All humans engage in some form of activity to provide food, clothing, shelter and the other amenities of life, but the varied activities of today owe their success to decisions of the past. The development of agriculture may well be the single most important development in human history. Food shortages, for example, led to the French Revolution, defeat of Napoleon in Russia, and riots in the Ottoman Empire. The success of farming supported both rural and urban populations. With the combination of agriculture and technology lies the ability to provide food and security for all humanity. Today, as many as half of the people in the world reside in rural areas – many of them living as farmers. But when and how did this begin?

The Origin of Agriculture

The deliberate tending of crops and livestock in order to produce food and fiber is properly called **agriculture**, an activity that may be less than 12,000 years old (during Neolithic times) and emerged sequentially in several regions of the world. Global temperatures gradually increased from around 16,000 B.C. until around 10,000 B.C., when global temperatures dipped. People started dying, and some of those that survived experimented by burying parts of plants in the ground. The great invention of agriculture probably occurred first in the areas of the tropical seashores where settled fishermen were able to produce enough surplus so that they could invest some of their wealth and time into the experimentation and nurturing of plants and animals. Carl Sauer, a renowned geographer, proposed that **plant domestication** began with root plants (e.g., ancestors to vegetables like radishes) as opposed to seed plants (e.g., wheat, oats). This was the beginning of the cultivation of plants – the Neolithic or First Agricultural Revolution. Soon the knowledge needed to farm such crops diffused outward from certain agricultural hearths. Regions like the Bay of Bengal (adjacent to India), the Fertile Crescent (in modern day Iraq), and the Nile valley (Egypt) were ideal sites due to the fertile soil, river valleys, and relatively warm weather. Even around Mesoamerica (Central America) farming developed through independent invention, with no direct contact to the “Old World”. Farming was a necessity; without it, these civilizations would have collapsed and died out.

Before this time, mankind generally existed through hunting and gathering whatever nature had to offer. Today, there are still societies today that exist in much the same way. The San in South Africa, some aboriginal peoples in Australia and Papua New Guinea, the Native Americans of Brazil, and several others live by hunting and gathering. Originally, the hunting was done with poisoned spears, clubs, bows and arrows, and sticks – but in the modern era it is not unusual to find these people using rifles, jeeps, and other modern technology. In the case of the San, they sometimes poison water holes and follow the animals until they succumb.
The capacity of early human communities to sustain themselves was enhanced by their local knowledge of the terrain and its exploitable resources, as well as their ability to improve their tools and weapons. The first tools were simple – clubs, branches – but the use of bone and stone, and especially the development of spears made hunting more effective. Fashioning stone into hand axes enabled the hunters to skin their prey and cut their meat. Some societies in Papua New Guinea essentially still live in the “stone age” today. The controlled use of fire was another important early achievement. Fire made their food more digestible and was even used to drive animals into traps or off cliffs. Fishing communities developed around the coasts, using rudimentary rafts and canoes (controlled use of fire made the dugout canoe possible). Basic metalworking evolved as well, although metallurgy – the separating of metals from their ores – would come later. All these advancements paled in comparison with the development of agriculture, because it was agriculture that enabled these societies to plan for the future. When you can grow enough food and store it, you can stay in one place for a long period of time. Perhaps the most key human invention of that time was the plow. The plow enabled them to sow their seeds in an organized fashion – so they could estimate just how much food they could produce.

When humans embraced agriculture they changed the world and human culture forever. Food supplies became more dependable and quantities increased. This in turn led to population increases and, eventually, permanent settlements. Agriculture changes more of the Earth’s surface than any other human activity and thus a cultural landscape that is reflective of the numbers, cultivation practices, settlement patterns, and other cultural characteristics of the population. However, while our ancient ancestors were learning to plant crops, they were also beginning a long process of animal domestication – which only became possible when communities became more sedentary.

Animal domestication probably began when animals attached themselves to human settlements as scavengers and even for protection against predators. Some scholars believe animal domestication may have begun before plant cultivation. Wild cattle, for example, may have been kept for religious purposes – for ceremonies or for sacrifice. Eventually these animals were used as beasts of burden (e.g., pulling plows), or sources of sustenance (e.g., milk, meat). When animals such as wild cattle are penned in a corral, they undergo physical changes as time goes by. Our domestic versions of the pig, cow, and horse differ considerably from those first kept by our ancestors. Indeed, throughout the world only about 40 species of higher animals have been domesticated – and most of these were domesticated long ago.

The increasing availability of animal energy expanded humans’ ability to till the soil. Techniques of harnessing animals evolved from the early forms of tying plows to the heavy horns of cattle to the advanced harnessing system for horses. Europeans developed the heavy horse collar which enabled the weight that the animals were pulling to be transferred to their powerful shoulders and away from their windpipe and neck. This made the horse much more effective. The use of large draft horses enabled farmers to till heavier, more productive soils, which ensured better yields of grain. Better yields meant more food for animals and eventually large, more powerful animals. Although agricultural technology evolved in all parts of the world, the process was slow. Farmers were reluctant to experiment with new, risky ventures for fear of crop failure and famine.

A great majority of the wild animals suitable for domestication inhabited Eurasia; far fewer species were available in the Americas, Australia, or Africa. Because the Europeans had large domesticated animals (oxen,
horses), and because the circulation systems of humans and animals are somewhat similar – the Europeans’ immune systems were more developed than, say, the Native Americans. The largest animal the Native Americans had domesticated by the time Christopher Columbus reached the “New World” was the dog.

Animal domestication is one of the key reasons why the European diseases (smallpox, influenza, typhus,...) were much more devastating for the Americans, than the American diseases (e.g., syphilis) were to the Europeans. Disease, more than swords and guns, enabled the Europeans to conquer the Americas so completely and quickly – which all traces back to animal domestication.

Subsistence Farming

Today, we tend to think of agriculture in terms of cash cropping (farming for sale and profit): plantations, ranches, mechanized farms, and so on. We often associate certain crops with particular countries; these are usually cash commodities: Colombian coffee, Egyptian cotton, Australian wool, Argentinean beef. However, hundreds of millions of farmers grow only enough food to survive – they are subsistence farmers.

Subsistence agriculture, which produces little or no surplus and involves hundreds of millions of people in a struggle for survival, still prevails in large regions of tropical Africa, Asia, and the Americas. Here farmers grow food only to survive. Some subsistence farmers may, in fact, practice shifting cultivation, a method of tillage where plots are farmed until the soil is depleted and then the farmers move on and clear a new field. As many as 200 million people still subsist in this manner in tropical regions of Africa, Middle America, and South America, using methods that have not changed in thousands of years. The term slash-and-burn agriculture is also used to describe shifting cultivation. Trees are cut down and all vegetation is burned off. The resulting layer of ash contributes to the soil’s fertility. Usually there is a central village surrounded by parcels of lands that are worked successively. Population densities in areas of shifting cultivation cannot be very high. Although this may seem wasteful at first, they typically reuse the same land over and over again – in this way, it is similar to crop rotation.

Another type of subsistence farming is more sedentary, where farmers are confined to a small field that they farm intensively year after year. Very likely, they do not even own the soil that they till. These farmers grow food only to sustain themselves and their families, find building materials and firewood in the local environment, and do not enter into the cash (formal) economy at all. Sometimes farmers may sell food on the market, but poverty and indebtedness is still the usual way of life. For the Native American peoples in the Amazon Basin, the sedentary farmers of Africa’s savanna areas, villagers in much of India, and the peasants in Indonesia, subsistence is not only a way of life but a state of mind. Experience has taught these farmers and their families that times of comparative plenty will be followed by times of scarcity. It should also serve to remind us that the security of plentiful food supplies in the technically advanced, wealthier countries is not shared by many of the Earth’s population.

Marginalization of Subsistence Farming

European powers tried to end subsistence practices by integrating farmers into the colonial systems of production and trade. They compelled many subsistence farmers to devote some land to a cash crop such as sugar cane, thus bringing them into the commercial economy. These colonial powers offered genuine assistance by building irrigation systems and providing loans to farmers.

Today, subsistence farmers are often pushed away from traditional modes of livelihood, and are tempted by the availability of consumer goods by the core (wealthy industrialized countries). These changes may have a negative impact in that the changing farmers’ attitudes could result in a less cohesive society. Subsistence farmers often hold land in common; surpluses are shared; accumulation of personal wealth is restricted; and individual advancement at the cost of the group is limited. This way of life certainly reflects a pure communal ideology. As land that was once held communally is being parcelled out to individuals for cash cropping, the system that ensured an equitable distribution of resources is breaking down.