14). The periodic flooding of the rivers deposited fertile silt and provided water for agriculture, but it also threatened lives and property. To protect themselves and channel the forces of nature, people living near the rivers created new technologies and forms of political and social organization.
In this chapter, we describe the origins of domestication among the scattered groups of foragers living at the end of the last Ice Age (a long period when glaciers covered much of North America, Europe, and Asia) and the rise of complex societies in Mesopotamia, Egypt, and the Indus River Valley from approximately 3500 to 1500 B.C.E. (China, developing slightly later, is discussed in Chapter 2).

BEFORE CIVILIZATION

**culture** Socially transmitted patterns of action and expression. *Material culture* refers to physical objects, such as dwellings, clothing, tools, and crafts. Culture also includes arts, beliefs, knowledge, and technology.

**history** The study of past events and changes in the development, transmission, and transformation of cultural practices.

**Stone Age** The historical period characterized by the production of tools from stone and other nonmetallic substances. It was followed in some places by the Bronze Age and more generally by the Iron Age.

**Paleolithic** The period of the Stone Age associated with the evolution of humans. It predates the Neolithic period.

**Neolithic** The period of the Stone Age associated with the ancient Agricultural Revolution(s). It follows the Paleolithic period.

**Cooking, Traveling, and Shelter**

**foragers** People who support themselves by hunting wild animals and gathering wild edible plants and insects.

Evidence of early humans’ splendid creative abilities first came to light in 1940 near Lascaux in southern France. Youths who stumbled onto the entrance to a vast underground cavern found its walls covered with paintings of animals, including many that had been extinct for thousands of years. Other ancient cave paintings have been found in Spain, Africa, Australia, and elsewhere.

To even the most skeptical person, these artistic troves reveal rich imaginations and sophisticated skills, qualities also apparent in the stone tools and in the evidence of complex social relations uncovered from prehistoric sites. The production of such artworks and tools over wide areas and long periods of time demonstrates that skills and ideas were not simply individual expressions but were deliberately passed along within societies. These learned patterns of action and expression constitute *culture*. Culture includes material objects, such as dwellings, clothing, tools, and crafts, along with nonmaterial values, beliefs, and languages. Although it is true that some animals also learn new ways, their activities are determined primarily by inherited instincts. Only human communities trace profound cultural developments over time. The development, transmission, and transformation of cultural practices and events are the subject of *history*.

The first recognizable cultural activity, toolmaking, first appeared around 2 million years ago. The *Stone Age*, which lasted from then until around 4,000 years ago, can be a misleading label. Stone tools abound at archaeological sites, but not all tools were of stone. They were made as well of bone, skin, and wood, materials that survive poorly. In addition, the Stone Age encompasses many cultures and subperiods. Among the major subdivisions, the *Paleolithic* (Old Stone Age) lasted until 10,000 years ago, about 3,000 years after the end of the last Ice Age. The *Neolithic* (New Stone Age), which is associated with the origins of agriculture, followed.

**Food Gathering and Stone Tools**

Fossilized animal bones bearing the marks of butchering tools testify to the scavenging and hunting activities of Stone Age peoples, but anthropologists do not believe that early humans depended primarily on meat for their food. The few surviving present-day foragers (hunting and food-gathering peoples) in Africa derive the bulk of their day-to-day nourishment from wild vegetable foods, with meat reserved for feasts. The same was probably true for Stone Age peoples, even though tools for gathering and processing vegetable foods have left few traces because they were made of perishable materials. Ancient humans would have used skins and mats woven from leaves for collecting fruits, berries, and wild seeds. They would have dug edible roots out of the ground with wooden sticks.

Both meat and vegetables become tastier and easier to digest when they are cooked. The first cooked foods were probably found by accident after wildfires. Humans may have been setting fires deliberately as early as 1.5 million years ago, but only with the appearance of clay cooking pots some 12,500 years ago in East Asia is there hard evidence of cooking.

Researchers studying present-day foragers infer that Ice Age women would have done most of the gathering and cooking (which they could do while caring for small children). Older women past childbearing age would have been the most knowledgeable and productive food gatherers. Men, with stronger arms, would have been more suited than women to hunting, particularly for large animals.

All recent foragers have lived in small bands. The community has to have enough members to defend itself from predators and divide responsibility for collection and preparation of foods. However, too many members would exhaust the food available in the band’s immediate vicin-
Clothing and Lifestyle

Animal skin cloaks were probably an early form of clothing. While the oldest evidence of fibers woven into cloth dates from about 26,000 years ago, the appearance of the body louse around 70,000 years ago has been linked to people beginning to wear close-fitting garments. An "Iceman" from 5,300 years ago, whose frozen remains were found in the European Alps in 1991, was wearing many different garments made of animal skins sewn together with cord fashioned from vegetable fibers and rawhide (see Environment and Technology: The Iceman).

Although accidents, erratic weather, and disease might take a heavy toll on a foraging band, day-to-day existence was probably not particularly hard or unpleasant. Studies suggest that, in game-rich areas, obtaining necessary food, clothing, and shelter would have occupied only from three to five hours a day. This would have left a great deal of time for artistic endeavors, toolmaking, and social life.

Nonstone Technologies, Art, and Religion

The foundations of science, art, and religion were built during the Stone Age. Basic human survival was extensive knowledge about the natural environment. Gatherers learned which local plants were best for food and when they were available. Successful hunting required intimate knowledge of the habits of game animals. People learned how to use plant and animal parts for clothing, twine, building materials, and dyes; minerals for paints and stones for tools; and various natural substances for medicine and consciousness altering. It is very likely that the transmission of such knowledge involved verbal communication, even though direct evidence for language appears only in later periods.

Early music and dance have left no traces, but there is abundant evidence of painting and drawing. Because many cave paintings feature wild animals that were hunted for food, some believe they were meant to record hunting scenes or formed part of magical and religious rites to ensure successful hunting. However, a newly discovered cave in southern France features rhinoceroses, panthers, bears, and other animals that probably were not hunted for food. Other drawings include people dressed in animal skins and smeared with paint. In many caves there
The Iceman

The discovery of the well-preserved remains of a man at the edge of a melting glacier in the European Alps in 1991 provided detailed information about everyday technologies of the fourth millennium B.C.E. Not just the body of this “Iceman” was well preserved. His clothing, his tools, and even the food in his stomach survived in remarkably good condition.

Dressed from head to toe for the cold weather of the mountains, the fifty-year-old man was wearing a fur hat fastened under the chin with a strap, a vest of different colored deer-skins, leather leggings and loincloth, and a padded cloak made of grasses. His calfskin shoes also were padded with grass for warmth and comfort. The articles of clothing had been sewn together with fiber and leather cords. He carried a birch-bark drinking cup.

In a leather fanny pack he carried small flint tools for cutting, scraping, and punching holes, as well as some tinder for making a fire. He also carried a leather quiver with flint-tipped arrows, but his 6-foot (1.8-meter) bow was unfinished, lacking a bowstring. In addition, he had a flint knife and a tool for sharpening flints. His most sophisticated tool, indicating the dawning of the age of metals, was a copper-bladed ax with a wooden handle.

A small arrowhead lodged in his shoulder caused the Iceman’s death. In his stomach, researchers found the remains of the meat-rich meal he had eaten not long before he died.

The Iceman This is an artist’s rendition of what the Iceman might have looked like. Notice his tools, remarkable evidence of the technology of his day.

are stencils of human hands. Are these the signatures of the artists or the world’s oldest graffiti? Some scholars suspect that other marks in cave paintings and on bones from this period may represent efforts at counting or writing. Other theories suggest that cave and rock art represent concerns with fertility, efforts to educate the young, or elaborate mechanisms for time reckoning.

Without written texts it is difficult to know about the religious beliefs of early humans. Sites of deliberate human burials from about 100,000 years ago give some hints. The fact that an adult was often buried with stone implements, food, clothing, and red-ochre powder suggests that early people revered their leaders enough to honor them after death and may imply a belief in an afterlife.

Today we recognize that the Stone Age, whose existence was scarcely dreamed of two centuries ago, was a formative period. Important in its own right, it also laid the foundation for major changes ahead as human communities passed from being food gatherers to food producers.
The Agricultural Revolutions

For most of human existence people ate only wild plants and animals. But around 10,000 years ago global climate changes seem to have induced some societies to enhance their food supplies with domesticated plants and animals. More and more people became food producers over the following millennia. Although hunting and gathering did not disappear, this transition from foraging to food production was one of the great turning points in history because it fostered a rapid increase in population and greatly altered humans’ relationship to nature.

Because agriculture arose in combination with new kinds of stone tools, archaeologists called this period of change the “Neolithic” and the rise of agriculture the “Neolithic Revolution.” But that name can be misleading: first, stone tools were not its essential component, and second, it was not a single event but a series of separate transformations in different parts of the world. A better term is Agricultural Revolutions, which emphasizes that the central change was in food production and that agriculture arose independently in many places. In some cases agriculture included the domestication of animals for food as well as the cultivation of new food crops (see Map 1.1).

Food gathering gave way to food production in stages spread over hundreds of generations. The process may have begun when forager bands, returning year after year to the same seasonal camps, deliberately scattered the seeds of desirable plants in locations where they would thrive and discouraged the growth of competing plants by clearing them away. Such semicultivation could have supplemented food gathering for many generations. Eventually, families choosing to concentrate on food production would have settled permanently near their fields.

The presence of new, specialized tools for agriculture first alerted archaeologists to the beginning of a food production revolution. These included polished stone heads to work the soil, sharp stone chips embedded in bone or wooden handles to cut grain, and stone mortars to pulverize grain. Since stone axes were not very efficient for clearing away shrubs and trees, farmers used fire to get rid of unwanted undergrowth (the ashes were a natural fertilizer).

The transition to agriculture occurred first in the Middle East. By 8000 B.C.E. humans, by selecting the highest-yielding strains, had transformed certain wild grasses into the domesticated grains now known as emmer wheat and barley. They had also discovered that alternating the cultivation of grains and pulses (plants yielding edible seeds such as lentils and peas) helped maintain soil fertility. Women, the principal gatherers of wild plant foods, probably played a major role in this transition to plant cultivation, but the heavy work of clearing the fields would have fallen to men.

Plants domesticated in the Middle East spread to Greece as early as 6000 B.C.E., to the light-soiled plains of central Europe and along the Danube River shortly after 4000 B.C.E., and then to other parts of Europe over the next millennium (see Map 1.1). Early farmers in Europe and elsewhere practiced shifting cultivation, also known as swidden agriculture. After a few growing seasons, the fields were left fallow (abandoned to natural vegetation) for a time to restore their fertility, and new fields were cleared nearby. From around 2600 B.C.E. people in central Europe began using ox-drawn wooden plows to till heavier and richer soils.

Wheat and barley could not spread farther south because the rainfall patterns in most of Africa were unsuited to their growth. Instead, separate Agricultural Revolutions took place in Saharan and sub-Saharan Africa, beginning almost as early as in the Middle East. During a particularly wet period after 8000 B.C.E. people in what is now the eastern Sahara began to cultivate sorghum, a grain derived from wild grasses they had previously gathered. Over the next three thousand years the Saharan farmers domesticated pearl millet, blackeyed peas, a kind of peanut, sesame, and gourds. In the Ethiopian highlands farmers domesticated finger millet and a grain called teff. The return of drier conditions about 5000 B.C.E. led many Saharan farmers to move to the Nile Valley, where the annual flooding of the river provided moisture for farming. People in the rain forests of equatorial West Africa domesticated yams and a variety of rice.

The kind of rice eaten in most places today, which thrives in warm and wet conditions, was first domesticated in southern China, the northern half of Southeast Asia, or northern India, possibly as early as 10,000 B.C.E. but more likely closer to 5000 B.C.E. In India several pulses (including hyacinth beans, green grams, and black grams) domesticated about 2000 B.C.E. were cultivated along with rice.
MAP 1.1 Early Centers of Plant and Animal Domestication  Many different parts of the world made original contributions to domestication during the Agricultural Revolutions that began about 10,000 years ago. Later interactions helped spread these domesticated animals and plants to new locations. In lands less suitable for crop cultivation, pastoralism and hunting remained more important for supplying food.
The inhabitants of the American continents were domesticating other crops by about 5000 B.C.E.: maize (maize) (corn) in Mexico, manioc in Brazil and Panama, and beans and squash in Mesoamerica. By 4000 B.C.E., the inhabitants of Peru were developing potatoes and quinoa (keen-NOH-ul), a protein-rich seed grain. Insofar as their climates and soils permitted, other farming communities throughout the Americas adopted these crops, along with tomatoes and peppers. The domestication of animals also expanded rapidly during these same millennia. The first domesticated animal was the dog, possibly tamed to help early hunters in Siberia track game. Later animals were initially domesticated to provide meat and were later exploited for milk, fiber, and energy.

Refuse heaps outside some Middle East villages during the centuries after 7000 B.C.E. show that sheep and goat bones gradually replaced gazelle bones. Since genetically inherited tameness is part of the definition of domestication, it is assumed that reproductive isolation of captive sheep and goats from their wild cousins was a necessary part of the process. How and why people isolated animals in this fashion is unclear and probably differs from one species to another. Selective breeding for desirable characteristics such as high milk production and long wooly coats eventually led to distinct breeds of sheep and goats. Domestic cattle and pigs are of similar antiquity to sheep and goats, though scholars debate the location of their first domestication.

Elsewhere, other animal species were domesticated during the centuries before 3000 B.C.E.: donkeys in northern Africa, camels in Arabia (one-humped) and Central Asia (two-humped), water buffalo in China, and humped-back Zebu (ZEE-bo) cattle in India. Varieties of domesticated animals spread from one region to another.

Once cattle became tame enough to be yoked to plows, which occurred long after their initial domestication, they became essential to grain production. In addition, animal droppings provided valuable fertilizer. However, there were two notable deviations from the pattern of complementary agriculture and animal husbandry. In the Americas comparatively few species of wild animals became domesticated, and domesticated species from the Eastern Hemisphere could not spread to the Americas because the land bridge to Asia had been submerged by raised sea levels. Domesticated llamas provided transport and wool, while guinea pigs, dogs, and turkeys furnished meat. Hunting remained the most important source of meat for Amerindians.

In the more arid parts of Africa and Central Asia, pastoralism, a way of life dependent on large herds of small and large stock, predominated. As the Sahara approached its maximum dryness around 2500 B.C.E., pastoralists replaced farmers, who migrated southward (see Chapter 7). Moving their herds to new pastures and watering places throughout the year made pastoralists almost as mobile as foragers and discouraged accumulation of bulky possessions and construction of substantial dwellings. Early herders probably relied more heavily on milk than on meat, since killing animals reduced their herds. During wet seasons, they may also have done some hasty crop cultivation or bartered meat and skins for plant foods with nearby farming communities.

Why did the Agricultural Revolutions occur? Some theories assume that people were drawn to food production by its obvious advantages. However, most experts believe that climate change drove people to abandon hunting and gathering in favor of agriculture or pastoralism. With the end of the Great Ice Age, the temperate lands became exceptionally warm between 6000 and 2000 B.C.E., the era when people in many parts of the world adopted agriculture. The precise nature of the crisis probably varied. Shortages of wild food in the Middle East caused by a dry spell or population growth may have prodded people to take up food production. Elsewhere, a warmer, wetter climate could turn grasslands into forest, reducing supplies of game and wild grains.

In many drier parts of the world, where wild food remained abundant, people did not take up agriculture. The inhabitants of Australia continued to rely exclusively on foraging until recent centuries. Many Amerindians in the arid grasslands from Alaska to the Gulf of Mexico hunted bison, while in the Pacific Northwest others took up salmon-fishing. Abundant supplies of fish, shellfish, and aquatic animals permitted food gatherers east of the Mississippi River to thrive, and conditions in the equatorial rain forest and the southern part of Africa also favored retention of the older ways. The reindeer-based societies of northern Eurasia were also unaffected by the spread of farming.

Whatever the causes, the gradual adoption of food production transformed most parts of the world. A hundred thousand years ago there were fewer than 2 million people, and their range was largely confined to the temperate and tropical regions of Africa and Eurasia. The population
may have fallen even lower during the last glacial epoch, between 32,000 and 13,000 years ago. Then, as the glaciers retreated and people took up agriculture, their numbers rose. World population may have reached 10 million by 5000 B.C.E. and then mushroomed to between 50 million and 100 million by 1000 B.C.E. This increase led to important changes in social and cultural life.

Life in Neolithic Communities

Evidence that an ecological crisis may have driven people to food production has prompted a reexamination of the assumption that farmers enjoyed better lives than foragers. Modern studies demonstrate that food producers have to work much harder and for much longer periods than do food gatherers, clearing and cultivating land, guiding herds to pastures, and guarding them from predators.

Early farmers were less likely to starve because they could store food between harvests, but their diet was less varied and nutritious than that of foragers. Skeletal remains show that Neolithic farmers were shorter on average than earlier food-gathering peoples. Farmers were also more likely to die at an earlier age because people in permanent settlements were more exposed to diseases. Their water was contaminated by human waste; disease-bearing vermin and insects infested their bodies and homes; and they could catch new diseases from their domesticated animals.

So how did farmers displace foragers? Some researchers have envisioned a violent struggle between practitioners of the two ways of life; others have argued for a more peaceful transition. In most cases, farmers seem to have displaced foragers by gradual infiltration rather than by conquest.

The key to the food producers' expansion may have been the fact that their small surpluses gave them a long-term advantage in population growth by ensuring higher survival rates during times of drought or other crisis. Archaeologist Colin Renfrew argues that over a few centuries farming-population densities in Europe could have increased by a factor of fifty to one hundred. As population rose, individuals who had to farm far from their native village would have formed a new settlement close to their fields. A steady, nonviolent expansion of only 12 to 19 miles (20 to 30 kilometers) a generation could have repopulated the whole of Europe between 6500 and 3500 B.C.E. So gradual a process need not have provoked sharp conflicts with existing foragers, who simply could have stayed clear of the agricultural frontier or gradually adopted agriculture themselves. New studies that map genetic changes also attest to a gradual spread of agricultural people across Europe from southeast to northwest.

The expanding farming communities were organized around kinship and marriage. Nuclear families (parents and their children) probably lived in separate households but felt solidarity with all those related to them by descent from common ancestors. These kinship units, known as lineages [LIN-ee-i] or clans, acted together to defend their common interests and land. Some societies trace descent equally through both parents, but most give greater importance to descent through either the mother (matrilineal [mat-ruh-LIN-ee-uhl] societies) or the father (patrilineal [pat-ruh-LIN-ee-uhl] societies). It is important not to confuse tracing descent through women (matrilineality) with the rule of women (matriarchy [MAY-tree-uhr-keh]).

Kinship systems influenced early agricultural people's outlook on the world. Burials of elders might be occasions for elaborate ceremonies expressing their descendants' group solidarity. plastered skulls found in the ancient city of Jericho [JER-ih-koh] (see Map 1.2) may be evidence of such early ancestor reverence or worship.

A society's religious beliefs tend to reflect relations to nature. The religion of food gatherers tended to center on sacred groves, springs, and wild animals. Pastoralists worshiped the sky god who controlled the rains and guided their migrations. In contrast, the religion of many farming communities centered on the earth mother, a female deity believed to be the source of all new life.

A recently discovered complex of stone structures in the Egyptian desert that was in use by 5000 B.C.E. includes burial chambers presumably for ancestors, a calendar circle, and pairs of upright stones that frame the rising sun on the summer solstice. The builders must have been deeply concerned with the cycle of the seasons and how they were linked to the movement of heavenly bodies. Other megaliths (meaning "big stones") were erected elsewhere. Observation and worship of the sun are evident at the famous stonehenge site in England, constructed about
Passage-Tomb at Newgrange, Ireland

Dating to around 3200 B.C.E., Newgrange is one of the oldest and most impressive Neolithic structures. A wall of white quartz stones rises above a row of horizontal megaliths on either side of the entrance, from which a passage leads to a spacious interior chamber. For several minutes each year, at sunrise on the winter solstice, the chamber is illuminated by a shaft of light which passes through the "roof-box" above the entrance.

2000 B.C.E., and megalithic burial chambers dating from 4000 B.C.E. are evidence of ancestor rituals in western and southern Europe. The early ones appear to have been communal burial chambers, erected by descent groups to mark their claims to farmland. In the Middle East, the Americas, and other parts of the world, giant earth burial mounds may have served similar functions.

Most early farmers lived in small villages, but in some parts of the world a few villages grew into more densely populated towns that were centers of trade and specialized crafts. These towns had grander dwellings and ceremonial buildings, as well as large structures for storing surplus food until the next harvest. Farmers could make most buildings, tools, and containers in their spare time, but in large communities some craft specialists devoted their full time to making products of unusual complexity or beauty.

Two early towns in the Middle East that have been extensively excavated are Jericho on the west bank of the Jordan River and Çatal Hüyük (cha-TAHL hoo-YOOK) in central Turkey. (Map 1.2 shows their locations.) Jericho, located near a natural spring, was an unusually large and elaborate agricultural settlement. Around 8000 B.C.E. it had round, mud-brick dwellings that may have been modeled on hunters' tents. A millennium later, rectangular buildings with finely plastered walls and floors and wide doorways opened onto central courtyards. A massive stone wall surrounding the 10-acre (4-hectare) settlement defended it against attacks.

The ruins of Çatal Hüyük, an even larger town, date to between 7000 and 5000 B.C.E. and cover 32 acres (13 hectares). Its residents also occupied plastered mud-brick rooms with elaborate decorations, but Çatal Hüyük had no defensive wall. Instead, the walls of the town's houses formed a continuous barrier without doors or large windows. Residents entered their house by means of ladders through holes in the roof.
MAP 1.2 River-Valley Civilizations, 3500–1500 B.C.E. The earliest complex societies arose in the floodplains of large rivers: in the fourth millennium B.C.E. in the valley of the Tigris and Euphrates Rivers in Mesopotamia and the Nile River in Egypt, in the third millennium B.C.E. in the valley of the Indus River in Pakistan, and in the second millennium B.C.E. in the valley of the Yellow River in China.
Neolithic Goddess  Many versions of a well-nourished and pregnant female figure were found at Çatal Hüyük. Here she is supported by twin leopards whose tails curve over her shoulders. To those who inhabited the city some 8,000 years ago, the figure likely represented fertility and power over nature.

Çatal Hüyük prospered from long-distance trade in obsidian, a hard volcanic rock that craftspeople made into tools, weapons, mirrors, and ornaments. Other residents made fine pottery, wove baskets and woolen cloth, made stone and shell beads, and worked leather and wood. House sizes varied, but there is no evidence of a dominant class or centralized political structure. Fields around the town produced crops of barley and emmer wheat, as well as vegetables. Pigs were kept along with goats and sheep. Yet wild foods—acorns, wild grains, and game animals—still featured prominently in the residents’ diet.

Wall paintings, remarkably similar to earlier cave paintings, reveal the continuing importance of hunting. Scenes depict people adorned with the skins of wild leopards, and men were buried with weapons of war and hunting, not the tools of farming.

For every two houses in Çatal Hüyük, there is a religious shrine. Many rooms contain depictions of horned wild bulls, female breasts, goddesses, leopards, and handprints. Rituals involved burning grains, legumes, and meat as offerings, but there is no evidence of live animal sacrifice. Statues of plump female deities far outnumber statues of male deities, suggesting that the inhabitants primarily venerated a goddess. According to the site’s principal excavator, “it seems extremely likely that the cult of the goddess was administered mainly by women.”

Metallurgy became an important specialized occupation in the late Neolithic period. At Çatal Hüyük objects of copper and lead—metals that occur naturally in a fairly pure form—date to about 6400 B.C.E. In many parts of the world silver and gold were also worked at an early date. Because of their rarity and softness, those metals did not replace stone tools and weapons but were used primarily to make decorative or ceremonial objects. The discovery of many such objects in graves suggests they were symbols of status and power.

The emergence of towns and individuals engaged in crafts and other specialized occupations added to the workload of agriculturalists. Extra food had to be produced for nonfarmers such as priests and artisans. Added labor was needed to build permanent houses, town walls, and towers, not to mention religious structures and megalithic monuments. It is not known whether these tasks were performed freely or coerced.

SECTION REVIEW

• Around 10,000 years ago, during the Neolithic Age, humans began to cultivate plants and to domesticate animals in various parts of the world. Climate change is probably the major reason for the switch from food gathering to food production.

• Although farming is often harder than hunting and gathering, agriculturalists, because of their capacity to increase their population, expanded across much of the planet at the expense of hunter-gatherers. The process was gradual and largely peaceful. In some places pastoralism, the dependence on herd animals, prevailed.

• Megaliths and other monumental structures are products of the diverse religious beliefs and practices of Neolithic societies.

• In some places small agricultural villages developed into towns that were centers of trade and home to craftsmen and other specialized professions. Jericho and Çatal Hüyük are two excavated sites that give us vivid glimpses of early Neolithic towns.