Asia

I INTRODUCTION

Asia, largest of the Earth’s seven continents, lying almost entirely in the Northern Hemisphere. With outlying islands, it covers an estimated 44,391,000 sq km (17,139,000 sq mi), or about 30 percent of the world’s total land area. Its peoples account for three-fifths of the world’s population; in 2005 Asia had an estimated 3.91 billion inhabitants.

Most geographers regard Asia as bounded on the north by the Arctic Ocean, on the east by the Bering Strait and the Pacific Ocean, on the south by the Indian Ocean, and on the southwest by the Red Sea and Mediterranean Sea. On the west, the conventional boundary between Europe and Asia is drawn at the Ural Mountains, continuing south along the Ural River to the Caspian Sea, then west along the Caucasus Mountains to the Black Sea. Some geographers include Europe and Asia together in a larger Eurasian region, noting that western Asian countries, such as Turkey, merge almost imperceptibly into Europe.

The continental mainland stretches from the southern end of the Malay Peninsula to Cape Chelyuskin in Siberia. Its westernmost point is Cape Baba in northwestern Turkey, and its easternmost point is Cape Dezhnyov in northeastern Siberia. The continent’s greatest width from east to west is 8,500 km (5,300 mi). The lowest and highest points on the Earth’s surface are in Asia, namely, the shore of the Dead Sea (408 m/1,340 ft below sea level in 1996) and Mount Everest (8,850 m/29,035 ft above sea level).

South of the mainland in the Indian Ocean are Sri Lanka and smaller island groups, such as the Maldives and the Andaman and Nicobar islands. To the southeast is an array of archipelagoes and islands that extend east to the Oceanic and Australian realms. Among these islands are those of Indonesia, including Java, Sumatra, Sulawesi, and Borneo. The western end of the island of New Guinea is within Indonesia and for that reason geographers occasionally consider it part of Asia. In this encyclopedia, however, it is treated as a part of the Pacific Islands. The Philippine Islands, which include Luzon and Mindanao, are also among the Southeast Asian islands. To their north lie Taiwan, the Chinese island of Hainan, the islands of Japan, and the Russian island of Sakhalin.

Because of its vast size and diverse character, Asia is divided into five major realms: East Asia, including China, Mongolia, North Korea, South Korea, and Japan; Southeast Asia, including Myanmar (formerly known as Burma), Thailand, Cambodia, Laos, Vietnam, Malaysia, Singapore, Indonesia, Brunei, and the Philippines; South Asia, including India, Bangladesh, Pakistan, Sri Lanka, Maldives, Nepal, and Bhutan; and Southwest Asia, including Afghanistan, Iran, Iraq, Turkey, Cyprus, Armenia, Azerbaijan, Georgia, Syria, Lebanon, Israel, Jordan, Saudi Arabia, Yemen, Oman, United Arab Emirates, Qatar, Bahrain, and Kuwait. Most of the countries of Southwest Asia are also considered part of the Middle East, a loosely defined region that includes Egypt. Afghanistan and Myanmar are sometimes considered part of South Asia, but most geographers place Afghanistan in Southwest Asia and Myanmar in Southeast Asia. The fifth realm consists of the area of Russia that lies east of the Ural Mountains (Russian Asia) and the states of Central Asia that were formerly part of the Union of Soviet Socialist Republics (USSR). These states are Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan.

The continent may also be divided into two broad cultural realms: that which is predominantly Asian in culture (East Asia, Southeast Asia, and South Asia) and that which is not (Southwest Asia, Central Asia, and Russian Asia). There is enormous cultural diversity within both regions, however.

II THE NATURAL ENVIRONMENT

As the largest continent, Asia contains some of the world's most spectacular natural features, including high mountain ranges, vast plateaus, majestic river basins, and lakes and inland seas. The centerpiece is the high mountains of the Himalayas and the associated Tibetan Plateau (Qing Zang Gaoyuan). To the far north are vast plateau regions of Siberia and open waterways such as Lake Baikal. Located in an arc around the eastern rim of the continent are the plateaus of China, dissected by great rivers, including the Yangtze River (Chang Jiang). In South Asia, the Deccan Plateau dominates India. Toward the west is the Arabian Peninsula, and in a northwesterly direction are the steppes of Central Asia.

A Geological History

According to the theory of plate tectonics, the crust of the Earth's surface is made up of vast continental and oceanic plates. These are in constant motion, rubbing and pushing against one another, moving only small amounts each year. The Eurasian continental plate is the largest. It is composed of some of the most ancient rocks on Earth, originating in Precambrian time from 4.65 billion to 570 million years ago. These ancient materials can today be found in eastern Siberia, throughout the Arabian Peninsula, and in India south of the Indus and Ganges rivers.

A huge sea called Tethys covered most of the interior of Eurasia during the Paleozoic and Mesozoic eras, which lasted from 570 million to 65 million years ago. Thick deposits of sediment formed on the seafloor, eventually becoming the layers of rock that form the geological features of the present day.

The Indian subcontinent broke off from the southeastern corner of the African continental plate during the Cretaceous period. It drifted in a northeasterly direction and collided with the larger Eurasian plate, slipping partly underneath it. The impact created an enormous "deep" that eventually filled with sediments and became the Gangetic Plain. The collision also generated enormous pressure on the southern edge of the Eurasian plate, causing this region to crumple; this forced an uplift of rock that created the Himalayas, the world's highest mountain system.

The Pacific Ocean plate drifted westward, scraping along the Eurasian plate and slipping under its coastal edge. This created the islands of Japan, Taiwan, the Kurils, the Ryūkyūs, and the Philippines. Southeast Asia lies at the intersection of the Eurasian, Pacific Ocean, and Indian Ocean plates. Over time the contact between these plates created the mountain ranges of mainland Southeast Asia. The continued slow movement of the plates causes friction and instability deep below the Earth's surface, producing volcanoes and earthquakes.

B Surrounding Waters and Islands

Asia is bounded on three sides by oceans: the Arctic to the north, the Pacific to the east, and the Indian to the south. Many seas, bays, and gulfs indent the continent's coastline, which is 62,000 km (39,000 mi) long.

The most prominent seas along the northeastern rim of Asia are the Bering Sea in the far north between Asia and North America; the Sea of Okhotsk, located west of the Kamchatka Peninsula and north of the Kuril Islands; the Sea of Japan (East Sea), which fills the gap between Japan and the Asian mainland; and the Yellow Sea, situated between China and Korea. The Kuril Islands, Japan's major islands of Hokkaidō, Honshū, Shikoku, and Kyūshū and Taiwan run along a thread from north to south.

The South China Sea lies adjacent to Southeast Asia, linking mainland countries to the Philippines and Indonesia. The Gulf of Tonkin sits between Vietnam and China's Hainan Island, while the narrow Strait of Malacca separates the Indonesian island of Sumatra from the Malay Peninsula. Java Island lies across the Java Sea from Borneo, the world's third largest island after Greenland and New Guinea. To the southeast is the Timor Sea separating the Asian island of Timor from the Australian continent.

The Indian subcontinent is flanked by the Bay of Bengal on the east and the Arabian Sea on the west. The island of Sri Lanka and the much smaller Maldives and Nicobar Islands trail away to the south.

The Arabian Sea's Gulf of Aden, the Red Sea, the Mediterranean Sea, and the Black Sea form an arc along the western rim of Asia, providing natural boundaries with Africa and Europe. The Suez Canal, an artificial waterway excavated in the mid-19th century, provides a passage for ships between the Mediterranean and Red seas. The Persian Gulf provides Saudi Arabia, Iraq, and Kuwait access to the Arabian Sea.

C Plains and Deserts

Plains occupy more land area in Asia than any other type of physical feature. Most of the western and northeastern parts of Russian Asia consist of plains. Other large plains include those of the Tigris and Euphrates rivers in Southwest Asia, the Ganges River in northern India, the Mekong River in Southeast Asia, and the Yangtze River in China.

Deserts are a feature of the Asian interior north of the Himalayas and large parts of Southwest Asia, especially the Arabian Peninsula. There the Syrian Desert, a plateau strewn with rock and gravel, spreads through southern Syria, northeastern Jordan, and western Iraq. Farther to the south, in southern Saudi Arabia, lies the Rub‘ al Khali (Empty Quarter). It is the largest continuous body of sand in the world.

Large deserts are also spread throughout Central Asia. The Garagum (Turkic for "black sand") occupies most of Turkmenistan. Southern Kazakhstan and northern Uzbekistan share the Qyzylkum (Turkic for "red sand"), which lies southeast of the Aral Sea.

Stretching east across Mongolia and into China's Inner Mongolia Autonomous Region is the Gobi, a cold, high plateau with an average elevation of 900 m (3,000 ft). Southwest of the Gobi is the Takla Makan Desert in the Xinjiang Uygur Autonomous Region of China. Both deserts are in the rain shadow of the Himalayas, which blocks the movement of moist air from the Indian Ocean.

D Mountain Ranges

Asia's mightiest mountain ranges radiate in great sweeping arcs from the Pamirs of Central Asia, a highland region where Tajikistan, Afghanistan, and China intersect. Southeast of the Pamirs are the Himalayas, spanning 2,400 km (1,500 mi) from the border between India and Pakistan in the west to the border between India and Myanmar in the east. The Karakorum Range lies just north of the western Himalayas. These two ranges contain all but two of the world's highest peaks, including Mount Everest, which lies on the border between Tibet and Nepal. Smaller mountain ranges extend southward from the eastern Himalayas into the Indochinese Peninsula.

East and northeast of the Pamir knot, the Kunlun Mountains and the Tian Shan extend for more than 1,600 km (1,000 mi) into China. To the west, extending into central Afghanistan, is the Hindu Kush. Ranges connected to the Hindu Kush then extend into northern Iran, where they are known as the Elburz Mountains. A branch of the Elburz becomes the Caucasus Mountains between Europe and Asia.

A low range of mountains extends southwestward from the Pamir knot into western Pakistan, where they are known as the Sulaimān Range. These mountains then continue northwestward through Iran into southern Turkey, where they are known as the Taurus Mountains.

Other important mountain ranges of Asia, such as the low Nan Ling hills in central and southern China, are not directly connected to the high mountain chains that meet at the Pamirs.

E Plateaus

Several plateaus lie between the mountain ranges of Central Asia. The highest is the Tibetan Plateau, often referred to as the Roof of the World, which is bounded by the Kunlun Mountains and the Himalayas. About 1,300,000 sq km (500,000 sq mi) of this plateau lies at an elevation above 4,300 m (14,000 ft). The principal plateaus of Southwest Asia are the Anatolian Plateau of central Turkey, the Arabian Plateau, and the Iranian Plateau. In South Asia, most of the peninsula of India consists of the great triangular Deccan Plateau. The Yunnan Plateau extends over much of the Indochinese Peninsula and the southwestern part of China. Much of the northern part of Russian Asia is occupied by the Central Siberian Plateau.

F Rivers, Lakes, and Inland Seas

East Asia is the location of the continent's longest river, the Yangtze, which flows 6,300 km (3,900 mi) eastward from Tibet to the East China Sea. The Huang He (Yellow River) also rises in the Tibetan highlands, flowing east across central China to its mouth at the Yellow Sea. The Zhu Jiang (Pearl River) rises in southwestern China and flows through the southern part of the country on its route to the South China Sea.

In Southeast Asia the major rivers flow southward between mountain ranges. The Mekong rises in eastern Tibet and flows southeast to the South China Sea. The Salween also originates in Tibet, where it is called

the Nu Jiang, flowing south to the Andaman Sea. The Irrawaddy, which rises in the mountains of northern Myanmar, also empties into the Andaman Sea.

The major rivers of South Asia have their sources in the Himalayas. The Ganges rises in the western Himalayas and passes eastward through India. Just north of the Bay of Bengal it joins the Brahmaputra River, which rises beyond the Himalayas and then empties into the bay. The Indus River emerges from the western end of the Himalayas and flows through Jammu and Kashmīr and western Pakistan into the Arabian Sea.

The only large rivers of Southwest Asia are the Tigris and the Euphrates. Both rivers rise in Turkey and flow southward through Syria into Iraq, where they join before emptying into the Persian Gulf.

The three longest rivers of Russian Asia are the Ob', the Yenisey, and the Lena, all of which are more than 3,600 km (2,200 mi) long. These rivers rise in southern Siberia and flow northward into the Arctic Ocean.

River basins in tropical and temperate Asia support the highest population densities. The Gangetic Plain, which lies between the Himalayas and the Deccan Plateau; the basins of the Irrawaddy, Mekong, and Chao Phraya in Southeast Asia; and the basins of China's great rivers, especially the Yangtze, Huang He, and Zhu Jiang rivers, are all densely settled. These valleys have fertile soils for agriculture and the rivers serve as a means of transportation.

Some of Asia's important rivers flow into inland lakes. The Jordan River rises in the mountains of Lebanon and Syria and flows southward into the Dead Sea, a saltwater lake seven times more salty than the ocean. At 408 m (1,340 ft) below sea level, the surface of the Dead Sea is the lowest point on Earth. The Syr Darya and the Amu Darya of Central Asia both drain into the Aral Sea, also a saltwater lake. Since the 1960s the diversion of much water from the Syr Darya and Amu Darya for irrigation has caused the Aral Sea to shrink to less than half its former size. In 1988 the lake split in two, forming the Large Aral Sea, which receives water from the Amu Darya, and the Small Aral Sea, which receives water from the Syr Darya. The decreased water intake has also increased the salt content of the lake. The Caspian Sea is the largest saltwater lake in the world. Lake Balqash in Kazakhstan is another major saltwater lake.

Lake Baikal in southeastern Siberia is the deepest lake in the world and the largest freshwater lake in Asia. The Tônlé Sap, a shallow lake in western Cambodia, is the largest lake in Southeast Asia. It provides a lucrative source of fish for local residents. The Tônlé Sap becomes more than three times its normal size between June and October when floodwaters of the Mekong River empty into the lake.

G Climates

Most of Asia's climates are similar to the interior and eastern-coast climates of North America at similar latitudes. Like northern Canada, the northernmost areas of Asia have a subpolar climate with very long, cold winters and very short, cool summers.

A vast area with a subarctic climate lies farther inland and generally southward. It is isolated from the Arctic Ocean and is little influenced by the Pacific because the prevailing winds blow from the west. This area experiences great extremes of temperature. Summers are short, but temperatures can reach as high as 34°C (94°F), and winter temperatures are among the coldest in the world.

South of the subarctic regions is a broad stretch of land having a humid continental climate with short summers. Winters are severe, but summer days are warm or even hot. In Russia, the subarctic region extends from the border with Poland on the west to Siberia on the east, and includes much of the country's best farmland. Northern China and central Japan also have a humid continental climate, but their summers are long. This is similar to the climate of the midwestern United States, although northern China generally has drier winters.

A humid subtropical climate, similar to that of the southeastern United States, occurs in southeastern China and southern Japan. Both areas receive precipitation throughout the year. Northern India south of the Himalayas also has a subtropical climate. Moisture-laden winds called monsoons carry heavy precipitation to the region in summer. The winters are dry. This rainy-and-dry, tropical climate, which is also characteristic of much of Indochina, is influenced by the seasonal movement of air masses. The summer monsoons usually occur between May and October in areas north of the equator. If the monsoons arrive late, the lack of rain may ruin crops or keep them from growing, causing food shortages for millions of people.

India's southwestern coast and the coastal areas and islands of Southeast Asia experience heavy rain throughout the year. Near the equator, this rain results from hot humid air that rises and expands, then cools in the upper atmosphere and condenses into rain (*see* Rain: *Process of Precipitation*). In the coastal areas farther north of the equator, such as the southwestern coast of India, the rainy tropical climate is the result of constant moisture-laden winds coming largely from the sea.

Vast areas of Central and Southwest Asia are arid or semiarid. In Central Asia, mountains and highlands block moisture-bearing winds from the sea.

Only a few areas of Asia have climates that are typical of the west coasts of continents. A portion of Asia bordering on the Mediterranean Sea in Lebanon and Egypt has a subtropical climate with dry summers. This is similar to the climate of southern California.

H Vegetation

Asia incorporates many different biomes, which are landscapes having similar combinations of climate, vegetation, and animal life.

The northernmost areas of Asia, which experience a subpolar climate, have tundra vegetation consisting of grasses, mosses, and other small plants. Farther inland from the Arctic coast, the tundra gives way to the taiga, a region of vast coniferous forests composed of trees such as spruce, larch, and fir. Farther south, the taiga merges with forests of broadleaf trees, or mixed forests of broadleaf and needleleaf trees.

In Asia’s north central interior the forests merge into vast grasslands, much of which is short, steppe grasses. Large portions of Southwest Asia and the continent’s interior have semiarid or desert vegetation. Short grasses and other vegetation that require minimal precipitation surround many of the most barren areas in the deserts.

Although tropical rain forest predominates along the southern coastal strip and on the island of Sri Lanka, the eastern side of South Asia is characterized by semiarid tropical vegetation. The Deccan Plateau has mainly tropical dry forest vegetation.

Mainland and island Southeast Asia once supported extensive areas of tropical rain forest, which thrived in the warm, moist climate. Significant tracts of forest remain in most countries, but legal and illegal harvesting are too rapid to support sustainable regrowth.

Inland from the coastal strips of mainland Southeast Asia and stretching into southern China, tropical seasonal forests predominate. These merge into temperate forests farther north. Around the rim of the Bo Hai gulf the vegetation is chaparral, woody shrubs that grow to 4 m (13 ft) in height.

Asia has three main crop production systems. Across a broad band encompassing the Middle East, Central Asia, much of Russian Asia, and the inner regions of China, subsistence livestock production is the mainstay. Around coastal China, and most of South and Southeast Asia, the major form of agricultural activity is subsistence crop production. Scattered throughout the region—especially in Japan, Southeast Asia, the western parts of Russia, and some fertile patches of the Middle East—are pockets of commercial crop production.

Economically important activities throughout Central Asia and Russia include the production of wheat and other grains, cotton, and vegetables. Southeast Asia and the southern parts of China and India are major rice-growing areas, although grain production and consumption is more common in the northern regions of China and India. Rubber trees and oil palm plantations are significant in Malaysia and Indonesia. Tea plantations are significant in India, Sri Lanka, and Indonesia.

Soils

Asia’s soils are related mainly to climate and vegetation. In some areas the origins of soils, perhaps from volcanic action or from materials carried by streams, may be more important. Such volcanic or alluvial soils are especially fertile.

The tundra soils of the northernmost part of the continent are acidic and infertile. Many of these areas are underlain by permanently frozen subsoils that never thaw during the brief summers. Subsoils of this type, known as permafrost, cover a very large area in the northern part of Siberia.

South of the tundra, the soils of the taiga are also acidic and relatively infertile. Somewhat less acidic and more fertile soils are found in the mixed forests and the broadleaf forests farther south.

Prairie and black chernozem soils are south of the forests. Because these soils developed where there is limited precipitation, their desirable minerals have not been absorbed or washed away, a process known as leaching. These soils are among the most fertile in the world. The best farmland of Russian Asia occurs largely on black soils and on the more inferior soils of the mixed and broadleaf forests.

The unleached soils of the semiarid and arid areas of the continent are often fertile, except where they are too saturated with salts or alkaline minerals. The availability of water for irrigation largely determines their use. Continued irrigation, however, may increase the concentration of salts or alkaline minerals and make the growing of crops impossible.

The soils of the rainy tropics are generally infertile. High precipitation and high temperatures cause most of the valuable minerals to be leached from the soil. Less leaching occurs in the rainy-and-dry tropics and the humid subtropics.

Many of the red and yellow soils of the humid subtropical area of China have been improved by thousands of years of care, which has included the use of compost, or rotted plant refuse. In some semiarid regions of China, however, natural vegetation with deep roots—which kept the soils in place—was cleared for food crops that lacked sufficient root systems and caused the topsoil to become terribly eroded.

J Animal Life

The great variety of wildlife in Asia includes many species that are unique to the continent. Orangutans, the second tallest of the ape family after gorillas, are found on Borneo and Sumatra. Giant pandas make their home in southwestern China, and snow leopards roam the plateaus and mountains of Central Asia. A rare freshwater seal lives in Lake Baikal. China’s Yangtze River is home to a freshwater dolphin threatened by water pollution and increased numbers of motorized river vessels. The Komodo dragon, the world’s largest lizard and among the oldest surviving lizards, inhabits a small island in eastern Indonesia.

Asia’s wildlife generally can be classified by the particular vegetation zones they inhabit. Reindeer live in the southern tundra region of northern Siberia. Small fur-bearing animals, such as sables and foxes, are plentiful in the taiga forest of Russian Asia. The grasslands are home to antelope and many rodents, including marmots. In the mountainous areas of Central Asia live tiny musk deer. Tigers, one species of which inhabits northern Siberia, are found throughout the tropical rain forests of South and Southeast Asia. This area is also home to rhinoceroses, monkeys, and several subspecies of elephants.

In the hilly regions of Southwest Asia live gazelles. A rare species of antelope known as the oryx is found on the fringes of the desert areas of the Arabian Peninsula. Other animals commonly found in Southwest Asia include wolves and hyenas.

The remote mountainous region of Vietnam adjacent to the border with Laos has yielded some remarkable discoveries of animals previously unknown by scientists. A new species of cattle-like animal, the sao la (vu quang), was discovered in 1993, only the fourth discovery of this kind in the 20th century. Scientists have

discovered other creatures since 1992, including two deerlike animals, the giant muntjac and the quang khem.

Asia's domesticated animals include water buffalo, which are harnessed to plows and carts. Cattle are also used for hauling, especially in India, which has the world's largest cattle population. Most people in India do not eat beef because they belong to the Hindu religion, which considers cows sacred. Pigs are a major source of protein in China, although they are considered unclean in the Islamic countries, which include Pakistan, Afghanistan, and most countries of the Middle East. Sheep are kept across vast areas of semiarid Russian Asia, and reindeer are farmed in the north. People throughout the dry areas of the Middle East use camels.

The bird life of Asia is varied and includes several rare species. In the mountains of northern India lives the lammergeier, a huge bird similar to the vulture, that can obtain a wingspread of almost 3 m (10 ft). Peacocks and birds of paradise are found in the rain forests of Southeast Asia.

The continent of Asia is also home to many of the world's poisonous snakes. Cobras, which are especially common in India, and kraits and vipers, which are found throughout the continent, are the leading poisonous snakes. Numerous other reptiles, such as crocodiles, live in the rivers of Southeast Asia.

K Insects and Parasites

The tropical climates of large portions of Asia are particularly favorable to the development of insects and of parasites with long, complex life cycles. Tropical walkingsticks can exceed 30 cm (12 in) in length. Malarial organisms and the mosquitoes that carry them are favored by the absence of cold winters and, in rainy tropical areas, by the abundance of precipitation. The deadliest of the malarial organisms, *Plasmodium falciparum*, can survive year round in tropical areas. Filariae, small parasitic roundworms, are common in India and much of Southeast Asia; the parasite can cause elephantiasis, a disease that produces grotesque swellings. Great swarms of locusts are a periodic menace to farming in various areas of the Asian continent, particularly in Southwest Asia.

L Mineral Resources

Asia is rich in known mineral resources, and additional resources are suspected in some areas, such as Tibet, which are still unexplored geologically. Asia is particularly endowed with energy resources. Petroleum and natural gas are well distributed, but the greatest concentrations of mapped energy fuels are at the head of the Persian Gulf; in parts of Indonesia, especially Sumatra and Borneo; in northern and interior China; on the shores of the Caspian Sea; and in the West Siberian Plain. Large offshore reserves are believed to exist along the coasts of China, Indonesia, Malaysia, and western India.

Since Vietnam's economy began opening to foreign investment in the late 1980s, offshore oil and gas reserves have been tapped for commercial production. China, Taiwan, Vietnam, Brunei, Malaysia, and the Philippines each claim all or part of the Spratly Islands in the South China Sea, an area thought to contain rich energy and mineral reserves.

Coal exists in great abundance in Siberia, northeastern India, and especially in Shaanxi province in northern China, which contains 30 percent of China's proven reserves. Despite enormous reserves, China is a coal importer because it does not have the capacity to transport sufficient coal from the northern to the southern parts of the country.

With the exception of Turkey, which is a major chromium producer, metallic minerals are relatively scarce in Southwest Asia. China and Siberia are particularly well endowed with mineral resources. Malaysia is rich in tin and India in iron and manganese ores. Indonesia has bauxite, which is used in aluminum production. Gemstones such as diamonds are found in Siberia, and sapphires and rubies occur in South and Southeast Asia. Other important mineral resources include gold, silver, uranium, copper, lead, and zinc. The major manufacturing centers of Asia, such as Japan, Singapore, and Hong Kong, have few or no significant mineral resources.

Environmental Issues

Asian countries share some difficult environmental problems. Among the most significant are land and soil degradation, lessening the land's capacity to sustain life. Desertification is an extreme example of land degradation. Scientists estimate that 10 percent of all land has been transformed from productive use into desert, and another quarter is at risk. The desert regions of the Middle East have been spreading for hundreds of years. Prehistoric forests in the region were destroyed by human habitation. Overgrazing and destruction of surrounding vegetation have continued the desertification of the region.

Deforestation is another serious problem. Closed-canopy tropical rain forests are distributed from northeast India through Southeast Asia and north as far as southern China. From 1960 to 1990 Asia lost nearly one-third of its tropical forests. Both India and the Philippines have less than one-quarter of their original forest cover.

In recent years the rate of forest loss in places such as Cambodia, Laos, and Indonesia has accelerated. The increasing population of people who practice shifting cultivation—also known as slash-and-burn agriculture—has done some damage, but rapid commercial harvesting of the rain forest is now causing the greatest concern. Despite government measures to ban or reduce logging in areas of Southeast Asia, illegal logging continues throughout the region. In some areas it is often with the support of military or guerrilla forces who use the proceeds to support their activities.

The rapid industrialization of countries in East and Southeast Asia has created serious air pollution. Two of the main pollutants produced by the combustion of fossil fuels, which include petroleum and natural gas, are suspended particulate matter (SPM) and sulfur dioxide. These are harmful to the human respiratory tract and cause illnesses such as bronchitis.

Cities in China, especially Beijing, Shenyang, Shanghai, and Xian, have among the highest levels of SPM pollution in the world due to their heavy use of coal for residential and industrial energy. Indian cities, including Delhi, Kolkata, and Mumbai (formerly Bombay), also have high levels of SPM and sulfur dioxide

from fossil fuel use. Tokyo and other Japanese manufacturing centers have a lesser problem with air pollution because government controls are greater.

Some scientists predict global warming will cause the polar ice caps to melt, raising mean sea levels 230 mm (9 in) by 2050 and 00.50 m (20 in) by 2100. Rising sea levels would have catastrophic consequences for coastal Asian countries. The worst hit would be Bangladesh, where more than 110 million people live in the low-lying Ganges Delta. Already vulnerable to cyclones and tidal waves that inundate the region, 13,000 sq km (5,000 sq mi) of Bangladesh's land area would be lost with a 1 m (3 ft) rise in sea levels. The high population densities of these low-lying areas make resettlement to higher ground impractical.

Environmental consciousness in Asia is growing. Most Asian countries are increasingly implementing more environmental regulations. Economic development, however, remains a greater priority in most developing countries.

III THE PEOPLE OF ASIA

The people of Asia are more diverse than those of any other continent. They are highly concentrated in a small proportion of the total area, chiefly in the southeast quarter of Asia. In the northern and interior areas, and in most parts of Southwest Asia, the average population densities are low. However, people in these regions live in concentrated areas on river oases, such as the Toshkent oasis, where the actual densities are very high. In Siberia, settlements are located primarily along the Trans-Siberian Railroad and its branches. In East Asia, Southeast Asia, and most of South Asia, people are crowded onto relatively small lowland areas near rivers, where population densities often exceed 580 persons per sq km (1,500 per sq mi). In China, for example, 90 percent of the population is concentrated in the eastern third of the country. Even in highly industrialized Japan, most of the populace is concentrated in small lowlands where the largest cities are located.

A Ethnology and Languages

Chinese, a member of the Sino-Tibetan languages family, is the most commonly spoken language in Asia. More than 1 billion residents of China, plus many of the ethnic Chinese who live throughout Asia, speak Mandarin Chinese or one of the Chinese variants.

Linguists consider Japanese, spoken by 125 million people, and Korean, which has 69 million speakers, to be isolated languages. Some linguists, however, believe they may be related to each other or to languages in the Altaic languages family.

Southeast Asia contains no dominant language. Mainlanders speak Thai, Malay, Khmer, Burmese, Lao, and Vietnamese. In the remoter highlands live tribes who speak other languages. The Hmong (Meo) of the highland regions in northern Laos are an example. Most residents of Malaysia and Indonesia speak a form of Malay, known as Bahasa Malaysia in Malaysia and Bahasa Indonesia in Indonesia. The majority of Indonesians also speak a local language. Residents of Java, for example, speak Sundanese in the western

part of the island and Javanese in the center and east. With total speakers numbering more than 22 million, Malay belongs to the Austronesian languages family.

In South Asia, millions of people in Pakistan, Jammu and Kashmīr, and northern India speak Urdu or Hindi, which are Indo-Aryan languages and part of the Indo-Iranian languages family. In southern India and in northern Sri Lanka, people speak Dravidian languages such as Tamil and Telugu.

In Southwest Asia, languages of the Afro-Asiatic languages family predominate. People throughout this large region speak Arabic, although in Israel, Hebrew is more widely spoken. Most Iranians speak Persian, an Indo-European language.

Speakers of Turkic languages, a division of the Altaic languages family, are numerous in Central Asia and in western China. Russian, a Slavic language, is the principal language of Siberia and many parts of Russian Asia.

European languages made some inroads from the 16th to the early 20th century when colonial powers controlled parts of Asia. At the present time, however, it is mainly people educated in colonial schools prior to independence who speak Dutch in Indonesia or French in Vietnam, Laos, and Cambodia. English is the exception; increasing numbers of people in Asia speak it. English is an official government language in India, as well as the official language of groups such as the Association of Southeast Asian Nations (ASEAN), which unites seven main Southeast Asian countries.

B Demography

The continent’s total population (2005 estimate) is 3.91 billion. East Asia contains about 40 percent of Asia’s population, and South and Central Asia together contain another 40 percent. They are followed by Southeast Asia, with 15 percent of the continent’s population, and West Asia, with 5 percent. China and India together contain some 2.3 billion people, or more than one-third of the world’s population. Asia’s overall population density of 126 persons per sq km (326 per sq mi) of land area is the highest of all continents.

The annual rate of population increase for the continent as a whole is 1.1 percent. The highest growth rates—in excess of 2.5 percent per year—are found in Yemen, Syria, Saudi Arabia, Laos, and Jordan.

Population growth in South Asia is particularly concerning. Although India’s growth rate declined during the 1990s, its population is still projected to grow to 1.36 billion by the year 2025. Pakistan and Bangladesh are also expected to grow considerably. Even with significant improvements to family planning, the combined population of the three countries is projected to reach the alarming level of 1.80 billion by 2025—nearly one-quarter of the world’s total projected population.

In contrast, a stringent family planning program has reduced China’s growth rate to 0.6 percent. Indonesia, the third largest country in Asia, has reduced its population growth rate to 1.5 percent per year, also through effective family planning. Japan, Singapore, and Taiwan have growth rates well below 2 percent.

Countries that have experienced high growth rates over the last decade have youthful populations. More than 40 percent of the populations of Afghanistan, Bangladesh, Laos, Mongolia, Nepal, and Pakistan are under 16 years of age. The population growth rates will inevitably increase as these children become adults and begin having their own children. On the other hand, less than 25 percent of the populations of Japan, Hong Kong, and Singapore are under 16. The cost of supporting aging populations is a major concern of both Japan and Singapore.

In most Asian countries the majority of the population live in small rural settlements where they work in agriculture or local services and industries linked to agriculture. More than three—quarters of the people in Nepal, Laos, Bangladesh, Sri Lanka, and Thailand are rural dwellers. In Bhutan, more than 90 percent of the population are rural residents.

Urbanization has proceeded rapidly in recent decades. The urban population accounts for a majority in Japan, Taiwan, South Korea, Singapore, Hong Kong, Jordan, Syria, Israel, Iran, Iraq, Saudi Arabia, Kuwait, and the United Arab Emirates. The Philippines and Malaysia also have relatively large urban populations. In total, Asia accounts for more than half the world's urban population. That proportion is expected to increase because Asian cities are generally growing at about twice the rate of overall populations.

South and Southeast Asia are dotted with large cities that developed as a result of European economic and political domination. Among these are Mumbai, Kolkata, Colombo, George Town (Penang), Goa, Hanoi, Ho Chi Minh City (formerly Saigon), Jakarta, Karāchi, Kuala Lumpur, Chennai (formerly Madras), Manila, Phnom Penh, Singapore, Surabaya, and Yangon (formerly known as Rangoon). Only Bangkok is not a former colonial center, but it resembles the others in most other respects. Even in China, many of the larger coastal cities were strongly influenced by European presence. In Japan, more than 77 percent of the population is urban. In most other countries the urban population ranges between 20 percent and 40 percent. In Southwest and Central Asia, ancient traditions of city building were reinforced by Islamic culture, giving rise to cities such as Baghdād, Damascus, İstanbul, Jerusalem, and Tehrān (Teheran). Modern urbanization is reflected in cities such as Ankara, Beirut, Tel Aviv-Yafo (Tel Aviv-Jaffa), and Toshkent. But urban populations are a small proportion of the whole in some countries of Southwest and Central Asia. Concerns about the unequal distribution of population have encouraged governments to develop resettlement policies. Indonesia's transmigration program, which began in the 1960s, has focused on encouraging people to shift from the crowded islands of Java and Bali to more sparsely populated locations in Sumatra, Borneo, Sulawesi, and Papua. In the mid-1990s, however, the program was being scaled back due to high costs and the exhaustion of quality land for resettlement. Malaysia has run a generally successful resettlement scheme. In Vietnam, mismanagement and a lack of adequate funding have caused its resettlement plan to be far less successful.

Fears about the emergence of very large cities have prompted governments to try to harness their rates of growth. Attempts to halt migration to large cities have been generally unsuccessful in market economies. Jakarta was proclaimed a "closed city" in the 1970s, but it had little impact on migrants. In the socialist countries of the region, such as China and Vietnam, controls on migration to cities have been more successful. As these countries have shifted to a market economy, however, previous restrictions on

population movement have been eroded and cities have become magnets for displaced rural people as in the rest of Asia.

Another strategy has been to divert migrants toward secondary cities and smaller towns. The South Korean government has successfully fostered the growth of industrial cities in the south, such as Gwangju and Daejeon, in order to ease pressure on Seoul. Thailand—concerned by the dominance of Bangkok, where nearly two-thirds of all Thai urban dwellers live—has fostered growth in northern cities such as Chiang Mai. But there has been little impact on Bangkok's population. Likewise, Manila remains the dominant urban center in the Philippines despite attempts to attract industry and people to alternative locations, such as Cebu.

C Religion

Islam is the dominant religion in most countries of Southwest Asia and in Bangladesh, Pakistan, Malaysia, and Indonesia. Large minorities of Muslims are also found elsewhere in Asia. Non-Muslims in Southwest Asia include Jews in Israel and Christians in Lebanon.

Hinduism is the chief religion of India and on the island of Java in Indonesia. Buddhism, which originated in northeastern India, has only a few adherents there but is now one of the principal religions of Sri Lanka, Myanmar, Thailand, Cambodia, South Korea, Vietnam, and Japan.

Buddhism was also strong in North Korea before 1948 and in Mongolia before 1929 when their Communist governments began partially suppressing religion. Although in 1992 Mongolia shifted to a democratic government that allows greater religious freedom, most Mongolians are now either nonreligious or atheists. Confucianism, which is more a social and moral code than a religion, developed in China but has been largely suppressed by the Communist government. Since the beginning of economic reforms in the 1980s, China has had increased contact with outsiders and religious and Confucian practices have also increased. Buddhist practices continued in Vietnam despite government efforts to suppress them during the 1970s and 1980s; most restrictions have since been lifted.

Japan has a native religion called Shinto. Shinto, which has been mixed with many practices of Buddhism, centers on the worship of ancestors and natural spirits. The religion formerly accepted the divinity of the Japanese emperor, but this aspect of Shinto was abandoned after the Japanese defeat in World War II (1939-1945).

Christianity, as represented by the Russian Orthodox Church, was the principal religion of Russia prior to the 1922 founding of the Union of Soviet Socialist Republics (USSR), which dissolved in 1991. For most of its existence, the USSR's Communist government discouraged religious practices. In 1990, however, the government lifted restrictions on religious worship and the Russian Orthodox Church reemerged as the major Christian denomination.

Roman Catholic missionaries carried Christianity to the Philippines. Roman Catholic and Protestant missionaries also converted many people in Korea, Japan, India, and among the hill peoples of Myanmar.

Many groups living in remote areas of the Asian continent, such as the Karen and Shan in Myanmar, practice religions unique to their cultures. These religions can be complex, often involving practices of animism, the belief that every object has a spirit.

Religious conflicts simmer throughout Asia and add to regional insecurity. In the Middle East, peace agreements in the 1990s helped lessen the dispute between Israeli Jews and Palestinian Arabs over the Gaza Strip and the West Bank. In the mid-1990s Afghanistan was enmeshed in a civil war between fundamentalist Muslims backed by Pakistan, Uzbekistan, and Arab states, and more moderate Muslims supported by Iran, Russia, India, and Tajikistan. India and Pakistan wrestle over the territory of Jammu and Kashmīr, commonly known as Kashmīr. India claims Kashmīr on historical grounds, whereas Pakistan believes Kashmīr's Muslim population should be in an Islamic state. In Southeast Asia, the Muslim Moro people of Mindanao Island in the Philippines have long fought with the government, arguing for greater autonomy and closer links with fellow Muslims of Malaysia's Sabah state. Although the largest rebel group and the government negotiated a peace agreement that created a Muslim autonomous region in 1996, other rebels have continued fighting. Even with the largest Muslim population in the world, Indonesia finds the strongly Islamic residents of Aceh at the northern end of Sumatra a source of political tensions.

D Education

Millions of people throughout Asia are illiterate, which is defined as the inability of people over age 15 to write a short, simple statement about their everyday life. Although fewer than 15 percent of the people in Japan, Hong Kong, Singapore, and South Korea are illiterate, the illiteracy rate in Nepal, Bhutan, Bangladesh, Pakistan, and Yemen is greater than 50 percent. In many areas more women than men are illiterate and sometimes the gap is very wide.

The education systems of most countries have emphasized elementary or primary school instruction. In Southeast and Southwest Asia, elementary instruction is often conducted by religious groups, such as Buddhists and Muslims. Japan, Russia, and Israel have led the development of adequate educational systems. In Japan, nine years of schooling are free and compulsory, and the country has many universities. China's educational system concentrates on the elimination of illiteracy. India has benefited from schools and colleges that were established during the period of British rule; like China, it has stressed mass literacy.

School participation rates vary throughout Asia. In the majority of countries almost all students undertake primary school education, reflecting the priority this has generally been given by governments. There is universal primary education in China, Sri Lanka, Indonesia, and Myanmar. In a handful of South and Southwest Asian countries, such as Bangladesh, Pakistan, and Yemen, only 50 to 75 percent of the school-aged children are enrolled. Far fewer girls than boys attend primary school in these countries. Secondary education has lower levels of enrollment throughout Asia, and even fewer students attend institutions of higher education.

E Health

Asia has some of the world's major health problems. These are compounded by widespread ignorance of basic sanitation concepts and, in some areas, by high population densities. In Southeast, South, and Southwest Asia, subtropical and tropical climates favor the development and survival of parasites in soils, water, and hosts (insects, animals, and humans that carry the parasites). Streams are often used for sewage disposal in the southern parts of Asia. Where these same streams are also used for drinking and bathing water, they are a source of chronic infections. Sanitary conditions are improving, especially in cities, as international aid programs give high priority to health problems caused by the environment. Construction of better drinking water facilities—together with improved systems of sewage disposal, rubbish collection, and wastewater drainage—is helping create healthier settlements.

Untreated human manure is used as a fertilizer on some farms in East and Southeast Asia, contributing to the spread of disease. In recent years, sanitary practices in China have been greatly improved by first treating human manure before adding it to soils.

The major diseases of Asia include cholera, typhoid fever, scarlet fever, poliomyelitis, amebic and bacillary dysentery, and malaria. Cholera, caused by a bacterium usually transmitted through polluted water, has existed in Asia for centuries.

Elephantiasis, which is common in the tropical areas of India and China, is another disease that occurs in Asia. The parasitic worms that cause this disease are usually carried by mosquitoes, which are also the hosts of the organisms that cause malaria. Although not always successful, enormous efforts have been made to eliminate mosquitoes in many areas by the use of insecticides.

The spread of acquired immunodeficiency syndrome(AIDS) is a growing threat in Asia, particularly in South and Southeast Asia. Many countries do not keep accurate statistics of AIDS cases, either because they lack the health services to track the disease, or because they deny that AIDS is a significant problem. However, the World Health Organization (WHO) of the United Nations (UN) estimates that in the late 1990s 5.8 million people in South and Southeast Asia had AIDS or were infected with the human immunodeficiency virus (HIV) that causes AIDS.

Millions of people in Asia are infected with hookworms, which typically cause malnutrition and a lack of energy. Malnutrition itself causes diseases, including kwashiorkor, a protein deficiency that stunts the growth of children and occasionally causes their death. The United Nations Food and Agriculture Organization (FAO) has attempted to combat the problem of protein deficiency in many ways, including encouraging ocean fishing and fish farming, the use of powdered milk, and the production of milk-like products from protein-rich soybeans. The WHO has attacked the problems of health more directly: Mass inoculations and international quarantines have helped control many diseases, and smallpox has been wiped out in Asia.

The quality of health care systems varies in Asia. The most advanced systems of health delivery are found in Japan, Israel, and Russia. Singapore and Hong Kong also have good systems and a ratio, respectively, of one doctor for every 1,137 and 758 people. In Cambodia the impact of war and genocide has left the country

with just one doctor for every 3,600 people. Countries such as Nepal, Bangladesh, Myanmar, Sri Lanka, Indonesia, and the Philippines have more than 5,000 people per doctor.

Many Asians seek traditional healers for treatment of a wide range of illnesses. Chinese traditional medicine is probably the best-known alternative to Western medicine. Techniques such as acupuncture, acupressure, and the use of herbal medicines are widely used by Chinese people throughout Asia, and many of these techniques are practiced in Western countries.

IV PATTERNS OF ECONOMIC DEVELOPMENT

Much of Asia is economically underdeveloped. Even though the majority of the continent's population is employed in agriculture, most agriculture is characterized by low yields and poor labor productivity. Relatively few people are employed in manufacturing. The services sector is dominated by low-income positions, such as street vendors or pedicab operators. Urban centers and their industries are often poorly integrated into the rural economy. Transportation systems, both within countries and between them, are often underdeveloped.

Russia and most states of Central Asia have struggled economically since the early 1990s when the USSR and its centrally planned economy dissolved. In contrast, the economies of China and Vietnam have grown since the late 1980s when their governments began making a transformation from a centrally planned to a mixed-market system. Afghanistan, Bangladesh, and the smaller states of South Asia, as well as Laos and Cambodia in Southeast Asia, have achieved only modest economic gains. Their economies face a variety of hurdles, including a poor resource base, widespread poverty, and, often, inadequate government planning.

The value of some East and Southeast Asian currencies fell dramatically in the late 1990s, impeding the ability of certain governments, banks, and businesses to repay their foreign debt. Some countries, notably Indonesia, Thailand, and South Korea, obtained large loans from the International Monetary Fund (IMF) to meet their debt obligations. Nevertheless, the economic crisis has not reversed the years of growth; Asia's overall economic performance has been very good since the 1980s, and most analysts expect continued long-term growth. Japan is a global economic superpower with one of the world's highest average incomes per person. Economists often refer to Hong Kong, Singapore, South Korea, and Taiwan as Asia's "Four Tigers," because they rapidly achieved high economic growth and a standard of living among the highest in the world. Thailand and Malaysia were close behind. Because of their impressive annual growth rates during the early and mid-1990s, ranging from 5 to 10 percent, these countries are sometimes collectively referred to as the "newly industrialized economies" (NIEs). This term is applied loosely, however, and sometimes includes Indonesia, China, and Vietnam, which also achieved rapid growth in early and mid-1990s. Government policies that emphasize foreign investment and production of labor-intensive manufactured goods for export are central to Asia's economic success. In the early 1990s the Philippines and India introduced economic reforms modeled on those of their successful Asian neighbors. The Southwest Asian states with large petroleum resources have also done well, although the wealth generated is often concentrated in very few hands.

A Agriculture

Less than one-third of Asia's land is in agricultural use. The basic unit for organizing production in the rural areas is either the farm or the village, depending on the way in which rural society is structured. In South, Southeast, and East Asia, agriculture is characterized by small farms in alluvial lowlands, too many people on too little land, production largely for subsistence, and a heavy dependence on cereals and other food staples. Farming with simple handheld tools or plows pulled by draft animals is very common. Many farmers are tenants, not owning the land they work. Communal farming was once common in socialist countries. Most rural communes have disintegrated in China and Vietnam, however, and the rights to use the land have reverted to farm families.

Rice, usually grown under wet conditions, is the staple food crop of South, Southeast, and East Asia. In South and Southeast Asia, controlled irrigation facilities are poorly developed, yields are often low, and double-cropping (planting and harvesting two crops in one calendar year) is seldom practiced. Although high-yield varieties of wet rice have been introduced since the 1960s, this has not increased production as hoped.

In India, irrigation schemes have helped stabilize annual yields and increase overall production, but the average rice yield per hectare in the mid-1990s was only about half that of Japan. Nevertheless, Asian countries produce about 90 percent of the world's rice. China and India alone account for nearly 60 percent of the world total.

In addition to subsistence and small-farm agriculture, South and Southeast Asia also have large-scale estate agriculture. These farms produce crops for export, such as rubber, palm oil, coconut products, tea, pineapples, and manila hemp. Estate production originated in the late 18th and early 19th centuries when European colonial powers controlled much of the region. Many estates remain under foreign ownership and control.

In East Asia, agriculture is based on flooded-field cultivation to a latitude of about 35° north in China and about 40° north elsewhere. In contrast to Southeast Asia, yields are high, double-cropping is common, irrigation is highly controlled, and fertilizer is used extensively. These practices make Japan's wet-rice agriculture very productive, despite the small size of Japanese farms.

North of the Huai River in China's Anhui province, rice gives way to wheat and other dry grains, especially sorghum and corn. Fish farming and swine and poultry raising are practiced throughout East Asia. Dairy and beef cattle, though, are commonly raised only in Japan and Korea.

Farmers grow some grains in Asia's dry interior regions, and the raising of cattle, sheep, and horses is important. Semiarid regions of Central and Southwest Asia have agriculture centered around oases. For the most part, however, productivity levels are low.

B Forestry and Fishing

Although lumbering is an important industry in Southeast Asia, the pattern of commercial production is being altered, due in part to increased concern regarding deforestation. For example, in 1985 Indonesia—a significant source of tropical hardwoods—banned the export of unprocessed logs in an attempt to slow production and increase domestic timber processing industries. The bans were replaced by a high export tax in 1992. Thailand, once a major source of teak timbers, instituted a ban on commercial logging in 1989. Many companies then shifted their attention to the forests of neighboring Cambodia, Laos, and Myanmar, where some firms developed alliances with dissident groups to illegally exploit local timbers.

Slash-and-burn agriculture is still practiced in parts of Southeast Asia, as well as in the more remote parts of humid South Asia and southern China. In the heavily populated areas of India and China, however, the original forest cover has long since been removed.

Lumbering is a major industry in Japan, where large areas of planted conifers have replaced much of the original temperate forests in the south and deciduous hardwoods in the north. Siberian timber reserves are enormous but relatively untapped; the region's inaccessibility and harsh climate prohibit logging, and the quality of the trees is generally insufficient for world markets.

Marine fisheries are extremely important in Asia. Japan is the world's leading fishing country, and China is not far behind. The fishing industry is also important in Russia, Thailand, Indonesia, Korea, and the Philippines. *Pisciculture* (raising fish in ponds) is also an important activity, especially in China. Although fishing in the less developed countries is largely for domestic consumption, emphasis has increasingly been placed on exports of dried, frozen, and canned fish.

C Mining

Mining is also an important activity in most Asian countries, and it is a major export industry in several. Manganese is mined in India; tin in Malaysia, Thailand, and Indonesia (which combined produce most of the world's supply of this metal); and chromium ore in the Philippines. The most important mineral export, however, is petroleum, with Asian outputs accounting for about half the world's total. Southwest Asia contains the world's largest reserves of oil outside Russia, and most of the production is exported. Indonesia and, more recently, China and Malaysia are also exporters. In South Asia, modest petroleum and natural gas deposits are exploited in Bangladesh, Pakistan, and off the western coast of India. Coal mining is important in China—which contributes about 30 percent to the world's total coal output—and in central and eastern Siberia, northeastern India, Iran, and Turkey. Other significant mineral products include iron, manganese, and tungsten in China; sulfur, zinc, and molybdenum in Japan; and gold in Uzbekistan and Siberia.

D Manufacturing

Asia's manufacturing capacity is unevenly spread but growing quickly. Japan has a highly diversified industrial sector, constituting about one-quarter of the labor force. China, Russia, and India also have large manufacturing centers. In China, manufacturing employs some 15 percent of the workforce. It is concentrated in Liaoning province in the northeastern part of the country; in Shanghai's port cities of Tianjin, Qingdao, and Wuhan; and in selected interior regions where raw materials are available. Steel

production in particular is important. Manufacturing in Siberia is clustered near the Ural Mountains; near major urban areas along the Trans-Siberian Railroad, such as Novosibirsk; and near isolated centers in far eastern Russia. India's manufacturing sector employs some 16 percent of the labor force. Manufacturing is heavily concentrated in and near Kolkata, in the Mumbai area, in the central peninsula, and in several other areas where resources are available.

Since the 1960s manufacturing has grown rapidly in parts of East and Southeast Asia. South Korea's annual manufacturing output was less than one-quarter that of India's in the 1970s, but by the early 1990s South Korea had doubled the output of India. Thailand and Indonesia, particularly near Bangkok and Jakarta, have also developed significant manufacturing industries, as have Singapore, Hong Kong, Malaysia, and the Philippines. The trend in Southeast Asian countries is to take advantage of the relatively inexpensive labor by establishing manufacturing industries geared to export. Emphasis has been on clothing and shoes, and on electronic equipment such as televisions, video recorders, and compact disc players. In other countries, industries are more often concerned with processing local agricultural, mineral, and forest raw materials; with light manufacturing for domestic markets; and with the assembly of machinery and vehicles imported from other countries.

E Energy

Petroleum-rich Southwest Asia has few other sources for energy. India has immense hydroelectric potential, and about half the electricity generated there comes from waterpower. Nonetheless, much of the energy consumed in rural India continues to be derived from the burning of dung and brushwood. Both China and Japan have shown that small-scale hydroelectric plants can be effective providers of energy to small towns and rural areas. China has thousands of small hydroelectric plants, concentrated mainly in the south, in addition to about 20 large plants. Coal, however, remains China's chief energy source. In Japan, petroleum is the largest energy source and almost all of it is imported. Siberia has great hydroelectric potential that has only recently begun to be tapped. In Southeast Asia, oil production is substantial in Indonesia, Malaysia, and Brunei, but the chief domestic sources of energy are waterpower and fuelwood.

Although overall energy production has increased greatly since the 1960s, energy consumption per capita remains extremely low in most Asian countries. The more economically developed countries or areas have moderate to high consumption levels. These include Japan, Taiwan, South Korea, Singapore, Hong Kong, Malaysia, Kuwait, Saudi Arabia, Russian Asia, and the states of Central Asia.

F Transportation

Transportation systems are poorly developed throughout most of Asia. No comprehensive continental land transportation system exists. Few railroads cross international boundaries, except for the route between China and Russia, and one connecting Singapore, Malaysia, and Thailand. The international road network is also poorly developed, and in Central and Southwest Asia routes are often closed due to local skirmishes. Navigable rivers provide limited international transport. The Amur River, which links Russia and China, is one exception. The Mekong River starts in southwest China and meanders through Myanmar, Laos,

Thailand, and Cambodia before emptying into the South China Sea off Vietnam. Because of local political instability and problems with navigability, however, the river has not been used to its full capacity. Recent improved cooperation between nations along the Mekong and funding support from the Asian Development Bank have led to plans to remove obstacles to river transport.

Most of Asia's international transportation is by sea or air. Both regularly scheduled and general-service ships connect all major Asian ports with each other. Port facilities are varied. Japan and China contain large ports. Shanghai is the largest Chinese port, but Qinhuangdao, Dalian, and Qingdao are also important. Singapore is the major port of Southeast Asia, well ahead of the ports for Bangkok, Jakarta (at Tanjung Priok), Kuala Lumpur (at Kelang), and Manila. Mumbai and Kolkata are important ports of the Indian subcontinent, and there are large oil exporting ports in the Persian Gulf, such as Iran's Kharg Island. Singapore and Hong Kong are particularly important as entrepôts, serving as major redistribution points. Air services link all major cities. A high-volume air corridor links Tokyo, Seoul, Taipei, Hong Kong, Bangkok, and Singapore. These airports are in the most developed countries along the Pacific coast of Asia and therefore generate more demand for business and tourist travel than interior Asia. Singapore and Bangkok have large international air terminals and sophisticated facilities in an attempt to maximize their share of Asian air services.

Domestic transportation in most countries is limited. Rural settlements are poorly connected with one another or with larger towns. Highways are few and rural roads are often unpaved. Japan, Taiwan, South Korea, Malaysia, and much of the Philippines are the exceptions. Malaysia has recently completed construction of a freeway that runs from the far north of the country to Johor Baharu, which is adjacent to Singapore. Highways in many other countries are directed toward the capital city's greater metropolitan region and its connection to the airport. An example is Jakarta, where in-city tollways and overpasses ease congestion in the city and outlying freeways link Jakarta to the satellite towns of Bekasi, Tangerang, and Bogor.

Navigable rivers are often the main highways of commerce, but not all countries have them. In China, the Yangtze River has long been the major east-west transportation artery. It is connected to Beijing and the Huabei Pingyuan (North China Plain) by the Grand Canal, which intersects the Yangtze near Shanghai.

The continent's chief transportation mode is the railroad. Japan has a dense railroad network, the centerpiece of which is the Shinkansen, a high-speed rail which connects Tokyo, Nagoya, Kyōto, Ōsaka, Okayama, and Hiroshima. Traveling at speeds of up to 249 km/h (155 mph), the bullet train is one of the world's fastest. China has the world's sixth longest railroad system and by the mid-1970s had linked all of its major manufacturing centers and provincial capitals into one vast network. Despite its enormous size, the Chinese rail network is unable to meet demand for either freight or passenger traffic. Korea and Taiwan are well served by rail. The countries of Southeast Asia, except for Thailand and Malaysia, and those of Southwest Asia have railroad systems that are small and truncated. In South Asia an integrated railroad system, originally built by the British, was divided by the political separation of India, Pakistan, and Bangladesh. The Trans-Caspian and Turk-Sib railroads are the most important rail lines in Central Asia. The Trans-Siberian Railroad and its branches, such as the Baikal-Amur Mainline (BAM) line, form the main transportation system in Siberia.

G Trade

Some Asian countries carry on extensive international trade. Asia has 17 of the world's top 50 exporters, compared to 4 each from Africa and South America. In order of importance, the most notable exporting centers are Japan, Hong Kong, China, Taiwan, South Korea, Saudi Arabia, Singapore, Malaysia, Indonesia, Thailand, the United Arab Emirates, India, Iran, Turkey, Israel, the Philippines, and Oman.

Much of this trade is between Asian countries, particularly the export of raw material to Japan and Japan's export of manufactured goods to Asian markets. Examples include the flow of oil to Japan from the Persian Gulf, and to a lesser extent from Indonesia and Brunei. Japan's import and export trade with Southeast Asian countries is particularly strong.

The NIEs have growing exports of manufactured goods. Saudi Arabia and the United Arab Emirates are oil exporters. Hong Kong and Singapore re-export goods from China and Malaysia, respectively. Indonesia and Malaysia are major traders in raw materials.

Several organizations support the economic development and growth of trade among Asian countries. The Asian Development Bank (ADB) is based in Manila. Like the World Bank, it loans money to member countries, sometimes at subsidized rates, for developmental purposes. Its Asian membership includes most of the countries of East, Southeast, and South Asia, as well as Afghanistan and Turkey. Based in Bangkok, the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) assists with the coordination of the UN's development agencies, such as the FAO and the WHO. Asian membership in ESCAP includes the same group as the Asian Development Bank, excluding Turkey, plus Russia and several Central Asian states.

Two more localized organizations of importance are the Association of Southeast Asian Nations (ASEAN) and the Commonwealth of Independent States (CIS). ASEAN was formed in 1967 to support a range of links between member nations. Its core membership of Indonesia, Malaysia, Singapore, Thailand, the Philippines, and Brunei was supplemented by the addition of Vietnam in 1995, Myanmar and Laos in 1997, and Cambodia in 1998. Member states have created an ASEAN Free Trade Area (AFTA), which commits them to significantly reducing trade barriers, such as quotas and tariffs, by the early 21st century.

The CIS was formed in December 1991 as a loose successor to the Soviet Union. Russia, Belarus, and Ukraine were the founding members; they were soon joined by Armenia, Azerbaijan, Georgia, Moldova, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. CIS members—which share characteristics from having been members of the USSR—initially formed to coordinate economic and foreign policy, although the organization's roll has diminished since its founding in 1991.

In 1989 an organization called the Asian-Pacific Economic Cooperation (APEC) was formed to facilitate trade between North America, Oceania, and Asia. Asian members include Brunei, China, Hong Kong, Indonesia, Japan, Malaysia, Papua New Guinea, the Philippines, Singapore, South Korea, Taiwan, Thailand, and Vietnam. Since its modest launch APEC has grown in importance, with regular meetings of heads of

government. While promoting “open regionalism,” which means it will not support trade barriers aimed at nonmember countries, it also seeks to reduce barriers to trade among members.

V HISTORY

While Africa is thought to be the birthplace of the human species, Asia is considered the cradle of civilization. There never has been a single Asian civilization, however, because the continent’s vast size caused several different civilizations to arise, each independent of the others. This article examines the interactions and successions of these civilizations. Additional information on the countries or regions mentioned is in the history sections of articles on the individual Asian countries.

A Prehistoric Settlement

Fossil remains show that ancestors of *Homo sapiens,* or modern humans, lived in Asia thousands of years ago. The fossils of Peking Man were found near Beijing, China, and Java Man was discovered at Sangiaran, Indonesia, on Java Island. These fossils, estimated to be about 500,000 years old, are of *Homo erectus,* an ancestor of *Homo sapiens.* Other fossil evidence from China points to *Homo erectus* arriving in Asia about 1 million years ago.

Homo erectus likely disappeared from Java about 150,000 years ago, and *Homo sapiens* did not resettle the island until the last ice age about 10,000 years ago, when the polar ice caps receded to their present extent. The record of human habitation in China is considerably longer. There, fossils of *Homo sapiens* thought to be 150,000 to 200,000 years old have been found. By 20,000 years ago, modern humans probably lived throughout China.

B Ancient Civilizations

The earliest known civilizations arose in the great river valleys of southwest Asia, northwest India, and northern China. Despite differences, these cultures had some similar characteristics. All were agricultural societies that depended on advanced social and political structures to maintain irrigation and flood control systems. Raids by nomadic herders forced farmers to live in walled cities for defense and to entrust their protection to aristocratic leaders. The invention of the plow about 3000 BC increased farm productivity and reduced the need for farm labor, freeing workers to become artisans. An increased agricultural yield and the work of the artisans provided trade goods that could be exchanged with people from other cultures.

B1 Mesopotamia

Mesopotamia, an ancient region located between the Tigris and Euphrates rivers in what is now Iraq and eastern Syria, is often called the cradle of civilization. By 3000 BC the ancient country of Sumer was the center of a sophisticated culture. The Sumerians irrigated their fields from precisely measured canals, used bronze and polished stone tools, made textiles and wheel-turned pottery, built temples and palaces, and traveled in wheeled carts and sailing ships. Their accurate calendars predicted seasons and their writing,

known as cuneiform, was an international script. They worshiped a sun god and they lived by written laws. The Akkadian dynasty gained control of the entire country in the 24th century BC, and the land became known as Sumer and Akkad. Although the region fell to northern invaders about 2200 BC, Mesopotamia remained the center of western Asian civilization until the 6th century BC.

Most important of the later countries was Babylonia, which was ruled as Chaldea from the 7th to the 6th century BC. Nebuchadnezzer II, the Chaldean dynasty's most powerful ruler, conquered Jerusalem and deported the Jews in 586 BC, beginning an important period in Jewish history known as the Babylonian Captivity. From the 9th to the 7th century BC, Babylonia's northern neighbor, Assyria, amassed significant territory under the rule of Ashirnasirpur II and his successors. Assyria's attempt to conquer Babylonia in the 7th century BC failed, and the region was absorbed into Babylonia. During the 6th century BC the entire region fell to Iranian invaders, becoming part of Persia.

B2 Indian Civilizations

By 2300 BC an advanced civilization located in the Indus Valley of northwest India and southern Pakistan traded its cotton and textiles with Mesopotamia. As in Mesopotamia, irrigation produced crop surpluses and required an advanced social and political system. The two major cities, Mohenjo-Daro and Harappā, had straight streets lined with large, two-story homes equipped with plumbing. The Indus peoples used wheeled carts, designed creative jewelry and toys, and had written languages.

From 1500 to 1200 BC waves of people from Central Asia, transported on horse-drawn chariots, swept into the Indus Valley. They destroyed the cities they encountered, settling finally in the Ganges Valley of northeast India. They spoke a language of the Old Indo-Aryan family (*see* Sanskrit Language). The oldest preserved forms of their language, Hindi religious texts called Vedas, are in Vedic Sanskrit, spoken from about 1500 to 200 BC. From 900 to 500 BC the invaders established city-states under absolute monarchs and depended on irrigated farming, including rice culture that was possibly imported from Southeast Asia. Their Hindu religion created an elaborate caste system that stratified society.

B3 Roots of Chinese Civilization

A river basin also nurtured early Chinese civilization. From 3000 to 1600 BC, the plain of the Huang He (Yellow River) sustained large farming communities whose people raised silkworms and spun silk thread and cloth. They traded these products across the camel trails of Central Asia. Although an advanced society developed, the Chinese did not keep written records until the Shang dynasty of the 16th century BC. The Shang ruled over a number of local kings who controlled walled city-states that cooperated to repulse raiding northern nomads. The nomads then dislodged other tribes, setting off a chain of migrations, including that of the Aryans into India between 1500 and 1200 BC.

The Zhou dynasty, which displaced the Shang in the 11th century BC, continued the feudal tradition. Political, economic, and social life in China advanced during the Eastern Zhou period (770-256 BC). Chinese territory more than doubled to include parts of present-day northeast China as well as the Yangtze River Basin, which had the highest population concentration in the world at the time. The Zhou used iron

weapons, expanded irrigation, and built roads and canals to improve communication and commerce. People who trained for civil service, called Mandarins, began assuming positions once held by hereditary officials. This was also the classical age of Chinese philosophy, with Confucianism, Daoism (Taoism), and Legalism all emerging during the Zhou dynasty.

C Major Ancient States

The early civilizations grew and interacted in the 11 centuries from 500 BC to AD 600. Eager to expand their territories, rulers such as Alexander the Great facilitated cultural exchange. Aggressive Manchurian nomads caused other tribes to flee, bringing masses of people into contact with civilized states. By AD 500 the major world religions and philosophies, with the exception of Islam, had spread far from their places of origin.

C1 Persia and Greece

In the 6th century BC Cyrus the Great unified people of Iranian descent and created the kingdom of Persia, eventually conquering and ruling territory from the Mediterranean Sea to the Indus River. The third Persian king, Darius I, centralized the empire's government and supported Zoroastrianism, a religion whose belief of good and evil and of heaven and hell may have influenced other religions such as Judaism, Christianity, and Islam.

C2 Alexander the Great

By 330 BC Persia had been conquered by Alexander the Great, a Macedonian king whose successful military campaigns extended his empire from modern Greece to India. When he died suddenly of fever in 323 BC, his empire broke apart into three kingdoms. Despite Alexander's death, his goal of uniting eastern and western cultures was furthered by his generals, who extended Greek culture into the three kingdoms (*see* Hellenistic Age).

The Seleucids ruled the Asian kingdom, which broke into several states. One of these, called Bactria, straddled the east-west and north-south trade routes. Chinese silk and Indian cotton traveled across these routes to Greece and Rome in exchange for glass, manufactured items, and gold. Elements of Greek culture passed through Bactria before spreading across Asia. Even after nomadic Kushan tribes from Central Asia conquered Bactria, Greek influences prevailed because the new rulers absorbed Hellenistic culture, or Hellenism (a term derived from the Greek word *Hellas*, which means "Greece"). Through the 1st century AD Greek was the international language of business and diplomacy. By this time, Hellenized Romans were entrenched in western Asia, where the Byzantine Empire developed in the 4th century.

Much of southwestern and Central Asia, however, was first dominated by Parthia and later by the Persian Sassanids. Beginning in about 250 BC, the Arsacid dynasty of Parthia gained control of this large region. Due to the region's central location, the Arsacids dominated transcontinental trade. Persian Sassanids conquered Parthia in AD 224, spreading Persian culture widely. Their styles of women's costumes and cosmetics were copied throughout Asia, and Persian architecture, art, and religion spread both east and west.

C3 Indian Expansion

North India was also conquered by Persians, invaded by Alexander the Great, and ruled by Greek kings and Central Asian invaders. As a result, Indian culture both influenced and was influenced by the foreign cultures of its rulers. Both Hinduism and Buddhism may have influenced Greek philosophers, and in northwest India a Greco-Buddhist style of sculpture was popular in the 2nd century AD (*see* Indian Art and Architecture: *Buddhist Sculpture*). Central Asian Kushans conquered north India in the 1st century AD, adopted Indian culture, and converted to Buddhism, encouraging its growth in the Central Asian city-states and in China.

Although foreigners dominated north India for long periods, two native dynasties gained imperial status. The Mauryan Empire emerged as a powerful force at the end of the 4th century BC. Its greatest ruler, Asoka, sent Buddhist missionaries throughout India and Asia. With the downfall of the Maurya in 184 BC, the region fragmented and parts of it fell to foreign invaders. Buddhism became a persecuted religion as Brahman priests spread Hinduism throughout India.

Another native Indian empire emerged in AD 320 when the Gupta dynasty consolidated the Ganges Valley. Although invaders crushed the empire in the 5th century, Indian art, architecture, and civilization reached a pinnacle during the Gupta period.

Small native kingdoms ruled central and south India. The Tamil peoples of the south began colonizing Southeast Asia in the early centuries AD. From these colonies emerged the kingdom of Champa (now part of central Vietnam) and Funan (present-day Cambodia). These Southeast Asian kingdoms had cultures that contained elements of Indian civilization. Lesser states emerged in present-day Thailand, Myanmar, Malaysia, and Indonesia.

C4 Spread of Chinese Civilization

From 206 BC to AD 200 ambitious emperors of the Chinese Han dynasty gained control of a region stretching from the Pacific Ocean to the Tarim Basin. They built northern military outposts along the Great Wall and the edges of the desert to protect the long trade caravans against raiding nomadic tribesmen. Persian, Arab, and Indian traders visited the Han capital, and the Eastern (Later) Han may have had direct contact with Rome.

In 105 BC the Han colonized parts of northern Korea. Chinese culture filtered into the indigenous Korean kingdoms of Koguryŏ (Goguryeo), Silla, Paekche (Baekche), and Kaya (Gaya). To the south, the Chinese imposed their culture on Vietnam, which they directly ruled for about 1,000 years.

Chinese culture during the Han dynasty reached new heights in pottery, sculpture, painting, music, and literature, especially after the invention of papermaking. Chinese engineers built roads and canals comparable to those of the Romans. A prosperous, urbanized society tried to live by Confucian moral ideals.

As the Han dynasty declined, frontier tribesmen became bolder in their attacks. In the early centuries AD, waves of Turkic, Mongol, and Hunnish invaders ignited tribal movements that spread through Central Asia, into Europe, and eventually to Rome. Many Chinese fled south, where a Chinese state formed in the Yangtze River valley. Chinese civilization advanced despite these setbacks, with Buddhism and native Daoism emerging as the dominant religions.

Chinese influences remained strong from the 4th to 7th century during Korea's period of the Three Kingdoms. The Koreans became Buddhists. They used Chinese characters for writing and they eventually copied the Chinese Confucian system of government.

Chinese culture spread from Korea to the island kingdom of Japan, ruled by the Yamato clan, which traced its origins to a legendary sun god. Records exist of Korean Paekche monks traveling to Japan to build temples and forge large bronze images of the Buddha. Japanese alliances with the early Korean states of Kaya and Paekche were eventually severed. As a result of this early contact, however, Buddhism made significant inroads in Japan, Chinese characters were adopted for writing, and other Chinese influences affected Japanese culture.

D Muslim and Mongol Ascendancy

From the 7th to the 15th century, two forces dominated Asian events: the spread of Islam, and the expansion of the Mongols, who conquered much of Asia and threatened Europe. The Mongols warred with Islam and, on occasion, accepted and thus strengthened Islam.

D1 Rise and Spread of Islam

In 7th-century Arabia, the prophet of Islam, Muhammad, claimed to have received the will of Allah (God) through the angel Gabriel. Muhammad's revelations, eventually collected into an Arabic-language book called the Qur'an (Koran), provided the framework of Islamic governments. To spread the word of Allah, Muhammad instructed his followers to engage in military conquest. Muhammad and his Umayyad and Abbasid successors who occupied the caliphate, the office of supreme leader of the Muslims, spread Islam from India to Spain. The caliphate presided over the Islamic states, whose culture combined Byzantine, Persian, Babylonian, and Indian elements. A key link between them was the Arabic language, which all shared through the Qur'an. *See* Spread of Islam.

In the 11th and 12th centuries the Abbasids became puppets of their Central Asian Seljuk soldiers. The Seljuks, who had converted to Islam in the 10th century, warred with the Christian Byzantine Empire. This, combined with the closing of Christian holy places in Palestine, provoked European Christians to launch military expeditions, called Crusades, into western Asia in defense of their religion. The Crusades lasted about 300 years but failed to dislodge the Muslims. Crusaders, however, returned to Europe with many elements of Islamic culture.

Muslim traders exposed Indians to Islam during the 8th century, a period of anarchy on the Indian subcontinent. During the 11th and 12th centuries Muslim Turks and Afghans repeatedly raided India,

destroying Hindu and Buddhist centers, until the founding of the Delhi sultanate in the early 13th century. By the time the Mongols captured Baghdād from the Abbasids in 1258, Islam had already taken root in India. Although slowed by Mongol invasions, the sultanate continued Muslim expansion in India.

While Muslim fanatics were nearly destroying Indian Buddhism, Indian traders and missionaries carried both Buddhism and Hinduism throughout Southeast Asia. The kingdom of Champa, which had adopted Indian culture in the 2nd century, fought both the Chinese-influenced Vietnamese to the north and the Indianized Khmers of Angkor (modern Cambodia) to the west. Despite Angkor's advanced civilization, it fell to the Thai who were pushed out of South China by the Mongols. In present-day Myanmar, the Buddhist kingdom of Pagan fell to direct Mongol invasion at the end of the 13th century.

In the islands of Southeast Asia, the Buddhist kingdom of Sri Vijaya on Sumatra rivaled the Sailendra dynasty of Java, whose people also built Hindu and Buddhist temples. These kingdoms were followed in turn by the Indianized Singosari and the kingdom of Majapahit, whose commerce by the 15th century was dominated by Indian Muslim traders. Although most of Malaysia and the islands of Indonesia became Muslim, Buddhism persisted on the Southeast Asian mainland.

D2 Chinese Influence and Mongol Ascendancy

Islam failed to convert the countries within the sphere of influence of the Chinese, possibly because China experienced a cultural renaissance under the Tang (T'ang) dynasty (618-906). The influence of the Tang reached from Japan to far west of present-day China. Tang Chinese fostered Confucian government, but Buddhism flourished, spawning new sects such as the Zen, which appealed to the Japanese. Subsequently the Song dynasty (960-1279) was pushed out of the north by Khitan and Jurchen tribes and squeezed in the south by invading Mongols.

Meanwhile, the Korean Silla Kingdom, allied with the Tang in China, conquered the Koguryŏ and Paekche dynasties and unified the Korean Peninsula in the 7th century. The succeeding Koryŏ (Goryeo) dynasty (918-1392), like the Chinese Song, was beset by Khitans and Jurchens before yielding to the Mongols. As Mongol power declined in the 14th century, a Korean general founded the Chosŏn (Joseon) dynasty (1392-1910), which became one of the world's longest-ruling dynasties.

China's renaissance during the Tang also affected the Japanese, who intensified their adoption of Chinese culture. Political and economic reforms during the 7th and 8th centuries included Chinese government and socioeconomic concepts. The Japanese court copied Chinese rituals and customs, and Buddhism spread Chinese ideas countrywide. As the provincial nobility grew stronger, the Fujiwara clan gained control at the end of the 8th century. During their rule—known as the Heian period—the members of the Japanese court lived opulent lives, concerning themselves with poetry writing, music, dancing, painting, landscape gardening, and perfume smelling. The Minamoto clan gained control at the end of the 12th century, beginning a period of military dictatorship ruled by shoguns. The effort of repulsing two Mongol invasions so weakened the shogunate, however, that power was seized by the Ashikaga and Japan fell into feudal anarchy.

The Mongols originated in the vast Asian steppes. They came to power under Genghis Khan, who used espionage, trickery, terror, and talented men to conquer western and North China, as well as parts of Central Asia. His sons and grandsons expanded the Mongol Empire into western and southern Turkistan, Iran, and Russia. After the Mongols conquered North China and Korea, Kublai Khan conquered the south, where he ended Song rule and proclaimed the Yuan dynasty (1279-1368). The Mongols accelerated cultural exchanges by maintaining an open, thriving, intercontinental trade and by encouraging foreigners such as Venetian traveler Marco Polo to serve in the Mongol court in China. In the end, corruption, heavy taxes, flood, famine, and banditry weakened the Mongols, who were overthrown in China by the Ming dynasty in 1368. Elsewhere in Asia, the Mongol Empire broke into competing factions and disintegrated during the 14th and 15th centuries.

E Rise of Colonialism

With the fall of the Mongols, rival Asian empires once more contended for power: the Ottomans in present-day Turkey, the Mughals in India, the Iranians, and the Chinese under the Ming and Qing. Political disintegration halted overland trade. Then, as Europe's new national states entered an era of exploration and colonialism, the Ottomans cut off the western end of the sea route to the East. International competition for trade escalated, subjecting Asia to European encroachment.

E1 Post-Mongol Empires

The Muslim Ottomans conquered the remains of the Seljuk and Byzantine empires and moved north into Europe. They captured Constantinople (present-day İstanbul), Syria, and the holy cities of Islam, Mecca, and Medina. Few strong Ottoman sultans emerged after 1566, however, and as Ottoman power declined, their empire became subject to European rivalries.

Iran revived under the Safavid dynasty during the 16th, 17th, and early 18th centuries, but then became a battlefield for Ottomans, Russians, and Afghans. During the Qajar dynasty (1794-1925), Iran became a pawn in European power struggles.

Muslim India experienced an early renaissance under the Mughal dynasty (1526-1858), which claimed descent from Turkic conqueror Tamerlane and Mongol conqueror Genghis Khan. Religious tolerance and political unity grew during the long reign of the third Mughal emperor, Akbar. Later, however, India fell into warring Muslim, Hindu, and Sikh states while weak emperors reigned in Delhi. Into this power vacuum moved the empire-building Europeans.

E2 Colonial Expansion

By the mid-19th century, the major colonial powers in Asia were Britain and Russia. The Portuguese, who had been first to bypass the Ottomans by sailing around Africa, had lost most of their Asian strongholds. Asia was torn by the rivalry between European powers. In India, for example, during the Anglo-French wars of the 18th century, both sides used Indian soldiers, called sepoys.

After defeating the French in the late 18th century, the British expanded in India, annexing states and offering protection to others. By 1850 they controlled the entire subcontinent. Indian discontent with British rule exploded in the Sepoy Rebellion of 1857. India suppressed the revolt but introduced reforms that perpetuated British control for nearly another century.

From India, the British moved into Burma (now known as Myanmar) and the Malay Peninsula. Two Anglo-Burmese wars (1824-1826, 1852) cost Burma its seacoast. The British extended protection over Islamic states of the Malay Peninsula and took direct possession of the important trade centers of Singapore, Penang, and Malacca. Although Britain also threatened Siam (present-day Thailand), the Thai kingdom bargained away its claims to several Malay states in order to retain its own independence.

Russian expansion into Asia far surpassed that of the British in area and was completed much earlier. By 1632 Russian traders and Cossacks had reached the Pacific. Soldiers and officials followed, building forts and collecting tribute from native tribes. Russia advanced into Turkistan in 1750 and by 1828 secured claims to the Caucasus region of northern Caucasia.

The Dutch gained control of the East Indies (modern Indonesia) and the lucrative spice trade, which they had wrested from the Portuguese. Spain ruled the Philippines from the 16th century until the United States exerted control in 1898. The French lost India, but they gained influence in Indochina. Vietnam broke into two states after 1400 but was reunited in the 19th century by the southern Nguyen dynasty, which received military assistance from France. When the Nguyen moved into Cambodia and Laos, their persecution of Christians led to French annexations in the south and the extension of French protection over Cambodia.

E3 Colonial Impact on China, Japan, and Korea

China’s experience with the Europeans in this period was quite different. A thriving trade between Europe and China marked both the early Ming and early Qing dynasties. The early Ming added tributary states and sent great fleets as far as Africa, demonstrating their superiority over European nations. But they then withdrew into themselves. In the mid-17th century, with pirates ravaging the Chinese coast and Confucianist officials bickering at court, a Manchu tribe seized Beijing and proclaimed the Qing dynasty. China expanded under the Kangxi Emperor, who took office in 1661. He met with scholarly missionaries and welcomed trade with the outside world. Although China considered all foreigners to be inferior and confined them to Guangzhou (Canton) and Macao, trade grew. The narcotic drug opium became a major Chinese import. Despite Qing protests and laws prohibiting its importation, Europeans continued to sell opium in Guangzhou. Two armed clashes known as the Opium Wars erupted between Britain and China in the 19th century. As a result, China was forced to open other ports to foreign trade and residence, cede Hong Kong to Britain and Amur province to Russia, accept Western equality, and grant other trade and diplomatic concessions.

Western traders and missionaries first visited Japan in the 16th century during the later years of the Ashikaga shogunate when local wars were common. The regional warlord, Oda Nobunaga ousted the Ashikaga from their residence in Kyōto in 1573 and began reuniting Japan. When Oda was killed in 1582 his follower Toyotomi Hideyoshi took power. With the aid of Portuguese guns and military advice,

Toyotomi reunited most of Japan by 1590. He then unleashed his forces on Korea, but was turned back by a coalition of Chinese Ming and Korean forces. Under the Tokugawa clan, who succeeded to the shogunate, the Japanese faced the full impact of foreign influences, which they viewed with fear and suspicion.

First came the Portuguese and Spanish, accompanied by missionaries who spread Christianity through the islands. Fearing that the missionaries were forerunners of foreign invasion, the shoguns banned Christianity, expelled the missionaries, and persecuted the converts. Western trade stopped, except with the Dutch, who avoided missionary activities and helped suppress a Christian rebellion. For two peaceful centuries, the Dutch were Japan's sole link with the West.

European traders and explorers began visiting Japan more frequently during the early 19th century, despite its official bans. In 1854 an American mission under Commander Matthew Calbraith Perry secured a treaty opening consular relations. Then in 1858 the first consul, Townsend Harris, concluded a commercial treaty.

F Imperial Expansion and Modernization

The colonialism and imperialism of the 17th to 20th century brought new problems to Asians, who until then had generally absorbed invaders. The new invaders came by sea to trade but, as their technical and military superiority grew, they sought economic and political control.

F1 Techniques of Western Exploitation

European colonizers generally took a gradual approach in establishing their supremacy. Requests to trade were followed by demands for forts and land to protect the trade, and later for concessions to exploit local resources. European government and military advisers were then pressed on local rulers. Weaker rulers were offered protection, which in time involved some control. Sometimes, as in the East Indies, the Europeans demanded tribute payable in trade goods. Rival colonial powers carved out spheres of interest in nations such as Iran and China, ultimately resulting in direct rule and occasionally in annexation.

The imperialists built railroads, roads, canals, and some schools. They also invested in plantations, oil wells, and other enterprises linked with the world economy, but sent most profits home. Meanwhile, Asia's population grew and with each generation family farms became more fragmented. The population growth also affected colonial cities, which received an influx of residents from rural areas. For Asians, these conditions were the source of demoralizing social problems.

Except in Japan and Siam (present-day Thailand), traditional Asian institutions were slow to borrow or adapt Western techniques or ideologies, and consequently suffered humiliating exploitation, unequal treaties, or foreign rule. By the beginning of World War II in 1939, nationalism and socialism had spread among the Western-educated native elite, and movements for self-government and independence emerged everywhere. The colonial governments, however, usually responded tardily to the rising expectations these movements generated.

F2 Responses to Imperialism

The education of an elite and the training of native armies encouraged internal forces that undermined the existing dynasties and prompted reform and modernization. In the Ottoman Empire and Iran, for example, foreign-trained army officers seized power, which aroused feelings of nationalism and promoted modernization.

Native participation in India's colonial government broadened gradually. The pace never satisfied Indian aspirations, however, and Indian schools produced more graduates than there were jobs. Rising discontent found voice in several associations and political parties. Among these was the Indian National Congress, which first convened in 1885. Originally advocating democratic reforms under British rule, by 1929 the group was demanding total independence. The Muslim League, founded in 1906 and a rival of the Indian National Congress, was also influential.

In 1930 Britain refused to grant India dominion status, or self-government within the Commonwealth of Nations. This stimulated a Hindu independence movement led by Mohandas Karamchand Gandhi, and in 1935 the Muslim League, led by Mohammed Ali Jinnah, demanded a separate Islamic state.

Nationalism and dissent also grew in Southeast Asia. Britain fully annexed Burma by the late 19th century. With British rule came Indian immigration and Buddhist social disintegration. Buddhist monks and students began agitating first for separation from India, then later for complete self-government. Although the Dutch ended crown rule in the East Indies in 1867 and granted reforms and increased autonomy, dissidence grew, stimulated by Muslim leaders and Dutch repression. In the Philippines, annexed by the United States in 1898, nationalistic activities paralleled growing self-government. France completed annexing or asserting protectorates over Indochina by 1885. Although Laos and Cambodia accepted French rule, Vietnamese nationalists agitated for independence.

As foreign powers exploited China and the country suffered revolutions and natural disasters, many Chinese believed the Qing dynasty had lost its mandate to rule. They doubted, however, that any dynasty could cope with Western technology and ideologies without modifying or eliminating China's Confucian system. China lost the first of the Sino-Japanese Wars in 1894, further exposing its helplessness and stimulating dissent. A revolution led by Sun Yat-sen ended the Qing dynasty in 1912. Sun and other republican leaders were pushed aside by military leaders, led by President Yüan Shi-k'ai. When Yüan died in 1916, China disintegrated into warlord rule, while Japan sought to gain supremacy over China in World War I (1914-1918). At the Treaty of Versailles, former German concessions in China's Shandong Peninsula were given to Japan, and Chinese students erupted in protest. Some students became republican nationalists, while others looked to Communism and to the new Union of Soviet Socialist Republics (USSR). A long civil war followed between the Kuomintang (KMT) led by Chiang Kai-shek and the Communists under Mao Zedong. They were unable to permanently unite, even against Japanese invaders, who by 1941 had advanced well into China from their puppet state of Manchukuo in the northeastern part of the country. Japan's threat to China was eliminated at the end of World War II in 1945 and the Communists gained control of the country by 1949. The KMT fled to Taiwan.

F3 Maintaining Independence

Siam retained independence due to the efforts of two progressive kings, Mongkut (Rama IV) and his son Chulalongkorn (Rama V). Constitutional monarchy came in 1932, but subsequent coups brought military dictatorships and a new name, Thailand, symbolizing Thai nationalism.

Japan prevented foreign encroachment by rapid modernization. The government built factories and sold them to private companies. Universal conscription ended the military monopoly of the samurai warriors, and in the new army even peasants became officers. Under Emperor Meiji, constitutional monarchy and universal male suffrage were established in 1889, forcing elected leaders to seek popular support.

Japan's victory in the Russo-Japanese War of 1904 to 1905 boosted its international prestige. With the annexation of Korea in 1910, Japan became a colonial power. European exports came to a halt during World War I, enabling Japan to expand its own foreign markets. When the world economic depression of the 1930s hit Japan, ambitious young officers pressed for ultranationalist policies. Japan initiated heavy arms expansion and the conquest of northeast China, and invaded China and Southeast Asia. In 1940 Japan formed an alliance with Germany's Adolf Hitler and Italy's Benito Mussolini, who accepted Japan's plans for a new order in East Asia.

G Independence and Conflict

Asia was catapulted into world prominence during World War II. Japan entered the war in 1941 and rapidly made conquests in the Pacific and Southeast Asia, exposing the vulnerability of the Western powers. India became a staging area for the Allied Powers, which included Britain, France, and the United States. In Southwest Asia, the Allies occupied strategic areas to protect supply routes. The eventual Allied victory in World War II further stimulated native expectations for independence and modernization in South and Southeast Asia.

G1 Intensified Nationalism

Fueled by intensified nationalism, militant independence movements had largely ended colonial rule in Asia by the end of the 1950s. But major differences persisted. On the Indian subcontinent, religious separatism created Muslim Pakistan alongside India. Pakistan was itself subdivided in 1971 when its eastern section broke away and formed Bangladesh. Border disputes embittered Pakistani-Indian relations as Pakistan produced a series of autocratic military rulers, while India maintained a parliamentary democracy.

In Southwest Asia, religious and territorial nationalism created the Jewish state of Israel in 1948. Hostilities between Israel and its Arab neighbors—Egypt, Syria, Iraq, and Jordan—disrupted world trade when the Suez Canal was closed in 1956 and 1957, and again from 1967 to 1975. Meanwhile, Israel occupied large tracts of Arab land. Palestinian Arab refugees from Israel formed the Palestine Liberation Organization (PLO) and demanded return of their homeland. Peace efforts led to a treaty between Israel and Egypt in 1979, but a solution to the Israeli-Arab differences remained elusive. Following the Persian Gulf War of

1991, Israel and other Middle East countries met in Madrid, Spain, in November. Although initial conferences there and in Washington, D.C., in 1992 failed to resolve major issues, for many countries these meetings represented their first direct contact with Israel. Subsequent meetings in the 1990s led to limited Palestinian self-rule in the West Bank and Gaza Strip, with Israeli control over Jewish settlements there.

The Middle East was divided into numerous states, each subject to internal stresses. Iran, for example, experienced a nationalistic outburst in the 1950s under its charismatic prime minister, Mohammad Mosaddeq, who nationalized the oil industry. Twenty-five years later, in 1979, a religious and political nationalistic surge deposed the U.S.-supported Muhammad Reza Shah Pahlavi (*see* Islamic Revolution of Iran). As the conservative Islamic government floundered, militants seized the U.S. embassy and initiated a long international crisis. Iraq, meanwhile, seized the opportunity to launch a bloody, costly, and ultimately inconclusive border war (*see* Iran-Iraq War). Iraq occupied Kuwait in 1990, but the Persian Gulf War of 1991 restored Kuwaiti independence.

G2 Ideological Confrontation

Postwar rivalry between Communist and non-Communist ideologies was part of the global contest between the USSR and the United States. Communism appealed to many Asians eager for independence, participatory government, and social reforms. An important Communist triumph was the victory of the Soviet-supported People's Republic of China in 1949 and the retreat of the U.S.-backed Nationalists to Taiwan. It was tempered, however, by continued United Nations (UN) recognition of the Republic of China on Taiwan. Under Mao Zedong the Chinese Communists experimented with radical socialist programs, ending in the destructive Cultural Revolution (1966-1976). As differences between China and the USSR grew, the United States began diplomatic contacts with Communist China. The People's Republic was given China's seat at the UN in 1971, and in 1979 the United States recognized it as China's only government.

Communist forces also won in Vietnam when North Vietnam, aided by the USSR and China, defeated U.S.-supported South Vietnam in 1975. The Communist victory in Vietnam, as well as victories in Cambodia and Laos, caused a mass migration of refugees to other countries of Asia, Europe, North America, and Australia. In other locations, Communist forces lost. The new independent government of the Republic of the Philippines crushed the Communist Hukbalahaps. The Malays, with British help, contained their Communist guerrillas. Indonesia's Communist Party, which thrived under independence leader Sukarno, was suppressed in 1965. The resulting massacre mingled ideological with nationalistic motivations, for many Indonesian Communists were ethnic Chinese.

In Korea, which had been divided by Soviet and American occupation forces, the Communist north invaded the south in 1950. As UN forces repulsed the North Korean troops, Communist Chinese intervention brought a stalemate and an uneasy truce. *See* Korean War.

The strategic position and resources of the Middle East thrust the area into the ideological contest. An early Soviet attempt to occupy northern Iran failed, but the USSR later gained influence in Iraq, Syria, and Yemen. The Arab-Israeli conflict also inclined many Arab nationalists to favor the USSR. From 1979 to 1989, Soviet troops occupied Afghanistan, sending some 3 million Afghan refugees into Pakistan.

No Asian country was untouched by the confrontation between Communist and non-Communist ideologies. The failure of Turkey's government to curb inflation and to stop leftist-inspired riots and assassinations brought about a military coup in 1980. During most of the 1970s and 1980s, India sided with the Soviets on many foreign policy issues, and Pakistan looked toward China and the United States. While postwar Japan maintained the democratic reforms of the U.S. occupation, Communists gained power in labor unions and student groups.

G3 The Decline of Communism

During the 1980s and early 1990s some of the critical political alliances throughout Asia began to change. Both China and Vietnam embarked on a process of economic reform that was firmly established by the mid-1980s. The opening of both countries to foreign investment, coupled with the demise of the Soviet Union and the Communist regimes of Eastern Europe, thrust China and Vietnam into new links with the West. Vietnam gained admittance to the staunchly anti-Communist Association of Southeast Asian Nations (ASEAN) in 1995, and China sought out a greater role in international matters.

In 1990 the Communist Party of the Soviet Union agreed to give up its monopoly on power, and in late 1991 the Soviet Union collapsed. A new, democratic constitution was adopted in Russia in 1993. A series of new Central Asian states, formerly republics within the USSR, obtained their independence with the demise of the Soviet Union. Other republics that remained part of Russia, such as Chechnya, have continued to seek independence.

Politics in the Middle East have continued to take unexpected turns. In 1993 the PLO, formerly intent on destroying Israel, recognized the country's right to exist. Israel, in turn, recognized the PLO as the representative body of the Palestinians. Limited self-rule followed in Gaza and the West Bank.

H Economic Expansion

Postwar economic and industrial expansion along Asia's Pacific coast have supported claims that the world is on the threshold of the "Pacific century." During the 1970s Japan outpaced the United States in automobile, steel, and electronic production. In 1970 the Japanese economy was just one-fifth the size of the U.S. economy. By 1992 it had grown to two-thirds the size of the U.S. economy; per person production was significantly higher than in the United States, and per capita growth was more than twice the U.S. rate. Japan has emerged as one of the world's two economic superpowers, next to the United States.

Following in Japan's footsteps, Asia's "Four Tigers"—Hong Kong, Singapore, South Korea, and Taiwan—have prospered as they expanded manufacturing and exports. By the 1990s all were among the world's top 20 exporters, along with China and Saudi Arabia. Altogether, Asian economies accounted for 17 of the world's top 50 exporters.

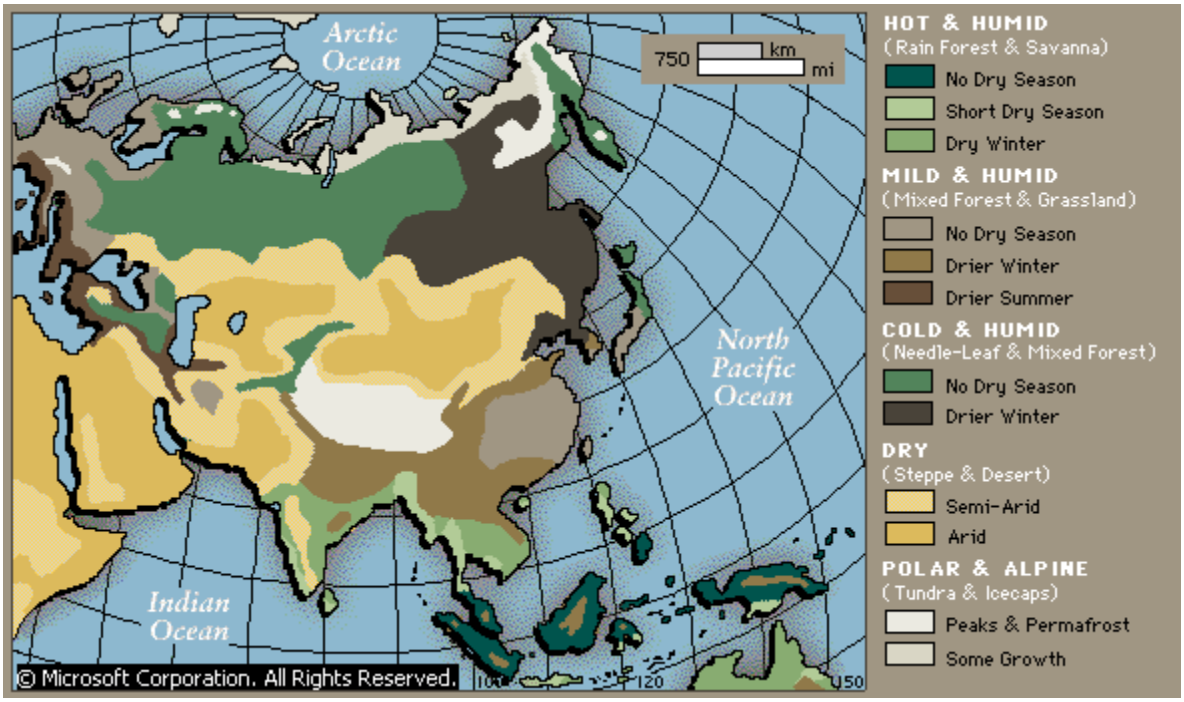
Pacific Asian economic growth has not been without cost. Although there is a trend toward democratization in some countries, such as South Korea and Thailand, most retain authoritarian governments. Rapid

industrial growth has often proved damaging to the environment. Inequalities in the distribution of income have generally worsened in the early industrialization phase, before slowly starting to improve.

In Southwest Asia, oil exports produced huge wealth. Although large sums ended up in private hands, much money was poured into social and modernization programs. Thousands of students who studied abroad returned to demand more rapid change than governments or conservative religious elements could accommodate. Such a climate preceded the Iranian revolution of 1979.

Oil also became a potent political weapon. During the Arab-Israeli War of 1973, Arab producers denied oil to countries supporting Israel. Acting together, the oil-exporting nations so escalated crude-oil prices during the late 1970s that oil-importing countries suffered severe inflation with concurrent recession. The Iran-Iraq War of the 1980s, which at first appeared to threaten oil output, actually had the effect of reducing oil prices because it fostered disunity among the oil-producing countries of the Middle East. Iraq's 1990 invasion of Kuwait also affected oil output, as many of Kuwait's oil wells were set on fire by Iraqi forces during their retreat from Kuwait in the 1991 Persian Gulf War. The war also emphasized the fragility of the Middle East's political situation.

Profound changes—many of which should improve the economic and social development of Asia—have been initiated by the industrialization of the countries of Pacific Asia, the breakup of the Soviet Union, the emergence of more democratic governments, and the moves toward peace in the Middle East. Yet many political problems remain to be solved. Fighting in Afghanistan, the struggles of the Chechens in Russia, the Tamil push for a homeland independent of Sri Lanka, and the Tibetans urge for independence from China are some of the regional conflicts that remain in Asia. The countries of North America and Europe dominated most of the 20th century; Asia's influence on world affairs is growing and will likely continue to expand in the 21st century.



Asia: Climate Map

Asia experiences virtually every climatic condition on earth. With such an expansive, varied terrain, with so many striking topographic features, the continent is at once warm, cold, wet, and dry.

Surse: Encarta