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South Asia consists of Afghanistan, Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan, and Sri Lanka—a region that is naturally bounded by mountain ranges and seas (**Figure 11.1**). To the north is the almost impenetrable mountain rim of the Karakoram range and the Himalayas, while to the northwest are the forbidding ranges of the Sulaiman and the Hindu Kush. The Indian Peninsula and its large offshore island of Sri Lanka are girdled by the seas of the Indian Ocean—the Arabian Sea to the west, and the Bay of Bengal to the east. It is a very heavily populated world region, with 1.35 billion people, more than a billion of whom live in India.

Figure 11.1: map—political boundaries and major cities

South Asia is economically underdeveloped and politically volatile, though it is also a region of great potential. It is still a land of villages: only about 10 percent of the population of Bhutan and Nepal live in urban settlements, while in the greater part of the region the urban population amounts only to between 25 and 35 percent of the total. Not surprisingly, rural ways of life and traditional cultures remain extremely important throughout South Asia. Even broader as a defining characteristic of the region is poverty. The majority of South Asia's rural population is desperately poor, as are millions of the region's city dwellers. Hunger and malnutrition are widespread; barely half the adult population is literate; and only a minority of the population lives in sound housing with electricity and piped water. The abiding image, as described by Indian author Pankaj Mishra, is "the broken road, the wandering cows, the open gutter, the low ramshackle shops, the ground littered with garbage, the pressing crowd, the dust."¹

However, another defining characteristic of the region derives from the stark contrasts that exist within and between places and sub-regions. Amid hierarchical traditions and social conservatism are deeply-rooted ideals of equity and social justice. Amid predominantly rural settings are megacities like Delhi, Dhaka, Kolkata (formerly Calcutta), Karachi, and Mumbai (formerly Bombay). And amid extreme economic backwardness and widespread illiteracy there exists intellectual refinement and world-class technological innovation. To the stereotypical image of slow-moving lifestyles of dusty poverty we must add the legacies of sophisticated civilizations and the imprint of a growing middle class—computer programmers, managers, engineers, shop owners, media consultants, and so on—whose social practices and material consumption are convergent with those of the middle classes in Europe and North America.

¹ Mishra, P. *Butter Chicken in Ludhiana: Travels in Small Town India*. London: Penguin, 1995, p. 93.

ENVIRONMENT AND SOCIETY IN SOUTH ASIA

Two aspects of South Asia's physical geography have been fundamental to its evolution as a world region. First, as the satellite photograph reveals, South Asia is clearly set apart from the rest of Asia by a forbidding mountain rim (**Figure 11.2**). This arc of mountain ranges has isolated and protected the peoples of South Asia, creating a large-scale natural setting in which distinctive human geographies have evolved. A second striking feature of the satellite photograph is the extent of the surrounding seas. Historically, the Arabian Sea provided a crucial routeway to South Asia from the Middle East and the Mediterranean, while the Bay of Bengal gave access to (and from) Southeast Asia. These seas, together with the broader Indian Ocean, also produce the moisture for the summer monsoons, seasonal torrents of rain upon which the livelihood of the peoples of South Asia depends.

Figure 11.2:—satellite photo of South Asia

In geological terms, South Asia is a recent addition to the continental landmass of Asia. The greater part of what is now South Asia broke away from the coast of Africa about 100 million years ago and drifted slowly on a separate geological plate for over 70 million years until it collided with the southern edge of Asia. The slow but relentless impact crumpled the sedimentary rocks on the south coast of Asia into a series of lofty mountain ranges and lifted the Tibetan Plateau more than 5 kilometers (3.1 miles) into the air. The Himalayas, which stand at the center of South Asia's mountain rim, are still rising (at a rate of about 25 centimeters—9.8 inches—per century) as a result of this geological event.

Major Physiographic Regions

Not surprisingly, the principal physiographic regions of South Asia also reflect this major geological event. Between the mountain rim and the plateau lands of peninsular India that stand on the ancient geological plate that drifted across from Africa are alluvial plains of young sedimentary rocks and material that has been washed down from the surrounding mountain rim and plateau. The coastal fringe of peninsular India, together with the coastal plains of Sri Lanka, the Maldives, and the Andaman and Nicobar islands constitute a fourth physiographic region (**Figure 11.3**).

Figure 11.3:—map of major physiographic regions

The Peninsular Highlands

The Peninsular Highlands of India form a broad plateau flanked by two chains of hills and uplands. The Highlands rest on an ancient shield of granites and other metamorphosed sedimentary and igneous material, together with some very old sedimentary rocks. This shield has remained a relatively stable landmass for much of the past 30 million years, but between 65 and 55 million years ago there occurred fissure eruptions of lava on an immense scale that buried the northwestern part of the

peninsula beneath up to 3000 meters (9842 feet) of basalt. Today, this lava plateau—the Deccan Lava Plateau—covers about one-third of the Peninsular Highlands (Figure 11.3). To the north and southeast of the lava plateau the ancient shield has been shaped into a broad area of plateaus, scarplands, and basins. Surrounding this central body of the Peninsular Highlands is a series of hills and uplands. These include Aravalli Hills, the Western Ghats (the steep westward facing scarp of the eastward-tilted shield of the Peninsular Highlands), the Nilgiri Hills, the Southern Ghats, the Orissa Hills, the Nallamallai Hills, and the Balaghat (Figure 11.3). These uplands are sparsely populated, but have long provided refuge for many of India's tribal populations and for renegade princes; slopes for tea and coffee plantations; and shelter for wild game.

The rugged topography of the Peninsular Highlands as a whole has left the region somewhat isolated. Historically, it developed its own traditions and distinctive cultures, supporting a mosaic of local kingdoms. Because the only sources of water for farming are the seasonal and unpredictable annual rains of the monsoon, the peoples of the region have never enjoyed a rich agricultural economy, and subsistence farming and small villages still dominate the landscape throughout most of the region (Figure 11.4). There are, though, valuable deposits of iron ore, manganese, gold, copper, asbestos, and mica in the region, and thick seams of coal are present in the northeastern and east-central parts. Several of India's larger and most industrialized cities—including Ahmadabad, Bangalore, Bhopal, and Mysore—are located in the region.

Figure 11.4:—photo of plateau landscape

The Mountain Rim

At the heart of the Mountain Rim are the young but spectacular ranges of the Himalaya and Karakoram ranges. Arcing round to the west are the structurally complex ridges, ranges, and basins of the Hindu Kush, the Sulaiman range and the Kirthar range, and behind these are several basins of inland drainage containing **playa** lakes, such as Dasht-i-Margo and Hamun-i-Mashkel. Arcing round to the east is a series of parallel anticlines and synclines that reach the coast in the Chittagong Hills. Coal is found in workable quantities in parts of the mountain rim; oil-bearing ranges have been located in the Salt Ranges (also an important source of rock salt), the Assam Valley, and Gujarat, and natural gas is present in Bangladesh and the Sindh region. Still slowly rising, the mountain rim suffers from earthquakes, and severe shocks have occurred at various places along the entire length of the rim. Interspersed among the high peaks and the foothills are protected gorges and fertile valleys (Figure 11.5) that sustain isolated settlements of independent mountain peoples whose livelihood is based on flocks of sheep, goats, and yak; or on the tea plantations and orchards that cover the lower hills.

Figure 11.5:—aerial oblique photo of Himalayas or Karakoram

The Plains

Broad plains of young sedimentary rocks and alluvium have been created by the deposition of material that has been eroded from both the Peninsular Highlands and the Mountain Rim. Three river systems—the Indus, the Ganga (Ganges), and the Brahmaputra—begin within 1600 kilometers (994 miles) of one another in the Himalayas but flow in three different directions through the mountains and into the plains. The Indus flows to the west, through Pakistan, to the Arabian Sea. The Brahmaputra flows eastward before doubling back through the Assam valley and then flowing south to the Bay of Bengal. The Ganga flows southwards before turning east, eventually merging with the Brahmaputra and forming a vast delta, over 300 kilometers (186 miles) wide. All three river systems provide the Plains region with a steady, if uneven, flow of melting snow. As a result, the Plains region has long been widely irrigated and has supported a high density of population. The great dynasties of India—the Mauryan (320-125 B.C.), Gupta (A.D. 320-480), and Mughal (1526-1707)—all rose to prominence in this region, and the British moved their imperial capital here, to Delhi. Today, the Plains contain some of the most productive agricultural lands of South Asia (**Figure 11.6**). The cultivation of grains and rice is the predominant activity.

Figure 11.6:—photos of Plains landscapes

Not all of the Plains are so productive, however. Within the Plains are sub-regions with harsh environments for human settlement. The Thar desert, between the Indus Valley and the Aravalli Hills, is one. At the other end of the Plains is the Meghna Depression, an immense backswamp of the Brahmaputra system that provides a seasonal natural reservoir for the floods that regularly inundate lowland Bangladesh (Figure 11.6). In the Assam Valley, the shifting, braided course of the turbulent Brahmaputra discourages settlement throughout much of the sub-region.

The Coastal Fringe

The Coastal Fringe of South Asia consists of a rather mixed group of physical features. In places the Coastal Fringe is the product of marine erosion that has sawn into the edge of the ancient shield of the Peninsular Highlands; elsewhere it is the product of marine deposits; and in some places the plains consist of alluvial deposits in the form of deltas and mudflats. For the most part the Coastal Fringe is relatively narrow, and along India's western coast outlying spurs from the Western Ghats make it difficult to travel along the fringe by land. Far out into the Bay of Bengal are the Andaman Islands and the Nicobar Islands, both belonging to India but physiographically an extension of the Sumatran ranges of Southeast Asia (see Chapter 10). About 650 kilometers (404 miles) to the southwest of India in the Indian Ocean are the Maldives, an independent state of 1190 tiny islands (only 200 of which are inhabited) grouped into 26 **atolls**.

The Coastal Fringe is fertile in places and has been hospitable for human settlement. During the rainy monsoon seasons, the Coastal Fringe is filled with luxuriant growth, especially along the southwest Malabar Coast of India, where rich harvests of rice and fruit support rural populations of more than 1500 per square kilometer (3900 per square mile). Many of South Asia's largest and most prosperous cities developed from trading posts that were established along the Coastal Fringe in the seventeenth century, and the largest among them—Chennai (formerly Madras), Colombo, Karachi, Kolkata, and Mumbai—were great centers of commerce under British imperialism.

Climate

The Mountain Rim and the surrounding seas that we have noted as having been fundamental to South Asia's evolution as a world region are also strongly influential in shaping climate. The mountain rim effectively bars the movement of surface level airstreams between South Asia and the rest of Asia, and vice versa. By contrast, no relief feature to the south of the mountain rim stands high enough to prevent the free flow inland of airstreams from the surrounding seas. Rather, all of the hills and uplands exert a strong **orographic effect**, causing moist air from the sea to lift and condense and producing heavy rainfall. Beyond these factors, the overall climates of South Asia are determined by global atmospheric circulation, as in other world regions. In South Asia, the dominant aspect of atmospheric circulation is the southwesterly summer monsoon. The word monsoon derives from the Arabic word *mausim*, denoting 'season.' Although now widely used to describe any seasonal reversal of wind flows in the lower-middle latitudes, 'monsoon' was originally applied to the distinctive seasonal winds in the Indian Ocean that Arab traders relied upon to power their sailing ships on their annual voyages to and from the East Indies in quest of spices, ivory, and fine fabrics.

In most of South Asia, the seasonal pattern of climate is as follows: a cool and mainly dry winter; a hot and mainly dry season from March or April into June; and a wet monsoon that 'bursts' in June and lasts into September or later. In winter, a major branch of the jet stream tends to fend off the low-pressure systems of the circumpolar atmospheric whirl, helping to maintain stable high-pressure conditions over the Mountain Rim and the Tibetan Plateau. The prevailing winds are northeasterly, blowing from the sub-continental interior toward the sea—these are the so-called 'dry monsoon' winds (**Figure 11.7**). One exception to this pattern is in parts of Afghanistan, Pakistan, and Northwest India, where shallow low-pressure systems move through from the eastern Mediterranean, bringing light but useful rainfall in late winter. Another is northern and eastern Sri Lanka, where trade winds bring some winter rains. The southern part of Sri Lanka, together with the Maldives and the

Nicobar Islands, are so far south as to be affected by inter-tropical convergence, and so rarely have a dry month all year.

Figure 11.7:—map of winter & summer monsoons

Similar conditions persist, in terms of atmospheric circulation, into the early Summer. By May, daytime temperatures reach between 30°C and 40°C (between 86°F and 104°F) across most of South Asia. This is the season of heat and dust. By June, the earth is scorched, and farmers can grow nothing without irrigation. Everyone tends to become preoccupied with the discomfort of heat and humidity. One of the hottest places is Jacobabad, in Pakistan, where daytime temperatures in June average 45°C (113°F) with a maximum of 53°C (127°F) and a minimum of 29°C (84°F).

In mid-summer, the jet stream and the northern circumpolar atmospheric circulatory system move north of the Mountain Rim, allowing moist maritime air to invade the region. The southern circumpolar atmospheric circulation, now in its winter strength, produces strong trade winds that sweep north to become the southwest, or 'wet' monsoon (Figure 11.7). The arrival of the wet monsoon season is announced by violent storms and torrential rain. This is the 'breaking' of the monsoon. The monsoon season typically brings almost daily downpours, giving life to farms and fields. Where the low-pressure systems of the summer monsoon flow over hills and mountains, the monsoon rains are especially heavy. The Western Ghats and adjacent coastal plains typically receive between 2000 and 4000 mm (79 to 158 inches) of rainfall as the southwest monsoon winds meet the steep scarp slope at the edge of the Peninsular Highlands. Similar levels of annual rainfall are received in the central and eastern parts of the Mountain Rim. Cherrapunji, in the Khasi Hills south of the Assam Valley, boasts the world's average annual rainfall record of 11,437mm (450.6 inches). It once recorded as much as 924 mm (36.4 inches) in one day at the onset of the monsoon season.

Occasionally, two streams of monsoon air, one moving up the Ganga Valley from the Bay of Bengal, the other across Rajasthan from the Arabian Sea, converge over the Himalayan foothills to produce abnormally heavy rainfall and floods. This is what happened in August 2000, leaving over 500 dead and more than 4.5 million homeless in a 1500-kilometer (932 mile) long, 500-kilometer (311 mile) wide swath of the Himalayan foothills. It is in Bangladesh, however, that monsoon rains produce regular and widespread flooding. Swollen by monsoon rains, the **distributaries** of the Ganga and Brahmaputra systems regularly spill over into the low-lying delta and plains areas. When monsoon rains are unusually heavy, flooding can be disastrous, inundating villages, drowning people and livestock, and ruining crops. When such conditions coincide with onshore typhoons, disaster can reach monumental proportions. In 1999, a particularly violent cyclone hit the low-lying coast of northeast India, pushing rivers backward and flooding

much of the province of Orissa, killing an estimated 10,000 people and leaving hundreds of thousands homeless (**Figure 11.8**).

Figure 11.8 photo of Orissa floods

For much of South Asia, in contrast, there is a significant risk of drought and famine as a result of a late or unusually dry monsoon season. The Peninsular Highlands, the Indus Valley and adjacent plains, and the hills and basins of the northwestern portion of the Mountain Rim are especially prone to drought. In 2000, the late arrival of the summer monsoon left over 50 million people in west and central India facing acute water shortages and widespread crop failure.

Environmental History

The first extensive imprint of human occupation dates from at least 4500 years ago, when the peoples of the Harappan culture began to irrigate and cultivate large areas of the Indus Valley. Flourishing between 3000 and 2000 B.C., Harappan agriculturalists produced enough surplus, primarily in cotton and grains, to sustain an urban civilization. Harappan culture rivals its contemporary urban civilizations along the Euphrates and the Nile (see Chapter 5, p. 000) for the tag of 'the cradle of civilization'. Archaeological evidence shows that Harappans did carry on trade with these civilizations in the Fertile Crescent, as well as with peoples in Southeast Asia and China. Soon after 2000 B.C. floods obliterated Harappan cities, leaving them covered in mud. It is possible that environmental degradation—especially the loss of the natural vegetative cover and the silting-up of irrigation and drainage channels—contributed to the flooding, though it may have been due entirely to climate change or tectonic movement.

The next significant impact on the natural environments of South Asia came with the incursion into the Gangetic Plains of tribal herdsmen from Central Asia. They were called Aryans, and between 1500 and 500 B.C. they developed arable farming, assimilated or repulsed neighbors, adopted a settled life, organized into functional groups, opened trade links, built cities, and created a rich culture—the Vedic culture—whose mythic understanding of the world came to be a cornerstone of Hinduism. As their numbers grew, clans began to split away to annex new territory. In doing so, they began the transformation of the Ganga Valley from a moist green wilderness of forest and swamp to a dusty plain where tufts of trees survive only as shade for huddled villages. The deforestation of South Asia had begun. By 500 B.C the Vedic peoples had spread eastward into present-day Bihar and had learned to cultivate rice, clearing land along valley slopes in order to build terraces.

While the Plains region remained the most intensively developed, human settlement spread throughout South Asia, and a succession of kingdoms, sultanates, and empires slowly brought more land under cultivation. For

the most part, though, human occupation was sustainable. Subsistence farmers, herders, fisherfolk, and artisans drew on local resources for their food, traditional medicines, housing materials, and fuel, but apart from clearing part of the forest cover their activities could be sustained from one generation to another without significant harm to the environment. It was the arrival of European traders, and especially British rule, that accelerated the deforestation of the sub-continent. In 1750, when the British were beginning their imperial conquests, more than 60 percent of South Asia was still forested, from the dry alpine forests of the Himalayan foothills and the mangrove forests of Bengal to the acacia forests of the Peninsular Highlands and the evergreen rainforests of the tropical coastal plains. British imperial rule brought the systematic clearance of land for plantations, and the methodical exploitation of valuable tropical hardwoods for export to Europe and North America. As railways opened up the interior of the sub-continent, deforestation gathered pace. By 1900, only 40 percent of South Asia remained forested.

The most rapid period of change, however, has been the past 50 years, as the independent countries of South Asia have sought to modernize and expand their domestic economies. Between 1951 and 1976, for example, some 15 percent of India's land area was converted to cropland. Meanwhile, population growth in rural India has led to more and more wood being taken as fuel. Only 20 percent of India remains under forest today, and less than half of that is intact, natural forest—the rest consists of forest plantations, which have displaced natural ecosystems with monocrops. About one-third of the forest plantations in India consist of eucalyptus, a fast-growing, non-indigenous species that is very demanding of soil moisture. India's forests still represent a valuable trove of biodiversity (together, they house some 45,000 plant species, 372 species of mammals, 1250 bird species, and 399 species of reptiles), but they are under severe pressure, along with some of the key species that rely on them (see *Geography Matters: South Asia's Disappearing Mega-fauna*).

Geography Matters: South Asia's Disappearing Mega-fauna

The combination of population pressure and the desire on the part of newly-independent countries to jump-start industry and agriculture has also put pressure on other natural resources, especially water. In parts of Punjab and Haryana, the 'breadbasket' of India where almost a third of the country's wheat is grown, the water table has fallen over 4 meters (13 feet) in the last decade. In the southern Indian state of Tamil Nadu, groundwater levels have fallen over 25 meters (82 feet) in the last decade as a result of overpumping, leaving Chennai, like many other large cities, dependent on supplementary water supplies hauled in by tanker.

In parallel with the acceleration of resource depletion there has been an acceleration in levels of environmental pollution. In India, some 200

million people do not have access to safe and clean water and an estimated 80 per cent of the country's water sources are polluted with untreated industrial and domestic wastes. The Asian Development Bank has estimated that fewer than 1 in 10 of the industrial plants in South Asia comply with pollution control guidelines. Only 10 percent of all sewage in South Asia is treated. India alone generates about 50 million tons of solid waste each year, most of which is disposed in unsafe ways: burned, dumped into lakes or seas, or deposited into leaky landfills. Air pollution has also become a serious issue. Little is known about the effects of acid rain on forests and cropland in South Asia, but the effects of air pollution in cities are clear. According to the Tata Research Institute in New Delhi, air pollution in India causes an estimated 2.5 million premature deaths each year. Motor vehicle emissions are a major contributor to urban air pollution. During the 1990s, the number of vehicles on Indian roads increased by 300 percent, and there has been a corresponding rise in rates of respiratory diseases.

Still, most people in South Asia—65 to 75 percent, in fact—are not city dwellers. Geographers Madhav Gadgil and Ramachandra Guha of the Indian Institute for Science estimate that some 400 to 500 million people remain what they call 'ecosystem people,' living at subsistence levels but in sustainable ways that have protected and preserved the environment. Increasingly, however, these ecosystem people are being pushed onto unproductive soils and arid hillsides as commercial forestry, mining, the construction of roads and dams, and the spread of industry limits their access to the land. As the environmental commons diminish and populations increase, a destructive cycle is set in motion. Ecosystem people are forced to use their limited resources in increasingly unsustainable ways, depleting sources of fuelwood, exhausting soils, and draining water resources.

SOUTH ASIA IN THE WORLD

South Asia has developed distinctive cultures and generated influential concepts and powerful ideals that have spread around the world. From the hearth areas of Harappan and Vedic civilization in the Plains, sophisticated cultures and powerful political empires spread across vast sections of the sub-continent. South Asia's resources and its geographic situation on sea lanes between Europe and the East Indies made it especially attractive to European imperial powers, and in modern times it has become a pivotal geopolitical region with an emergent industrial and high-tech sector and an important market for core-region products.

The Mauryan Empire (320-125 B.C.) was the first to establish rule across the greater part of South Asia. By 250 B.C. the emperor Asoka had established control over all but present-day Sri Lanka and the southern tip of India. Securing control had wrought such havoc and destruction,

however, that Asoka renounced armed conquest and adopted a policy of 'conquest by *dharma*', that is, through the example of spiritual rectitude and chivalrous obligations. *Dharma* was a key concept of Buddhist teachings, and the spread of Buddhist principles of vegetarianism, kindness to animals, non-acquisitiveness, humility, and non-violence are perhaps the most important legacy of Asoka's reign over South Asia.

After Asoka's death in 232 B.C., the Mauryan empire fell into decline and northern India soon succumbed to foreign invaders from Central Asia. After more than four centuries of division and political confusion, the Gupta Empire (A.D. 320-480) united northern India and came to control all but the northwestern hill country, the Peninsular Highlands, and Sri Lanka. The Gupta period is generally regarded as the classical period of Hindu civilization. It produced the decimal system of notation, the golden age of Sanskrit and Hindu art, and important contributions to science, medicine, and trade. It was the Mughal Empire (1526-1707), however, that brought the most comprehensive and extensive economic, political, and administrative unification of South Asia, providing a framework that was absorbed into the British Empire in the eighteenth century.

Mughal India

Toward the end of the fifteenth century, a clan of militant Turks from Persia (now Iran) moved east in an attempt to evade the control of Tamerlane's Mongol empire. These Turks were the Mughals. Led by Babur, they conquered Kabul, in what is now Afghanistan, in 1504. By 1605, Babur's grandson Akbar had established control over most of the Plains, and in the next century Mughal rule had been extended to all but Sri Lanka and the southern tip of India (**Figure 11.9**). Akbar's rule was an extraordinary time, his achievements driven by his personal desire to synthesize the best of the many traditions that fell within his domain while maintaining strict control. Traditional kingdoms and princely states were kept intact, but integrated within a highly organized administrative structure with an equitable taxation system and a new class of bureaucrats. Persian became the official language, but Akbar abolished the tax on non-Muslims that had been instituted by his grandfather. Mughal rule did not seek to impose Islam on indigenous populations, but Mughal commitment to the religious precepts of Islam, together with the equitable system of Mughal governance, gave great stature to Islam. Over time, Islam proved attractive to many, especially in the northwest (the Punjab) and the northeast (Bengal), both areas where Buddhism had previously been dominant. By 1700, mosques, daily calls to prayer, Muslim festivals, and Islamic law had become an indelible part of the social fabric of South Asian life.

Figure 11.9: map of Mughal India

Mughal rule was also characterized by a luxurious court and by extensive support for creativity in art, architecture, music, and literature. The most

famous legacy of Mughal architecture is the Taj Mahal (**Figure 11.10**), built by Akbar's grandson, Shah Jahan, as a mausoleum for his wife Mumtaz Mahal, who died in 1631 while giving birth to their fourteenth child. Spectacular architecture became a signature of Mughal rule, the landscape of the northern regions becoming punctuated not only with lavish mosques and palaces but also forts and citadels, towers and gardens (Figure 11.10). Most ambitious of all was Shahjahanabad (now known as Old Delhi), designed to supersede Agra as the imperial capital. Here was a whole new city, complete with processional thoroughfares, spacious squares, bazaars, caravanserais, shaded waterways, and massive stone walls that were pierced by 11 gates and guarded by 27 towers. Its rigid geometry has long since been blurred but some of the walls and gates remain, as do the imperial complex known as the Red Fort and, nearby, the great Jama Masjid, in its day the largest mosque in India.

Figure 11.10: photos of Mughal architecture

The last of the great Mughal emperors, Aurangzeb (1658-1707), provoked a series of rebellions and uprisings as a result of his anti-Hindu policies and his reinstatement of the tax on non-Muslims. At the same time, he had to deal with raids from the Marathas, a warlike people from the Konkan coast, and conduct military campaigns on several fronts. With his death in 1707, the Mughal empire collapsed, leaving South Asia open to the increasing interest and influence of European traders and colonists.

The Raj

European traders had been a regular presence along the coasts of South Asia long before the dissolution of the Mughal Empire. The Portuguese were the first, but in 1600 and 1602 respectively the East India Companies of London and the Netherlands were formed in a deliberate attempt to contest the Portuguese monopoly of the Indonesian spice trade. South Asia, en route between Europe and the East Indies, provided an attractive array of intermediate stops at which to trade for the calicos, chintzes, taffetas, brocades, batiks, and gingham of Gujarat, Bengal, Golconda, and the Tamil country. Soon, the Companies' armed ships had pushed aside the Portuguese and had begun to tap into the ancient trade between India's east coast ports and Southeast Asia. In the 1660s, the French established the *Compagnie des Indes* and joined in the scramble for trade.

By the 1690s, European trading companies had established a permanent presence in several ports, though they had no interest in establishing colonies or exerting any kind of political authority, even when the subcontinent fell into disarray at the end of Mughal rule. But European wars in the eighteenth century (in particular the War of the Austrian Succession, 1740-1748, and the Seven Years' War, 1756-1763) spilled over into an imperial contest in South Asia. Initially, Company armies fought over territory simply to protect their trading hinterlands. Backed by the powerful Royal Navy with its superior weapons technology, the British

East India Company was most successful. In 1773 the British government transformed the Company into an administrative agency, and soon afterwards, during the French Revolution and Napoleonic Wars, the British pushed ahead with aggressive imperialist policies in South Asia, using a mixture of force, bribery and political intrigue to gain control over more and more of the subcontinent, which by this time was riddled with political and religious disunity.

The focus of British imperialism now shifted beyond trade and territorial control to social reform and cultural imperialism. In a famous memo written by East India Company Supreme Council member Thomas Macaulay in 1853, British administrators were urged to create a special class of South Asian people who would be “Indian in blood and colour, but English in taste, in opinions, in morals, and in intellect.” One by one, the territories of native rulers were annexed or brought under British protection (**Figure 11.11**). Under the governor-generalship of Lord Dalhousie (1848-1856), there was a push to bring Western institutions and a modern industrial infrastructure to South Asia. Railroads, roads, bridges, and irrigation systems were built; restrictions were placed on slave-trading, *suttee* (a widow’s ritual suicide on her husband’s funeral pyre), and other traditional practices. Western educational curricula flourished in private colleges, and British-style public universities were established. All of this provoked a conservative and anti-colonial reaction, which came to a head in 1857, when an Indian Army unit rebelled because 85 of its soldiers were jailed for refusing to use ammunition greased with animal fat. The incident quickly spread into a year-long civil uprising—the ‘Indian Mutiny’—throughout the north-central region. Massacres were carried out on both sides, but the mutiny was eventually quelled and in 1858 the British Crown assumed direct control over India. In 1876, Queen Victoria was declared Empress of India.

Figure 11.11: map of British conquest of India

Thus emerged the **Raj**, British rule over South Asia, which by 1890 extended to the entire region with the exception of present-day Afghanistan and Nepal (Figure 11.11). The British brought plantation agriculture to South Asia, producing food crops for the British domestic population and commodity crops for British industry and British merchant traders. Among the most important plantation crops were coconuts, coffee, cotton, jute, rubber, and tea (see *Geographies of Indulgence, Desire, and Addiction: Tea*). The *Raj* also introduced industrial development and technology to South Asia, along with Western political ideas of social reform, democracy, freedom of expression, and the materialism that accompanies free markets in land, labor, and commerce. The *Raj* introduced the Western concept of national states to South Asia, something that was to be an explosive legacy at the

conclusion of the *Raj* in 1947, when Britain partitioned colonial India into separate independent national states.

Feature: Geographies of Indulgence, Desire, and Addiction: Tea

Partition

Grassroots political resistance to British imperial rule had been institutionalized through the Indian National Congress Party, formed in 1887 to promote greater freedom and democracy, not only from imperial rule but from the traditional and autocratic rule of hereditary maharajas (leaders of the princely states that were under British protection). The leader and inspirational figure of this movement was Mohandas Gandhi, whose vision of social justice and accountability and methods of non-violent protest (including boycotts and fasting) were inspired by the ancient Buddhist concept of *dharma*. Under Gandhi's leadership, the case for national independence became irrefutable and, soon after the conclusion of World War II, the British set about withdrawing from South Asia altogether.

In creating new, independent countries, Britain sought to follow the European model of building national states on the foundations of ethnicity, with particular emphasis on language and religion. As a result, it was decided to establish a separate Islamic country, called Pakistan ("Land of the Pure"). Administrative districts under direct British control that had a majority Muslim population were assigned to Pakistan, together with those princely states whose ruling maharajas wished to join Pakistan rather than India. The result was that Pakistan was created in two parts, East Pakistan and West Pakistan, one on each shoulder of the sub-continent, separated by 1600 kilometers (994 miles) of Indian territory.

In 1947, when the two national states were officially granted independence, millions of Hindus and Sikhs found themselves as minorities in Pakistan, while millions of Muslims felt threatened as a minority in India. Communal violence erupted across the sub-continent. In desperation, more than 12 million people fled across the new national boundaries—the largest refugee migration ever experienced in the world. As Hindus and Sikhs moved toward India and Muslims moved toward Pakistan in opposite directions between the two countries, many hundreds of thousands were senselessly killed. Hyderabad, in the Peninsular Highlands, which had a Hindu majority population but a Muslim leader who had volunteered Hyderabad to Pakistan, was quickly absorbed into India when riots broke out at the time of partition. In Kashmir, the situation was reversed: a Hindu maharaja had elected to join India, but Pakistani forces intervened on partition to protect the majority Muslim population.

Having withdrawn from the greater part of South Asia, the British granted independence to the island of Ceylon as a Commonwealth dominion in 1948. In 1949, Britain handed over to India its formal control over the external affairs of the kingdom of Bhutan; and in 1968 Britain granted independence to the Maldives. The *Raj* was finally over, but the legacy of partition remains an important dimension of the geography of South Asia in today's world.

South Asia in Today's World

In some ways, the states of South Asia are still adjusting to the partition of India and Pakistan in 1947. In Pakistan, divergent regional interests in East and West Pakistan quickly developed into regionalism, with East Pakistani leaders calling for secession. As a result, the country was split into two independent states in 1971: West Pakistan became Pakistan, and East Pakistan became Bangladesh. Meanwhile, neither India nor Pakistan could agree on the status of Kashmir, and the two countries briefly went to war over the region in 1948, in 1965, and again in 1971. Kashmir is still a flashpoint, with heavily armed bands of Muslim militants ambushing and kidnapping Hindu victims in the mountain valleys, and Indian and Pakistani troops facing off against one another with sporadic skirmishes across the no-man's-land of the Siachen glacier. China is also involved in the dispute over Kashmir, with three separate fragments of the region claimed by India but controlled by China. The national boundaries drawn up by the British on partition also led to contention between India and Bangladesh because of a dispute over the distribution of the waters of the River Ganga. This dispute was finally resolved in 1996 through goodwill on both sides.

At a broader scale, South Asia quickly assumed a significant level of importance in global geopolitics. South Asia's strategic location—between the Middle East and Southeast Asia, and adjacent to China—meant that it was of great interest to the superpowers during the Cold War. India took full advantage of this, playing both sides off against one another in seeking aid, while following a hybrid approach to domestic policy, with a democratic form of governance but a socialist-style approach to economic development. Post-colonial ties to Britain were maintained by Bangladesh, India, Pakistan, and Sri Lanka through the British Commonwealth, a loose association of countries tied together by patterns of trade, a shared language, and a similarity of institutions.

Afghanistan, on the other hand, had economic and cultural ties to the neighboring Islamic countries of Iran and Pakistan, and to the neighboring republics of Tajikistan and Turkmenistan in the Soviet Union. When a military coup established a dictatorship in Afghanistan in 1973, the country established close ties with the Soviet Union, and began to pursue a Soviet-style program of modernization and industrialization. This provoked resistance from a zealous group of fundamentalist Islamic

tribal leaders called the *mujahideen*, who were armed and trained by Pakistan. After several years of strife, the Soviet Union moved in to secure its geopolitical interests in the region. The Soviet military intervention was bloody but inconclusive. It lasted for a decade, ending just before the collapse of the Soviet Union in 1989. Indeed, the military failure of the Soviet Union in Afghanistan is widely held to have contributed to its eventual collapse.

Ironically, South Asia has become even more of a geopolitical hot spot since the end of the Cold War. The reason is that both India and Pakistan have developed the capability of nuclear weapons. With the territorial dispute over Kashmir still simmering, India announced in May 1998 that five nuclear tests had been carried out in the Thar Desert close to the Pakistani border. This triggered a fervent bout of national pride within India, but it prompted Pakistan to respond within a few weeks with its own show of strength by carrying out a series of nuclear tests. India and Pakistan, together with Israel, are among the few states in the world not to have signed the Nuclear Non-Proliferation Treaty that was formulated by the superpowers at the height of the Cold War in 1968.

On a more positive note, South Asia—and India, in particular—has come to play an increasingly important role within the world-system. India is the world's largest democracy, and has maintained stable parliamentary and local government through elections and rule of law since the adoption of its Constitution in 1950. India has also developed a significant industrial base. Although two-thirds of the labor force is still engaged in agriculture, half of the country's GDP is accounted for by an industrial sector that is the tenth-largest in the world, by value.

In 1992, after India lost its major trading partner with the collapse of the Soviet Union, India embarked on a series of reforms as a condition of a Structural Adjustment Program attached to a loan from the World Bank. Before these reforms, many key institutions—including banks, utilities, airlines, railways, radio, and television—were government owned and operated. High tariffs, restrictions on foreign ownership, high taxes and widespread corruption all kept foreign investors away and suppressed the energy of Indian entrepreneurs. Although more than three-quarters of the economy remained in the private sector, government bureaucracy had developed a complex system of permits, licenses, quotas, and permissions that further restricted economic vitality. The reforms have created a more open and entrepreneurial economy. Key institutions have been privatized, and foreign investment has been flowing into the country, helping to generate exceptionally high economic growth rates. The fact that India's middle class conducts business in English gives India an important comparative advantage in today's world economy.

India now has an affluent middle class estimated at some 200 million—a huge, well-educated, and sophisticated consumer market that has become part of the ‘fast’ world and an important agent of globalization. The rapid growth of India’s affluent middle classes serves not only to accentuate the contrasts within South Asia between the traditional and the modern, but also to highlight the desperate situation of an even larger group: the extremely poor. According to the United Nations Development Fund, some 53 percent of India’s population (that is, over half a billion people) live on less than a dollar a day—the World Bank’s definition of dire poverty. In fact, most of India’s poor (390 million of them) somehow exist with an income of a dollar a *week*.

The other countries of South Asia have not experienced the kind of economic boom enjoyed by India, though there have been attempts to foster regional economic integration. In 1985 the South Asian Association for Regional Cooperation (SAARC) was established. Although progress has been slow—mainly because of the friction between India and Pakistan—the member states did sign a South Asian Preferential Trade Agreement (SAPTA) in 1996, which established some modest mutual tariff concessions. Impatient with the pace of SAARC, India also set up two subregional cooperation groups: one with Nepal, Bhutan, and Bangladesh, and another with Sri Lanka and the Maldives. India has also signed a free-trade agreement with Sri Lanka, and has pursued wider avenues of economic and diplomatic cooperation, becoming a “dialogue partner” in the Association of Southeast Asian Nations (ASEAN) and lobbying for a seat as a permanent member of an expanded United Nations Security Council.

THE PEOPLES OF SOUTH ASIA

South Asia has the second largest and the fastest-growing population of all world regions. The total population of South Asia in 2000 stood at 1.35 billion, with India accounting for just over 1 billion. With overall growth rates in the region of 1.9 percent per year (compared to 1.0 percent per year in China), South Asia is headed for a population of 1.63 billion by 2010. **Figure 11.12** shows the distribution of population within South Asia. The first thing to note about this map is the very high density of population throughout most of the region. The overall density of population in India is 316 persons per square kilometer (819 per square mile), compared to 131 persons per square kilometer (338 per square mile) in China and 29 persons per square kilometer (75 per square mile) in the United States. In detail, patterns of population density reflect patterns of agricultural productivity. The combination of good soils with a humid climate or with extensive irrigation supports densities of more than 500 persons per square kilometer (1300 per square mile) in a belt extending from the upper Indus plains and the Ganga plains through

Bengal and the Assam Valley. Similar densities are found along much of the Coastal Fringe.

Figure 11.12: map of population distribution in S Asia

Urbanization

In comparison with other world regions, South Asia is still very much a land of villages. 65 percent of Pakistan's population and 73 percent of India's lives in rural settings; while in Afghanistan, Bangladesh, and Sri Lanka the rural population is around 80 percent and the tiny state of Bhutan is 94 percent rural. Rural-to-urban migration is shifting the balance toward towns and cities, however. This is largely a result of population pressure in rural areas, where natural increase has resulted in the amount of crop land per person having halved since 1960. In that year, there were just 9 cities of 1 million or more in South Asia, and only one of these had more than 5 million inhabitants. In 2000 there were 50 cities of 1 million or more, including 9 of 5 million or more. Mumbai, the largest metropolis in South Asia, grew from 4.1 million to 18.0 million between 1960 and 2000; Dhaka, in Bangladesh, grew from less than 650,000 to almost 11 million; and in Pakistan Karachi grew from 1.8 million to 11.8 million.

Population policies

Both the overall rate of population growth and the rate of urbanization are cause for concern in South Asia. With hundreds of millions already living in extreme poverty, high rates of natural increase, intensified in urban areas by high rates of in-migration, bring the prospect of serious food and water shortages, mass starvation, and food riots. As a result, each of the countries of the subcontinent has developed policies to try to limit population growth, with varying degrees of success. India was the first country to establish such policies, announcing an official family planning program as early as 1952. Little attention was paid to the program until the mid-1960s, when the government announced specific demographic targets and opened "camps" around the country for the mass insertion of interuterine devices (IUDs). The program soon failed, mainly because of negative public reaction to the poor training of health workers and unsanitary conditions in the camps.

Next came vasectomy camps. More than 10 million men were coerced into being sterilized in the 1970s in an "Emergency Drive" for family planning that saw all kinds of government administrators—from police to teachers and railway inspectors—given monthly quotas to recruit "volunteers" for vasectomy camps. Bureaucrats in some Indian states sought to reinforce the sterilization drive with harsh penalties. In Bihar state, for example, families with more than three children were denied public food rations; and in Uttar Pradesh teachers who refused to volunteer for sterilization were fined a month's salary. Not surprisingly, a popular backlash put an end to the vasectomy program. Today, the level of public mistrust remains high, the quality of family planning

services remains poor, and the demand for contraceptives is low. In 1998 the Indian government acknowledged the evidence of international experience—that female education is the single most influential determinant of lower birth rates—and finally abandoned targets for sterilization and contraception. India is now following Sri Lanka’s successful example of emphasizing women’s education and better infant and maternal care. While this policy shift seems likely to be successful in the long run, it means that India can expect population growth to continue for several decades before leveling off.

The South Asian Diaspora

The South Asian diaspora amounts to some 5 or 6 million people, most of them located in Europe, Africa, North America, and Southeast Asia (**Figure 11.13**). The origins of this diaspora can be traced to the abolition of slavery in the British Empire in 1833. The consequent demand for cheap labor in the plantations and on the railways of the British Empire was filled in part by emigrants from British India. In the mid-nineteenth century, thousands of Indians left for the plantations of Mauritius (in the Indian Ocean), East Africa, the West Indies, and South Africa. The stream of emigration intensified in the early twentieth century. By 1920 there were over a million South Asian immigrants in Burma, about 600,000 in Malaya, 300,000 in the West Indies, 200,000 in South Africa, and 100,000 in East Africa, while about 20,000 South Asians had made their way to Britain to work in factories and another 5000 or so had found their way to North America to work in railway building, in sawmills, and as farm workers.

Figure 11.13: map of S Asian diaspora

After the Second World War the pattern changed significantly. Independence in former British colonies led to the exclusion of South Asian immigrants, and both Burma and Uganda expelled most of their South Asian immigrants. But a new destination for South Asian emigrants opened up as the postwar economic recovery in Europe resulted in a severe shortage of labor on assembly lines and in transportation. Britain received over 1.5 million South Asian immigrants, whose permanent presence not only filled a gap in the labor force but has also served to enrich and diversify British urban culture. About 800,000 South Asians moved to North America, mainly to larger metropolitan areas where most found employment in service jobs. From the 1970s onwards there has also been a steady stream of South Asian immigrants to the oil-rich Gulf states, recruited on temporary visas to fill manual and skilled manual jobs.

South Asia has also experienced a ‘brain drain’ of significant proportions over the past several decades. Beginning with the emigration of physicians and scientists to Britain in the 1960s, the brain drain accelerated as South Asian students, having completed their studies in

British and American universities, stayed on to take better-paying jobs rather than return to South Asia. The idea of living abroad gained popularity among India's cosmopolitan and materialist middle classes as newspaper and television features publicized the global successes of Indian emigrants. Geographer Pamela Shurmer-Smith comments that ". . . it is sobering to know that virtually the whole of the youth of a social fraction in India is now craving to live outside its own country and that this obsession has been largely constructed by the power of the international media."² In the 1990s, the most distinctive aspect of the brain drain from South Asia was the emigration of computer scientists and software engineers from India to the United States and parts of Europe. By 2000, over 2000 of the 15,000 employees on Microsoft's Redmond campus were South Asian immigrants.

Cultural Traditions

Diversity has to be the key word to describe the cultural geography of South Asia. The whole subcontinent has deep cultural roots, but these roots are often tangled. Even where traditions have not been mixed or hybridized, there are significant differences in the degree to which traditional cultures have accommodated or resisted globalization. In Islamic Afghanistan and Pakistan, powerful fundamentalist movements have resisted globalization, attempting to re-create certain aspects of traditional culture as the basis of contemporary social order. In Afghanistan, for example, the ultra-orthodox Taliban rulers who have controlled 90 percent of the country since 1996 have imposed a harsh version of Islamic law that follows a literal interpretation of the Muslim holy book, The Koran. Under Taliban laws, murderers are publicly executed by the relatives of their victims. Adulterers are stoned to death and the limbs of thieves are amputated. In 1999 a woman accused of murdering her husband was shot to death in a stadium packed with thousands of men and women, many of whom had brought their children along to watch. Lesser crimes are punished by public beatings. The Taliban's long list of rules include not wearing shorts or short-sleeve shirts in public—even sportsmen are required to wear the traditional baggy pants and long tunic. In 2000, Taliban religious police interrupted a soccer game in southern Afghan city of Kandahar to arrest 12 visiting Pakistani players for wearing shorts. The offenders were released after their heads had been shaved in punishment.

In contrast, in India, where democracy has successfully taken root after its introduction through British colonial governance in the nineteenth century, contemporary culture is open to the economic and cultural flows of globalization. The result is that traditional cultures, still strong, are juxtaposed vividly against modern global culture. For example, the tradition of parents seeking marriage partners for their children through newspaper advertisements continues relatively undiminished; but those

² Pamela Shurmer-Smith, *India. Globalization and Change*. London: Arnold, 2000, p. 171.

same advertisements often provide an e-mail address or even a website for replies.

Religion

Tradition itself is very important in South Asian cultures. Many different indigenous cultural threads have evolved into a variety of regional patterns. Over the centuries much has been added, while little appears to have been lost. As a result the regional cultural geography of South Asia is extremely complex. At face value, one of the most important bases for regional differences in cultural traditions is religion. The two most important religions in South Asia are Hinduism and Islam. Hinduism is the dominant religion in Nepal (where about 90 percent of the population are Hindu) and India (about 80 percent). Islam is dominant in Afghanistan (99 percent), Bangladesh (more than 80 percent), the Maldives (100 percent), and Pakistan (about 80 percent). Buddhism, though it originated in South Asia, is followed by only about two percent of the subcontinent's population. It is the predominant religion in Bhutan and Sri Lanka, and there is an enclave of Buddhism in Ladakh, the section of Kashmir closest to China. Jains are another distinctive religious group whose origins are in the subcontinent. Jains, like Buddhists, trace their faith to a religious leader who lived in northern India in the sixth century B.C.. Sikhs, whose religion was founded by Guru Nanak in the sixteenth century A.D., are concentrated in the Punjab, which straddles the India-Pakistan border (**Figure 11.14**).

Figure 11.14: map of religions in S Asia

The broad regional patterns reflected in Figure 11.14 are much more complex when considered in any detail. Underlying much of this complexity is the fact that Hinduism is not a single organized religion with one sacred text or doctrine; it has no unifying organizational structure, worship is not congregational, and there is no agreement as to the nature of the divinity. Rather, Hinduism exists in different forms in different communities as a combination of "Great Traditions" and "Little Traditions." The Great Traditions derive from the *Rg Veda*, a collection of 1028 Vedic poems that date from the tenth century B.C.. One of the key aspects of this Great Tradition is the belief that human lives represent an episode of cosmic existence, followed after death by the transmigration of the soul to some other form of life. The "Little Traditions" of Hinduism consist of the many local gods, beliefs, rituals, and festivals, and the sacred spaces that are associated with them (see *Geography Matters: Hinduism's Sacred Spaces*).

Geography Matters: Hinduism's Sacred Spaces

The complexity of Hindu traditions within India is compounded by the existence of a sizeable minority population who adhere to other religions. The most important of these is Islam. Although several million Muslims migrated from India to Pakistan at the time of Partition, more than 112

million still reside in India today. There are also almost 20 million Christians in India. According to legend, Christianity was first introduced to South Asia by the Apostle Thomas during the first century. It was certainly known to silk traders passing through northwest Pakistan to China during the second century; but the small Christian community did not increase significantly until the arrival of colonial powers. The Portuguese brought Roman Catholicism to the west coast of India in the late 1400s, and Protestant missions, under the protection of the British East India Company, began to work their way through subcontinent in the 1800s. Christianity is most widespread in the state of Kerala, in southwest India, where nearly one-third of the population is Christian.

Language

A great diversity of languages is spoken in South Asia. In India alone there are some 1600 different languages, about 400 of which are spoken by 200,000 or more people. There is, however, a broad regional grouping of four major language families. The Indo-European family of languages, introduced by the Aryan herdsmen who migrated from Central Asia between 1500 and 500 B.C., is prevalent in the northern plains region, Sri Lanka, and the Maldives. This language family includes Hindi, Bengali, Punjabi, Bihari, and Urdu. Munda languages are spoken among the tribal hill peoples who still inhabit the remoter hill regions of peninsular India. Dravidian languages (which include Tamil, Telegu, Kanarese, and Malayalam) are spoken in southern India and the northern part of Sri Lanka. Finally, Tibeto-Burmese languages are scattered across the Himalayan region.

In India, the boundaries of many of the country's constituent states were established after Partition on the basis of language. Overall, no single language is spoken or understood by more than 40 percent of the people. There have been efforts since India became independent to establish Hindi, the most prevalent language, as the national language, but this has been resisted by many of the states within India, whose political identity is now closely aligned with a different language. In terms of popular media and literature, there is a thriving Hindi and regional language press, while film and television are dominated by Hindi and Tamil, with some Telegu programming.

English, spoken by fewer than 6 percent of the people, serves as the link language between India's states and regions. As in other former British colonies in South Asia, English is the language of higher education, the professions, and national business and government. Without English, there is little opportunity for economic or social mobility. Most children who do attend school are taught only their local language, and so are inevitably restricted in their prospects. A guard, sweeper, cook or driver who speaks only Hindi or Urdu will likely do the same work all his life. On the other hand those who can speak English—by definition the upper-

middle classes—are able to practice their profession or do business in any region of their country or in most parts of the world. English-language South Asian literature has produced many excellent novels. Among the most notable authors are Anita Desai, V.S. Naipaul, Arundhati Roy, and Salman Rushdie.

Caste

A very important—and often misunderstood—aspect of India’s cultural traditions is that of **caste**. Caste is a system of kinship groupings, or *jati*, that are reinforced by language, region, and occupation. There are several thousand separate *jati* in India, most of them confined to a single linguistic region. Many *jati* are identified by a traditional occupation, from which each derives its name: *jat* (farmer), for example, or *mali* (gardener), or *kumbhar* (potter). Modern occupations such as assembly-line operators, clerks, and computer programmers, of course, do not have a traditional *jati*, but that does not mean that people doing these jobs cease to be members of the *jati* into which they were born. People within the same *jati* tend to sustain accepted norms of behavior, dress, and diet. They are also endogamous, which means that families are expected to find marriage partners for their children among other members of the *jati*.

In each village or region, *jati* exist within a locally-understood social hierarchy—the caste system—that determines the accepted norms of interaction between members of different *jati*. In a normal village caste system, individuals will typically interact on a daily basis with others from about 20 different *jati*. Each individual person’s *jati* is fixed by birth, but the position of the *jati* within the local caste system is not. Nevertheless, the broad structure of caste systems always places certain groups at the top and others at the bottom. Caste systems tend to hold in high esteem those who are religious and who are especially learned. Those who pursue wealth or hold political power are typically less well regarded; but those who perform menial tasks are accorded least status of all. Priestly *jatis*—known as brahmins—are always at the very top of the caste hierarchy. Brahmins are expected to lead ascetic lives and revere learning.

At the opposite end of all caste systems are the so-called “untouchables”—*jatis* whose members deal with human waste and dead animals. Mohandas Gandhi, the inspirational leader of India before Independence, crusaded to dissociate these *jatis* from the demeaning term “untouchable.” Gandhi called them Harijans, meaning “children of God”, but today most people in these *jatis* prefer to be referred to as Dalits, meaning “the oppressed,” and the Indian government refers to them as “Scheduled Castes.” Traditionally, the Dalits were forced to live outside the main community because they were deemed by the brahmins to be capable of contaminating food and water by their touch. They were denied access to water wells used by other *jatis*, refused education,

banned from temples, and subject to violence and abuse. Although these practices were outlawed by India's constitution in 1950, discrimination and violence against Dalits is still routine in many rural areas.

Contemporary Culture

Contemporary culture provides many sharp contrasts with the deep-rooted traditions of South Asia, although there are places and regions (Afghanistan, in Bhutan, and many of the more remote rural areas of the subcontinent) where contemporary culture finds few expressions. The growth of a large and affluent middle class in India since the country's 1992 economic reforms has brought the sights and sounds of Western-style materialism to India's larger towns and cities: fast-food outlets, ATM machines, name-brand leisure wear, consumer appliances, video games, and luxury cars. Cricket, a legacy of British colonialism, has become the pre-eminent sport in both India and Pakistan (**Figure 11.15**). Long popular, the new affluence of the middle classes has taken cricket beyond a popular pastime with a passionate following to a sport that generates huge sums in betting and supports a star system to rival that of baseball in the United States.

Figure 11.15: photo of India/Pakistan test match

Cable television arrived in India in the early 1990s, at about the same time that the government initiated its economic reforms. After years without access to popular Western culture, urban middle-class Indians could now watch, via Hong-Kong-based Star TV, programming that included MTV, Baywatch, and Oprah. The expectation among many was that such programming would quickly displace Indian culture, at least among the young and the middle-classes. The sheer size and market power of India's middle classes, however, has meant that this scenario of an externally-imposed global culture has not come about. Rather, Indian television and cable companies quickly began to produce films, musical shows, sitcoms and soap operas in Hindi, Tamil, and some other local languages. The only Hollywood made programs that earn reasonable ratings are those that are dubbed, while the domestic Indian television and movie industry has quickly grown to major proportions (see *Sense of Place: Bollywood*).

Sense-of-Place: Bollywood

Just as the impact of globalization has been mediated and transformed by India's television and movie industry, other aspects of economic and cultural globalization have found mixed expression amid South Asia's traditional cultural patterns. Thus, for example, it is still common to see people dressed in traditional clothing—saris for women; dhotis (loin cloths) for Hindu men; turbans for Sikh men, and so on—it is often in combination with Nike or Adidas sneakers or some other non-traditional apparel. Similarly, although there has been a proliferation of fast food outlets such as Dominos Pizza and vending machines selling soft drinks

such as Pepsi and Coca-Cola, Western-style food retailing has little appeal to affluent households, most of whom still live in neighborhoods where street vendors sell high-quality fruits, vegetables, dairy products and other basics door-to-door. Appliances such as washing machines, dishwashers, and power tools are also less prevalent than might be expected among South Asia's affluent middle classes, simply because of the millions of people available to undertake domestic labor at very low wages.

Meanwhile, as in other world regions, the cultural shifts involved in globalization flow out as well as in. South Asian mysticism, yoga, and meditation found their way into Western popular culture during the "flower power" era of the 1960s after the Beatles had visited India. South Asian cuisine, with its spicy curries and unleavened breads, found its way into Britain at about the same time and has since become an established item in restaurants and supermarkets in much of Europe and North America. Meanwhile, South Asian methods of non-violent protest such as boycotts and fasting, inspired by the ancient Buddhist concept of *dharma* and developed in the 20th century by Gandhi, have spread all around the world. Contemporary South Asian literature from writers such as Anita Desai, Vikram Seth, Arundhati Roy, and Salman Rushdie has found a global readership. South Asian art and music has been less influential, though Indian singers and musicians are well represented in the "international music" sections of Western record stores and some artists, such as Sheila Chandra, have crossed over into a broader international audience.

Ethnicity and Nationalism

The Western concept of nation-states did not transfer very well to South Asia, where tremendous cultural diversity means that national political boundaries tend to encompass diverse groups in terms of ethnicity, language, religion, and cultural identity, while at the same time dividing some groups, leaving some in one country and some in another. The Partition of British India in 1947 demonstrated this in relation to Hindus and Muslims, as did the subsequent secession of Bangladesh from Pakistan in relation to Bengali ethnic and cultural identity. But South Asia's cultural diversity, framed within national boundaries that have been relatively recently imposed, has also given rise to several other cases of regionalism, separatism, and irredentism (**Figure 11.16**) that are a continuing basis for political tension, social unrest, and, occasionally, outright rioting or armed conflict.

Figure 11.16: map of regionalism (see Shurmer-Smith)

One of the most troubled areas is the Punjab, a region that was divided in two by Partition. In the 1980s, the Sikh population in the Indian portion of the Punjab developed a nationalist movement, demanding a separate state of Khalistan, under the leadership of a Sikh holy man called

Bhindranwale. A series of terrorist attacks and kidnappings led to the occupation, in 1984, of the Golden Temple in Amritsar, the most sacred shrine of the Sikh community. In response, Indian troops stormed the Golden Temple, killing Bhindranwale and many of his supporters. This, in turn, led to the assassination of the Indian Prime Minister, Indira Gandhi, by two of her bodyguards who were Sikh. Outraged Hindus immediately turned on Sikh communities throughout northeast India, killing over 3000 in riots and vengeful attacks. Since the mid 1990s, levels of violence in the Punjab have diminished, though ethnic tensions still simmer.

Neighboring Kashmir, whose predominantly Muslim population found itself isolated as a minority within India at Partition (see above, p. 000), has three times been the cause of war between India and Pakistan (in 1948, in 1965, and 1971). Kashmir remains a contentious and complex arena. Kashmir's northern border is not an accepted international border—it is a 'line of control' established after the 1971 war. Pakistan controls the northwestern portion of what India claims as Kashmir; and China controls the northeastern corner. In 1986, there began a renewed campaign of insurgency by Muslim separatists in the Indian-controlled portion of Kashmir. Since 1989, more than 30,000 people—separatist guerillas, policemen, and Indian army troops, and civilians—have died in a guerilla campaign aimed at the incorporation of Kashmir into Pakistan as part of a larger Islamic state. The Pakistani-backed campaign culminated in Pakistan sending its own forces across the border into the Kargil Peaks district in 1999. Pakistani troops were withdrawn after India launched a full-scale military offensive to evict them and U. S. President Clinton put pressure on the Pakistani government, which subsequently fell to a military coup d'etat, the fourth such coup since Pakistan became independent in 1947.

Within Pakistan, meanwhile, ethnic tensions have developed around linguistic differences. Most indigenous Pakistanis speak Punjabi or Sindhi, but families who migrated from India at the time of Partition—known in Pakistan as *muhajirs*—have tended to retain Urdu as their language. In order to protect and maintain their distinctive identity, the *muhajirs* formed a political party, the Mohajir Quami Movement. This attracted a great deal of resentment among indigenous Pakistanis, and in 1995 over 1800 people were killed in riots in Karachi. In 1998, continuing tensions led the government to the imposition of martial law and to the exile, in London, of the leadership of the Mohajir Quami Movement.

In the small Himalayan state of Bhutan there have been tensions between the indigenous population and Nepali immigrants, whose number has grown to more than one-fourth of the Bhutanese population. The government of Bhutan has formally adopted the traditional language, Dzongkha, as the official language, mandated the wearing of Bhutanese

national dress for formal occasions, and restricted Bhutanese citizenship to Nepalis who could prove residency in the country since 1958. A census undertaken in 1988 in order to enforce this residency law led to civil disorder within Bhutan and to tens of thousands of Nepali refugees who made their way to refugee camps set up by the United Nations in eastern Nepal.

Sri Lanka's ethnic tensions involve both language and religion. The majority population is Buddhist and Sinhalese-speaking. In the northeastern part of the country, however, the majority population is an enclave of Tamil-speaking and Hindu population that represents about 17 percent of Sri Lanka's total population. Ever since independence from Britain in 1948, the Sri Lankan government has pursued a nationalistic posture that has resulted in the oppression of this Tamil population. The first casualties were 600,000 descendants of Tamil plantation workers who had been brought to Ceylon (as it was then called) from southern India. The deportation of these "plantation Tamils" led to the formation in the 1980s of a militant and bloody Tamil separatist movement that crystallized in 1983 into the "Tamil Tigers"—the Liberation Tigers for Tamil Eelam. In the early 1990s, over a million Tamil villagers were displaced by fighting between the Tamil Tigers and the Sri Lankan army, to become refugees in their own land. Since the mid-1990s, the level of conflict has diminished, but Sinhalese and Tamil nationalism continues to result in sporadic terrorist attacks and outbreaks of violence.

India's ethnic tensions, in addition to those in the Punjab and Kashmir, include those related to separatist movements in Jharkand (an alliance of tribal peoples in southern Bihar, western Orissa, and eastern Madhya Pradesh), Vidarbha and Telegana (involving tribal peoples of the Peninsular Highlands), and Assam, where the Assamese-speaking indigenous population has long been resentful of the Bengali administrators and business elite (Figure 11.16). These tensions have provoked a strong reaction within India's majority Hindu population. A nationalistic form of Hinduism, *Hindutva*, emerged in the late 1980s, fanned by an epic television series (over 100 30-minute episodes) based on the classic Hindu story, the *Ramayana*. This coincided with the emergence of a new political party committed to Hindu nationalism, the Bharatiya Janata Party, or BJP. The BJP quickly attracted popular support, which became focused on the BJP leadership's campaign to build a temple to Rama (recognized by Hindus as an incarnation of the supreme god Vishnu) on the site of his legendary birthplace in the small town of Ayodhya (population 70,000), in Uttar Pradesh. The campaign was acutely sensitive because the site was already occupied by the Babri Masjid, a mosque. In 1992, a crowd estimated at almost three-quarters of a million gathered in Ayodhya and, despite the presence of 15,000 government troops, succeeded in scaling the mosque and demolishing it. The incident unleashed ethnic tensions and latent feelings of fear and

hatred that erupted into a spasm of communal riots, killings, and looting throughout India. After this, the BJP moderated somewhat its stance on *Hindutva*, and in 1999 became the key partner in a 24-party coalition that came to power after national elections. The new prime minister was Atal Vajpayee of the BJP.

REGIONAL CHANGE AND INTERDEPENDENCE

South Asia is at a critical juncture in its development. On the one hand, it has considerable potential in its human and natural resource base and emerging new economy. During the 1990s, the region was able to sustain a 3 percent annual growth rate when other regions such as Africa and Latin America were posting negative growth rates. Food production in South Asia has shown a significant increase and the region as a whole is now a net exporter of food (which is not to say that there are no food shortages). Most South Asian countries are opening up their economies, introducing financial discipline, and attempting to build up technological capability that will permit them to compete in the global economic system. Meanwhile, there is a one billion strong domestic market waiting to be fully developed. India's middle class, at 200 million or more, is the largest in the world and a major consumer market in its own right. More important, perhaps, is India's strong tradition of democracy. India, with a billion people, is the world's largest democracy and a critical element in the region's overall stability.

On the other hand, the region is facing a potentially deep and multifaceted crisis that could well undermine this potential. In marked contrast to India, other countries have struggled to sustain democracy, sometimes failing altogether. Throughout South Asia, poverty threatens to swamp the gains of economic development, while extreme inequality threatens to undermine political stability. Meanwhile, both poverty and economic development pose a serious threat to South Asia's resource base and its fragile ecological system.

Democracy and Political Freedom

Four of the South Asian states that were formerly part of British India—Bangladesh, India, Nepal, and Pakistan—have constitutions that use the British parliamentary form of government, led by a prime minister who is elected by legislators who are themselves voted into office to represent local electorates. Sri Lanka replaced its parliamentary system in 1978 with a presidential system similar to that of the United States.

In India, every adult, male and female, has the right to vote, and there has developed a deep-seated sense of democracy that extends to the legislative assemblies of the country's 31 states and to local governments within each state (**Figure 11.17**). For the most part, India's democratic framework has worked extraordinarily well, given the sheer size and diversity of the country. In addition to the machinery of democratic

government, India has a free and lively press and an independent judiciary. There was a brief period between 1975 and 1977 when the country's democratic machinery and civil rights were suspended by prime minister Indira Gandhi in order to protect herself from a legal challenge to her office. India's democracy has also been flawed (as elsewhere in South Asia) by endemic corruption. Companies have become used to buying favors in order to do business with politicians and bureaucrats; while citizens have become used to having to pay "facilitation fees" to the police and petty officials to get access to services. Much of this corruption was generated by the complex system of permits, licenses, and permissions that developed during India's socialist political economy, between 1947 and 1992. The hope is that India's market reforms of the 1990s will not only promote economic vitality but also reduce the need and opportunities for bribery. Nevertheless, a national poll in 1997 found that people still regard corruption as the greatest national evil, far above unemployment or poverty.

Figure 11.17 Photo of voting/election in India

Bangladesh and Pakistan have fared less well, each having fallen under military rule: Bangladesh between 1975 and 1989, and Pakistan between 1958 and 1969, 1969 and 1971, 1977 and 1988, and from 1999 until the time of writing. In the Maldives and Bhutan, traditional hierarchical systems are only slowly evolving toward democracy. Afghanistan introduced democratic elections in the 1920s, but democracy and political freedoms were resisted by the regional warlords who had traditionally enjoyed autocratic rule. In the 1970s the same traditional forces resisted the military dictatorship that established close ties with the Soviet Union, eventually prompting a Soviet invasion (in 1979) that led to a decade of fierce guerilla fighting. With the collapse of the Soviet empire in 1989, there was a period of intense infighting among rival groups within Afghanistan, with a new, militant Islamic revolutionary force, the Taliban, gaining control over most of the country by 1996. As we have seen, the Taliban's regime has reduced Afghanistan to a state of oppressive religious autocracy.

India's Economic Transition

Since India's market reforms of the early 1990s, the country's economic development has triggered an important transformation that has important implications for regional change and interdependence within South Asia. Since 1992, India's government has built on its structural economic reforms, bringing in a series of second-phase market reforms that have made it easier for free-enterprise capitalism to flourish. India's manufacturing productivity has increased and the amount of foreign direct investment flowing into the country has increased dramatically: from US\$76 million in 1991 to \$1.61 billion in 1999. The results of this investment are most visible among India's newly-affluent middle class. Market reforms have meanwhile triggered an associated cultural change:

flaunting success is no longer frowned upon, and so India's expanding middle class is increasingly unabashed about its cars, powerbooks, mobile phones, and holidays in Phuket and Singapore.

But breaking with socialist principles of centrally planned development and social and regional equality has unleashed the spatially uneven economic development processes of capitalism. The growth and the wealth has not been evenly distributed throughout India. There has been dramatic growth in certain industries and certain places and regions, while elsewhere there has been disinvestment and recession: the classic 'creative destruction' of capitalism. One of the most dramatic examples of regional growth is that of the software industry in Bangalore and Hyderabad (see *Sense of Place: India's software corridor*). More generally, the growth has been centered in larger metropolitan areas and pre-existing industrial centers: again following classic principles of capitalist economic development. Places and regions with an initial advantage in terms of factories, skilled labor, specialized business services and affluent markets can attract more investment, faster, through 'cumulative causation', the self-reinforcing spiral of regional growth. The corollary is that places and regions with a weak industrial base, with a weak or obsolescent infrastructure, and with an unskilled or poorly-educated workforce tend to experience a downward spiral of recession. In India today, it is the remoter rural regions that are experiencing most acutely the negative consequences of the country's economic reforms.

Sense of Place: India's software corridor

There have also been less predictable consequences of the liberalization of India's economy. As geographer Pamela Shurmer-Smith has noted, the lifting of export controls has enabled farmers with access to large amounts of capital to reorganize their production toward lucrative overseas markets, with the result that domestic consumers have to pay more for traditional staples. Thus, for example, many farmers are switching from growing grains for local consumption to cash crops like cotton and tobacco, while others are turning to the specialist cultivation of flowers and strawberries to be shipped to newly-affluent urbanites or to be air-freighted abroad. Now that a global market has become aware of high-quality local specialties such as the fragrant Basmati rice of the Himalayan foothills and the short-season Alphonso mangoes of Maharashtra, their price within India has put them in the luxury class, out of reach of many of the consumers who have traditionally regarded them as occasional treats.

Poverty and Inequality

Against the background of acute and chronic poverty that have been ever-present in the landscapes of South Asia, the material wealth and Western lifestyles of the growing middle-classes serve to highlight the extreme inequality that is also characteristic of the subcontinent. Official

statistics reveal that hundreds of millions live not just in poverty, but in ignorance and destitution (**Table 11.1**). If anything, poverty and inequality are increasing.

Table 11.1 Indicators of poverty, by country

In rural South Asia, grinding poverty is the norm. Illiteracy is commonplace, and even the most basic services and amenities are lacking. Life expectancy is low, and hunger and malnutrition are constant facts of life. Cow dung is used for fuel, and most villagers brush their teeth with sticks from neem trees (which have a natural antibacterial sap). In urban areas, poverty is compounded by crowding and insanitary conditions. In South Asia's largest cities, a third or more of the population lives in slums and squatter settlements, and hundreds of thousands are homeless. In Kolkata alone, it is estimated that more than 700,000 people sleep on the streets each night (**Figure 11.18**). Access to clean drinking water is limited, and most poor households do not have access to a latrine of any kind.

Figure 11.18 photo of Kolkata's sidewalk dwellers

The worst concentrations of poverty are overcrowded, lack adequate sanitation, have shockingly high levels of ill health and infant mortality, and where social pathologies are at their worst. Consider, for example, the squatter settlement of Chheetpur in the city of Allahabad, India. The settlement's site is subject to flooding in the rainy season and a lack of drainage means stagnant pools for much of the year. Two standpipes (outdoor taps) serve the entire population of 500, and there is no public provision for sanitation or the removal of household wastes. In this community, most people have food intakes of less than the recommended minimum of 1500 calories a day; 90 percent of all infants and children under four have less than the minimum calories needed for a healthy diet. More than half of the children and almost half the adults have intestinal worm infections. Infant and child mortality is high—though nobody knows just how high—with malaria, tetanus, diarrhea, dysentery, and cholera as the principal causes of death among under-fives.

A great deal of this poverty results from the lack of employment opportunities in cities that are swamped with people. In order to survive, people who cannot find regularly paid work must resort to various ways of gleaning a living. Some of these ways are imaginative, some desperate, some pathetic. Examples include street vending, shoe-shining, craft work, and street-corner repairs, to scavenging on garbage dumps (**Figure 11.19**). This informal economic sector consists of a broad range of activities that represent an important coping mechanism. For too many, however, coping means resorting to begging, crime, or prostitution. More than a half a billion people in South Asia must feed, clothe, and house themselves entirely from informal sector occupations.

Figure 11.19 photos of informal-sector occupations

Women and Children

Among South Asia's poor, women bear the greatest burden and the most suffering. South Asian societies are intensely patriarchal, though the form that patriarchy takes varies by region and class. The common denominator among the poor throughout South Asia is that women not only have the constant responsibilities of motherhood and domestic chores but also have to work long hours in informal-sector occupations (see *Day in the Life: Bibi Gul*). In many poor communities, 90 percent of all production is in the informal sector, more than half of which is the result of women's efforts. In addition, women's property rights are curtailed, their public behavior is restricted, and their opportunities for education and participation in the waged labor force are severely limited. Women's subservience to men is deeply ingrained within South Asian cultures, and is manifest most clearly in the cultural practices attached to family life, such as the custom of providing a dowry to daughters at marriage. The preference for male children is reflected in the widespread (but illegal) practice of selective abortion and female infanticide. Within marriages, many (but by no means all) poor women are routinely neglected and maltreated. More extreme are the cases—usually reported only when involving middle-class families—of 'bride burning', whereby a husband or mother-in-law fakes the accidental death (kitchen fires are favored) or suicide of a bride whose family had disappointed in their dowry payments. Several thousand such deaths are reported in India each year, and this is almost certainly only a fraction of the real incidence.

Day in the Life: Bibi Gul

The picture is not entirely negative, however, and one of the most significant developments has been the emergence of women's self-help movements. Perhaps the best-known of these is the Grameen Bank, a grassroots organization formed to provide small loans to the rural poor in Bangladesh (see *Geography Matters: the Grameen Bank*). In India, the Self-Employed Women's Association (SEWA) has made a major contribution to building self-confidence and self-reliance among poor working women by mobilizing and organizing them. SEWA was formed in 1972 in Ahmedabad in the State of Gujarat. It evolved from a trade union of textile workers but, unlike conventional trade unions, SEWA organizes women workers in the informal sector: vegetable vendors, rag and paper pickers, bamboo workers, cart-pullers and garment workers. SEWA has given its members a degree of independence from middlemen and, consequently, an invaluable sense of independence. Following the example of the Grameen Bank in Bangladesh, SEWA has also established its own bank in order to finance income-generating projects for small groups of women, helping them to meet the emergencies that would otherwise drive them to money-lenders. A third example of women's self-help movements comes from Rajasthan, in India, where the Women's Development Programme, sponsored by the government, organizes rural

women as volunteers to counter the deep-seated patriarchy of the region. Community-based groups, coordinated by these volunteers, disseminate information on women's legal rights, health and literacy programs, and income-generating schemes, and occasionally organize campaigns over particularly extreme injustices to individual women.

Geography Matters: The Grameen Bank

Children in impoverished settings are even more vulnerable than women. Throughout South Asia, the informal labor force includes children (**Figure 11.20**). In environments of extreme poverty, every family member must contribute something, and so children are expected to do their share. Industries in the formal sector often take advantage of this situation. Many firms farm out their production under subcontracting schemes that are based not in factories but in home settings that use child workers. In these settings, labor standards are nearly impossible to enforce.

Figure 11.20 photo of child labor

The International Labour Office has documented³ the extensive use of child labor in South Asia, showing that many of the children involved in a great variety of work—tending animals, carpet-weaving, stitching soccer balls, making bricks, handling chemical dyes, mixing the chemicals for matches and fireworks, sewing, and sorting refuse—are less than 10 years old, most of them working at least 6 and as much as 12 hours a day. A particularly cruel type of exploitation of child labor is **bonded labor**. This kind of bondage occurs when a person needing a loan but with no security to offer pledges their labor, or that of their children, as security for the loan. In addition, there are street children, some of whom do casual work and beg but return to their families at night, while others live on the street and have no effective families. UNICEF has estimated that there are more than 11 million of these street children in India. Finally, perhaps the cruelest and most reprehensible exploitation of children is as sex workers. In parts of India—notably in the small towns of rural regions—there are prostitute *jati*, where the cycle of recruitment into sex work is an unavoidable legacy from mother to daughter. Meanwhile, in the red light districts of every large city there are hundreds of young bonded or kidnapped rural girls who have been sold into brothels.

Environmental Issues

As we have seen, South Asia's environmental history has left a legacy of serious environmental issues that include deforestation, water shortages, and air and water pollution (see above, p. 000). Given the acute problems of population pressure and poverty in South Asia, it is not surprising that concepts of sustainable development and social responsibility for environmental protection are very weakly developed. Each country in the region has a set of environmental laws and regulations, but they are

³ International Labour Office, *Child Labour: Targeting the Intolerable*. Geneva: ILO, 1996.

routinely flouted and only weakly enforced. Corruption is one factor that contributes to this, but another reason is that governments simply do not have the institutional apparatus or the funds to enforce environmental laws. More important still, perhaps, is the short-term perspective that derives from the high priority given to economic development: enforcing environmental laws would wipe out a significant part of South Asian countries' competitive advantage in world markets.

The long-term costs of this situation are certain to be measured in serious environmental degradation and loss of biodiversity. Meanwhile, the short-term costs are significant. A 1998 World Bank study⁴ estimated that India loses \$13.8 billion every year—equivalent to 6.4 per cent of the country's gross domestic product (GDP)—as a result of environmental degradation. The largest share of this cost—\$8.3 billion—is associated with health impacts resulting from water pollution. The health impacts and consequent loss of productivity of urban air pollution account for an estimated loss of \$2.1 billion. Soil degradation and the consequent loss of agricultural output is estimated to cost \$2.4 billion a year; and rangeland degradation, resulting in a loss of livestock carrying capacity, costs \$417 million each year. Deforestation is estimated to cost \$244 million annually.

Such estimates do not always take account of the disastrous effects of environmental problems on peoples' lives or, indeed, of the raw cost in human lives of disasters such as flooding or the release of untreated toxic waste. One of the most horrific disasters of all time took place in Bhopal, India, in 1984, when lethal methyl isocyanate leaked overnight from a Union Carbide plant, killing over 6000 people in nearby neighborhoods and permanently damaging the health of tens of thousands more. The exact causes and responsibility for the event have still not been conclusively settled, though the Bhopal disaster has been interpreted by many as being emblematic of the potentially disastrous effects of lax attitudes toward environmental planning and regulation. Most of the time, such laxity does not involve loss of human life. Nevertheless, the results can be calamitous both to communities and to the environment.

Take, for example, the consequences of poor environmental planning in the case of the dams and irrigation schemes along the Porali River in Pakistan. The depth and spread of the river's delta, with its extensive mangrove swamps, made it a haven and breeding ground for fish. For centuries, local villages had earned their living from this natural bonanza. But the river and its delta began to silt up due to a combination of upstream dams and badly applied irrigation techniques, all installed as part of an economic development program. In particular, the huge Tarbela Dam (which is itself suffering from sedimentation because of deforestation in the mountains) has been a major cause of silting by

⁴ World Bank, The Cost of Environmental Degradation in India. Washington, D.C.: World Bank, 1998.

preventing the otherwise natural scouring out of mud during the rainy season. The result is that the rich ecology of the mangrove forests of the coastal belt of Sindh and Balochistan is dwindling, and the future of the coastal villages is seriously threatened. As fish habitat has shrunk and stocks fallen, fishermen have switched from traditional techniques—catching large specimens with long lines—to using fine mesh-nets. This quickly depleted stocks still further, reducing the average catch to small immature fish. Affluent fishing communities that used to pay their taxes in gold now find it a challenge to feed themselves.

The most dramatic case of poor environmental planning came to light in 2000, when it was discovered that millions of tube wells are drawing arsenic-contaminated water. The tube wells were installed throughout the country as a result of a campaign in the 1970s by Unicef, the United Nations children's fund. The purpose of the wells was to provide drinking water free of the bacterial contamination of the surface water that was killing more than 250,000 children each year in Bangladesh. Unfortunately, the well water was never tested for arsenic contamination, which occurs naturally in the ground water, and for many years the well water was believed to be completely safe. But by the 1990s, high rates of certain types of cancer throughout much of Bangladesh led researchers to investigate, with the result that it has been discovered that the cause has been identified as arsenic-contaminated water from tube wells. Medical statistics indicate that one in ten people who drink such water over a prolonged period will ultimately die of lung, bladder, or skin cancer. The World Health Organization, in a 2000 report, described the crisis as the largest mass poisoning of a population in history. The scale of the environmental disaster far exceeds those of Bhopal or Chernobyl: as many as 85 million people still draw arsenic-contaminated water from their local wells, and although the technology is available to purify Bangladesh's plentiful supplies of surface water, it will take many years to replace the estimated 6 million tube wells that are affected.

CORE REGIONS AND KEY CITIES

South Asia, like other peripheral world regions, does not contain industrial regions that drive the global economy. Nevertheless, there are within South Asia several historically important regions that have developed concentrations of industry, each with one or two metropolises that act as second- or third-level world cities: centers of industry and commerce that provide important nodes in the flows of goods, services, information, and capital not only within South Asia but also around the world. The irrigated plains of the Upper Ganga and the Indus were both cultural hearth regions whose agricultural productivity has long sustained a high density of population. The importance of the Damodar Valley and Hooghlyside, in contrast, is relatively recent, and is based on heavy industry that has concentrated around coalfields. Cotton textiles

are the basis of core industrial regions in Eastern Gujarat and the Mumbai-Pune corridor; while South India is characterized by a series of semi-autonomous industrial sub-regions.

The Upper Ganga Plains

The Upper Ganga Plains have historically constituted the most prominent region of India, and today they are the most heavily populated region of the country. The great empires of India rose to power here. The Ganga is the sacred river of Hinduism, and four of Hinduism's seven holy towns are located in the region, including Varanasi, the holiest of them all (see Geography Matters: Hinduism's Sacred Spaces, p. 000). Over 2000 years ago the Upper Ganga Plains were part of Asoka's great Buddhist empire, based at Patna (**Figure 11.21**). Muslim raids from the northwest began in the 11th century, and by the 16th century the plains were the seat of the great Mughal empire whose capital was for some time located at Agra and nearby Fatehpur Sikri. Following the decline of the Mughal empire, the region became a flourishing center for the arts under the Kingdom of Oudh (or Avadh), whose capital was in Lucknow. New Delhi, in the northwestern corner of the region, became the national capital of British India in 1911, and remains the capital of India.

Figure 11.21: map of Upper Ganga Plains

There are no significant mineral resources in the region, which is an immense plain built up from detritus eroded from the Himalayas. The monotony of the plains is broken up only by minor physical features: the *bhabar*, a tract of boulders and coarser gravels that skirts the hills to the north of the plains; the marshy *terai* areas that collect the drainage that falls freely through the *bhabar*; shallow salt-pans, known as *usar* plains, where chemical soil constituents have been deposited in dazzling sheets as water has evaporated from short-lived lakes and ponds; and occasional patches of low, sandy, undulating uplands known as *bhur*. Otherwise, most of the plains are very much as they were described almost 100 years ago in a government survey:

“ . . . a level plain, the monotony of which is broken only by the numerous village sites and groves of dark-olive mango-trees which meet the eye in every direction. The great plain is, however, highly cultivated, and the fields are never bare except during the hot months, after the spring harvest has been gathered, and before the rainy season has sufficiently advanced for the autumn crops to have appeared above the ground. . . . With the breaking of the monsoon in the middle or end of June the scene changes as if by magic; the turf is renewed, and tall grasses begin to shoot in the small patches of jungle. Even the salt *usar* plains put on a green mantle, which lasts for a very short time after the close of the rains. A month later the autumn crops—rice, the millets, and maize [corn]—have begun to clothe the naked fields. These continue to clothe the ground until late in the year, and are succeeded by the spring crops—wheat, barley, and gram [a kind of chick-pea]. In March they

ripen and the great plain is then a rolling sea of golden corn [wheat], in which appear islands of trees and villages . . .⁵

The wealth of the Upper Ganga Plains came from this agricultural productivity, carefully nourished by irrigation canals and wells. It has proved sustainable, but it can only carry a certain density of population, and that density may well have been reached or surpassed in many parts of the plains. Industry has developed throughout the region, but for the most part on a relatively small scale, involving agricultural processing, textiles, glassmaking, crafts, and carpet weaving. Ludhiana (population 1.7 million in 2000), in the northwestern corner of the region, is a textile center and the location of the world's largest bicycle manufacturer, Hero Bicycles, which produces three million bicycles annually. Agra (1.2 million), Allahabad (1.1 million), Lucknow (2.6 million), and Patna (1.3 million) are all important textile and light engineering centers. Kanpur (formerly Cawnpore; population 2.7 million), the region's most important industrial city, rose to prominence as a textile center at the time of the American Civil war, which created a sudden demand for Indian cotton just as the city had been linked by rail to Kolkata. Today, it is one of the most heavily-polluted cities in the world. By far the largest and most important city of the Upper Ganga Plains, however, is Delhi.

Delhi

Delhi is situated at a great crossroads, an important strategic location at the narrowest point of the Indo-Gangetic plains, the most productive agricultural regions of the subcontinent. For centuries, Delhi provided an essential base for controlling access to and from South Asia's northwestern frontier, and thereby the key overland routes to Central Asia and the Middle East. As a result, Delhi has been the site of the capital of at least eight different empires. Equally, Delhi has seen many different invaders throughout the ages. Timur (Tamerlane) plundered it in the 14th century; the Afghan Babur occupied it in the 16th century; and in 1739 Nadir Shah, the Persian emperor, sacked the city and made off with the famous Peacock Throne and with the huge koh-i-noor diamond (which is now part of the British royal family's crown jewels).

Delhi's golden age was in the 17th century under the Mughal emperor Shah Jahan (1628-1658), when it was known as Shahjahanabad. Shah Jahan built the famous Red Fort (**Figure 11.22**) with its palace and city walls, as well as the imposing Jama Masjid (Friday Mosque). Today, Shahjahanabad is part of Old Delhi, whose central focus is Chandni Chowk—'Silver Street', the bazaar of goldsmiths and jewelers—which runs west from the Red Fort on the right bank of the River Yamuna. Old Delhi is characterized by narrow streets and alleys, low-rise buildings, bazaars, mosques, temples, and crowds. To the north and west of Old

⁵ United Provinces Gazetteer, Volume 1. Calcutta: United Provinces, 1908, p. 8. Quoted in O. H. K. Spate and A. Learmonth, India and Pakistan. London: Methuen, 1972, p. 549.

Delhi, the modern metropolis (population 11.7 million in 2000) has spilled out into a sprawl of industrial suburbs and high-density slums and squatter settlements.

Figure 11.22: photos of Delhi—Red Fort, Old Delhi streets, New Delhi

To the south is New Delhi, the planned capital of British India. Government administrative functions were moved to Delhi from Calcutta (now Kolkata) in 1912 but New Delhi was completed only in 1931. Designed by British architect-planner Edwin Lutyens, New Delhi was laid out with spacious roads and an impressive ensemble of imposing (but rather ungainly) government buildings in a modernistic geometric street pattern (Figure 11.22). The site originally stood separate from the unsanitary and congested environments of Old Delhi, but both Old and New Delhi are now engulfed within the vast sprawl of metropolitan Delhi. There is, however, a marked contrast between the suburbs that surround Old Delhi and those that surround New Delhi. The southern suburbs around New Delhi have very little industry and are dominated by the middle-class neighborhoods of civil servants, interspersed with the spacious suburbs of New Delhi's diplomatic sector, and with shopping centers and office complexes.

The Indus Plains

Like the Ganga Plains, the Indus Plains have a long history of agricultural productivity that has supported a succession of empires. Harappan agriculturalists, flourishing between 3000 and 2000 B.C., produced enough surplus to sustain a civilization that was centered in the cities of Kot Diji (near present-day Sukkur), Moenjodaro (near Larkana), and Harappa (near Sahiwal—see **Figure 11.23**). The center of gravity of later empires shifted north as it became more important to command access to the overland routes to Central Asia. For a thousand years, from the 6th century B.C. until around A.D. 450, the northern Indus plains took over as the core area of civilization, where a striking fusion of Greek, Central Asian, and Indian art and culture developed. Taxila (near present-day Islamabad) was of particular importance.

Figure 11.23: map of Indus Plains

From these earliest times, the region's productivity was dependent on irrigation, for the climate is hot, the rainfall irregular, and the soils sandy. The plains consist of a great mass of alluvium brought down by the Indus and its five tributaries (from west to east these are the Jhelum, Chenab, Ravi, Beas, and Sutlej) that flow across the Punjab (*panj ab* means 'five rivers'). The river floodplains are naturally fertile, but the interfluves between the rivers (known as *doabs*), though they have good soils, are semi arid and require irrigation. There were two traditional methods of irrigation that established the plains as the granary of successive empires. One was a series of inundation canals—channels that were constructed to carry the floodwaters of the monsoon season beyond the regular floodplains of the rivers. The other was the tube well, a simple shaft sunk

to the level of the water table, from which the water is raised by a variety of means, the most common being the “Persian Wheel”, driven by bullocks or other farm animals (**Figure 11.24**). British colonial engineers extended the inundation canals in the 19th century and in the early 20th century added a series of dams and irrigation schemes that extended irrigation to a greater portion of the doabs in the Punjab and to the lower Indus plains known as the Sindh. The new farmlands created by these irrigation schemes came to be called the Canal Colonies, and today they are distinctive within the landscape of the plains for their severely rectilinear field patterns, in contrast to the small and irregular-shaped field systems of the older-established areas.

Figure 11.24: photo of irrigation using Persian Wheel

With irrigation, farmers on the Indus plains can grow two sets of crops. The first set of crops, sown to take advantage of the monsoon rains and harvested by early winter, includes rice, millet, corn, and cotton. The second, sown at the start of the cool dry season and harvested in March or April, includes wheat, barley, rapeseed, mustard, and tobacco. This productivity supports a high density of population, mostly in large, nucleated villages. As in the Ganga Plains, craft industries are present throughout the towns and villages of the region. In the Indus Plains, these are dominated by the traditional manufacture of homespun and woven fabrics in cotton, silk, and wool; carpets, footwear, pottery, and metalworking.

Modern manufacturing industry is dominated by cotton textiles and woolen knitwear and is concentrated in the larger cities. Lahore (population 6.0 million in 2000) is the cultural, educational, and artistic capital of Pakistan, and has a relatively large engineering and electrical goods sector. Multan (population 1.5 million) is situated at the center of the country’s most important cotton-growing region and its manufacturing sector is dominated by cotton textiles. Gujranwala (population 2.0 million) is an engineering and metalworking center. Hyderabad is a tobacco-processing and textile manufacturing center whose economy has been particularly hard hit by the ethnic tensions between the indigenous (Sindhi) population and the *muhajirs*, Muslim refugees from India who settled in the Sindh in large numbers at Partition. Similar tensions exist in Karachi (population 11.8 million), though it is large and cosmopolitan enough that these tensions have not adversely affected its economy. Like all cities in this region, Karachi has a large informal economic sector and correspondingly extensive slums and squatter neighborhoods. But it also has a thriving commercial center with towering hotels, tourist shops, shopping centers, wide boulevards, and some exclusive residential districts.

The Damodar Valley and Hooghlyside

Whereas the plains of the Indus and the Ganga can be considered core regions because of their long-standing role as relatively prosperous agricultural hearths, the Damodar Valley and Hooghlyside (**Figure 11.25**) stands as a core region because of its heavy industry. The early development of the region was a result of European traders' desire to gain sea access to the wealth of the Ganga plains (with their fine textiles and valuable crops of opium, tea, and indigo) and the jute supplies of Bengal (a world monopoly). Calcutta (now called Kolkata) provided a port for ocean-going merchant vessels on the River Hooghly, with access to the river traffic of the Ganga. As commerce grew, so did industry, and in particular the manufacture of jute goods (rope and sacking), and engineering. By the mid-19th century, Hooghlyside had become the largest manufacturing region in India.

Figure 11.25: map of Damodar Valley & Hooghlyside

The opening of the Suez Canal in 1869 and the cotton boom triggered by the American Civil War (which dried up Britain's supply of cotton) meant that Calcutta's pre-eminence as an industrial center was challenged by Bombay (now Mumbai). But by then the mineral wealth of the Damodar Valley had been discovered and linked by railway lines to Hooghlyside, just 75 kilometers (47 miles) away. By the 1920s, the Damodar Valley and Hooghlyside together accounted for fully one-third of British India's manufacturing employment. India's richest coalfields are found in the Damodar Valley, while extensive deposits of iron ore are found nearby in the Keonjhar Hills. This gave rise to an important iron and steel industry. After Independence India, assisted by development aid from the Soviet Union, Britain, and West Germany, invested heavily in the Damodar Valley. The Damodar River and its principal tributaries were brought under control to reduce flooding, produce power, to provide irrigation for the region's farmers, and to provide water for the modern steel works that were built.

Today, the towns of the Damodar Valley remain important for iron and steel and export coal to many other regions within India. They have also developed a broad industrial base that includes the mining of copper and bauxite, zinc and lead refining, the manufacture of fertilizers, and a range of heavy engineering and tool-making. Meanwhile, Hooghlyside has lost some of its jute industry (the traditional jute-producing areas having fallen within East Pakistan—now Bangladesh—at Partition; and synthetic fibers having replaced jute in many applications) but has developed a mix of industries that includes engineering, metallurgy, food processing, petrochemicals, and publishing.

Kolkata

Kolkata (**Figure 11.26**) is the second-largest metropolis in South Asia (population 12.9 million in 2000). Spread along both banks of the Hooghly River for up to 80 kilometers (50 miles), metropolitan Kolkata covers an area of some 1300 square kilometers (507 square miles). As the

capital of British India between 1772 and 1911, Kolkata acquired an impressive range of public buildings, broad streets, universities, and imposing homes. In the 19th century, it was known as the “city of palaces.” As a major commercial and industrial city, Kolkata has acquired a Western-style CBD with a large office sector housing banks, transnational corporations, and business services. Throughout its history, though, the positive aspects of Kolkata’s development have been overshadowed by its problems. A victim of its own success—attracting many more migrants than the labor and housing markets could absorb—and handicapped by a low-lying site that is vulnerable to floods, Kolkata has long had a reputation for having some of the worst slums in South Asia. Kolkata’s infrastructure came under exceptional stress when Hindu refugees from East Pakistan crowded into the city at Partition, which also deprived Kolkata of a large portion of its economic sphere of influence. Since independence, overurbanization has compounded the problem of slums and urban decay. Today, tens of thousands of sidewalk dwellers crowd the CBD, while squatters have invaded many of the colonial-era parks and open spaces.

Figure 11.26: photo of Kolkata—aerial oblique

Eastern Gujarat

Between Surat and Mahesana in eastern Gujarat is a so-called ‘golden corridor’ of industrial development. The industry of this corridor has helped to make Gujarat one of the wealthiest states in India. Cotton textile manufacture is the basis of the region’s prosperity. The largest city in the region, Ahmedabad (population 4.2 million in 2000) has a cityscape full of smokestacks, reminiscent of the 19th century cityscapes of Manchester and the other cotton textile towns of northwestern England. Vadodara (formerly Baroda; population 1.6 million) is also heavily dependent on cotton textiles, as are Surat (2.3 million) and Mahesana (850,000), but the whole corridor has developed a mix of engineering, chemical works, paper manufacturing, and metalworking. Gujarat is the source of a disproportionate number of Indian emigrants to the United Kingdom and the United States—about 40 percent of the Indians in the New York area, for example, are Gujaratis. The economy of eastern Gujarat has benefited significantly from remittances from these emigrants, while some of the more successful emigrants have been a source of investment capital for the region. Unfortunately, environmental controls in Gujarat are notoriously lax, so that the whole ‘golden corridor’ in the eastern part of the state has become an almost continuous strip of environmental pollution and despoilation.

Mumbai-Pune

The Mumbai-Pune region is relatively small and isolated but in terms of economic production ranks as one of the most important in South Asia. Its vitality stems from its history and its strategic location rather than from the particular resource base of the region. The trading port of Bombay (now Mumbai) was of relatively minor significance for a long

time, but with the rise of the *Raj* it became the chief British base on the west coast. The first railway in India was built from Bombay to nearby Thana in 1853, and by 1864 the railway had reached Poona (now Pune) and Ahmedabad. At the same time, Bombay's docks were modernized to accommodate larger freighters. This provided a key advantage in terms of infrastructure that enabled the region to take full advantage of the boom in cotton prices created by the blockade of the South during the American Civil War. Prices fell sharply with the end of the Civil War in 1865, but by then a massive industrial base had been created and just four years later the opening of the Suez canal gave Bombay and its hinterland a huge locational boost, providing a much improved situation in terms of sea routes to Europe and the Middle East. Also significant in securing the economic well-being of the region was the influence of the Tata family, an economic dynasty whose members held a near-monopoly in several key industries based in the Mumbai-Pune region, including iron and steel. The Tata family was also influential in persuading the government to develop hydro-electric power for the region, exploiting the steep slope of the Western Ghats. More recently, the Mumbai-Pune corridor has experienced some significant growth in information technology industries, especially in systems software and systems tools.

Mumbai

When the Portuguese began trading along India's Konkan coast in the 1530s, they set up a fort on a series of seven islets that provided shelter for their merchant vessels. They called it Bon Bahia, a name that was anglicized to Bombay when the trading post was signed over to the British as part of the dowry for Portugal's Catherine of Braganza when she married England's Charles II in 1661. The port soon became the headquarters of the British East India Company, and thereafter grew steadily until the cotton boom of the 1860s, which not only provided Bombay with an industrial base but also provided the wealth that funded the reclamation of the tidal marshes surrounding the islets and transformed the cityscape with an impressive collection of Victorian buildings and parks.

Today, Mumbai (**Figure 11.27**) is by a comfortable margin the largest metropolis in South Asia (population 18.0 million in 2000). It is India's economic powerhouse and financial center. In addition to a still-significant textile and apparel industry and an international port that handles more than one third of India's trade, Mumbai is an industrial hub for a very broad spectrum of industry that includes the manufacture and assembly of automobiles, trucks, and buses, consumer durables, chemicals, petrochemicals, plastics, pharmaceuticals, precision instruments, food processing, printing, and film-making (see *Sense of Place: Bollywood*, p. 000).

Figure 11.27: photos of Mumbai

Many of the Victorian buildings and upscale residences of the British colonial era can still be seen in Mumbai, along with red double-decker buses and cricket matches in the parks (Figure 11.27). But the city's economic growth and its limited site mean that skyscrapers, office blocks and apartment complexes have crowded into the peninsula that was formerly the seven islets of Bon Bahia. Meanwhile, of course, Mumbai's prosperity has been a magnet for the rural poor from western and central India. Mumbai's metropolitan area has spread inland and along the coast for 30 kilometers (19 miles), with millions of people living in the squalid shanty settlements that surround the corridors of industry that radiate from the port and central area. These neighborhoods represent some of South Asia's largest and worst slums. Many of them are organized with a distinctive mixture of communalist local politics and underworld organizations. They are also congested to the point where much of the city's industry faces gridlock.

In response to Mumbai's congestion and the proliferation of slums, a completely new city—New Bombay, now called Navi Mumbai—was planned in 1973 for a greenfield site across the bay. The plan called for a series of 20 nodal sub-districts with 2 million inhabitants by the year 2000. Each of the sub-districts was to house the entire range of income groups, with the poorest one-third of the population being provided 'sites-and-services' rather than finished housing: plots with all basic infrastructure (streets, sewage and water lines, and foundations) but no construction. Households could build their own homes on these sites and have complete security of tenure. But as things have turned out, the failure to provide affordable housing to the poor is considered the worst shortcoming of Navi Mumbai. Today around 1 million people live in about seven completed nodes, but slums have proliferated and much of the speculatively-built office space in Navi Mumbai's downtown remains vacant. Congestion in Greater Mumbai (which includes Navi Mumbai) has stimulated economic growth in the Mumbai-Pune corridor, which has recently experienced a good deal of growth in information technology industries as well as in the longer-established industries such as electrical components, machine tools, pharmaceuticals, chemicals, rubber, paper, plastics, glass and various packaged goods. Pune itself, with good infrastructure, a new expressway connection to Mumbai, and institutions such as the National Defence Academy, Institute of Military Engineering, the Film and Television Institute, and the Armed Forces Medical College, is now growing much faster than Greater Mumbai.

South India

Though they do not constitute a tight-knit industrial region, the towns and cities of southern India together account for about 20 percent of the country's industrial employment. Bangalore (population 5.6 million in 2000) has become a thriving industrial and business center. Following the location of key defense and telecommunications research establishments

by the government in the 1960s, Bangalore became the premier science and technology center of India, attracting investment from a variety of transnational corporations as a result of the quality of its workforce. Important industries include the manufacture of aircraft, telecommunications equipment, watches, radios, and televisions, but the city has become world famous for its software industry (see *Sense of Place: India's Software Corridor*, p. 000), whose affluent employees have contributed to the city's progressive and liberal atmosphere and its lively commercial centers featuring fast-food restaurants, yuppie theme bars, and glitzy shopping malls.

Chennai (formerly Madras; population 6.0 million), on the other hand, grew large and prosperous as the entrepôt for southern India under British rule. As a major port and trading center, Chennai has a broad range of manufacturing, engineering, printing and publishing, and food processing. It is also the center for Tamil-language film-making. Coimbatore (population 1.3 million) is the most solidly industrial city in South India, with steel fabrication, engineering, cotton textiles, electrical and mechanical engineering, and paper-making. The cities of the Kerala coast, including Kochi (formerly Cochin; population 1.8 million), Kozhikode (formerly Calicut; population 1.1 million), and Thiruvananthapuram (formerly Trivandrum; population 850,000), rely heavily on processing the products of the region's agricultural and plantation products: tea, coconuts (used for oil and fiber), coffee, rubber, tapioca, and rice. Other important regional centers in southern India include Madurai (population 1.3 million), Mysore (population 750,000), and Pondicherry (population 800,000).

DISTINCTIVE REGIONS AND LANDSCAPES

Beyond the core regions of South Asia there exists a great variety of distinctive sub-regions whose attributes derive both from the sub-continent's broad range of physical environments and from its many distinctive sub-cultures, each with its regional cultural heritage. Three of these are examined here: the Mountain Rim, the Bengal Delta, and the Deccan Lava Plateau. These are the three largest and most distinctive regions outside the core regions of South Asia. Together, they illustrate the great diversity of regional landscapes in the sub-continent.

The Mountain Rim

The Mountain Rim is a vast region of spectacular mountain terrain, remote valleys, varied flora and fauna, ancient Buddhist monasteries, and fiercely independent tribal societies. The physical geography of the region is complex, with several mountain ranges that together sweep in a 2500-kilometer (1554-mile) arc that contains numerous high peaks (**Figure 11.28**). Among the highest are K2 (8610 meters; 28,250 feet), Kanchenjunga (8590 meters; 28,170 feet), Lhotse (8500 meters; 27,890 feet),

and 19 others of 7000 meters (22,964 feet), all of them among the world's 30 highest peaks. In addition to these high peaks are parallel ranges of lower but still impressive mountains and bands of deeply-incised, rugged foothills. The higher ranges are bare rock with glaciated features, but some of the lower ranges and foothills are forested with 'chir' (*Pinus longifolia*), while the low outer ridges carry a sparse dry scrub. The Mountain Rim can be traversed only in a few key passes. These include the famous Khyber Pass in Pakistan's Northwest Frontier, and the Rohtang La and Kunzum La between northern India and Tibet.

Figure 11.28: map of Mountain Rim region

Because of the high altitude and barren terrain, much of this region is uninhabitable. But interspersed among the high peaks and the foothills are protected gorges and fertile valleys that sustain isolated settlements of mountain peoples, most of whom tend flocks of sheep, yak, and goats, or work the tea plantations and orchards that cover the lower hills. The physical geography of the region, with its mosaic of remote valleys and basins, provided the framework for the territories of tiny feudal states. While these societies have been incorporated politically into modern national states, their landscapes and ways of life remain largely unchanged. The great variety of peoples within this mosaic is reflected by distinctive and colorful folk traditions and a broad range of ethnic, linguistic, and religious attributes. The peoples of the region are also among the most intractable in South Asia. The Mountain Rim is a region of strained geopolitics, ethnic tensions, ferocious independence movements, and political cultures that are steeped in guns and violence. The Pashtuns (Pathans) of Pakistan's Northwest Frontier region are the world's largest autonomous tribal society and have a long history of fierce independence. Many of the hundreds of tribes in the Mountain Rim remain antagonistic both to neighboring groups and to their national governments. Parts of the Mountain Rim remain off-limits to outsiders as national governments continue to struggle to subdue tribes that persist in pursuing independent ways of life.

Though local populations have resisted integration with broader empires and economies, they have absorbed a rich variety of cultural influences, including Hinduism, Buddhism, and the Mahayana Buddhism of Tibet and Ladakh that has mingled with Hinduism to produce the singular culture of Nepal. The temples and shrines of these and other religions are found scattered throughout the region, along trails and at the entrance to passes (**Figure 11.29**), but human settlement is for the most part concentrated in sheltered valleys and basins. The largest of these is the Vale of Kashmir, a fertile and verdant basin some 130 kilometers (81 miles) long and between 30 and 40 kilometers (19 to 25 miles) wide that is enclosed by the Himalayas to the east and the snow-capped ridges of the Pir Panjal range to the west (**Figure 11.30**). In this and other valleys it is possible to grow rice, with corn and wheat at higher elevations and

orchards—especially of apricots and walnuts—on the valley slopes. Herds of sheep, yak, and goats are kept on the higher slopes of the valleys and in the more arid valleys and basins. The moderate micro-climate of these valleys also proved attractive to the leadership of the *Raj*, who established **hill stations** as rest and recreation centers for their troops and bureaucrats, away from the heat and dust of the plains. Among the more important of these hill stations were Darjeeling, Shimla, and Srinagar. The British also found the climate of the foothills of the eastern Himalayas well suited to the cultivation of tea, and established extensive tea plantations to supply the seemingly inexhaustible demand in Britain for tea (see *Geographies of Indulgence, Desire, and Addiction: Tea*, p. 000). The British found the fiercely independent local tribal peoples unwilling to work in the plantations, and so contracted hundreds of thousands of tribal peoples from Bihar and Orissa to work as laborers in the plantations. Their descendants are known today as the “tea tribes” of Assam.

Figure 11.29: photo of temple/shrine

Figure 11.30: photo of Vale of Kashmir

The Bengal Delta

The Bengal Delta covers a large portion of Bangladesh and extends into India (**Figure 11.31**). The unique landscape of the region is dominated by water. The delta country is the product of three major rivers, the Ganga, the Brahmaputra, and the Meghna and their distributaries, along with a number of lesser rivers and their tributaries that sluice down to the Bay of Bengal, creating a vast web of waterways. Because these rivers lie in deep alluvium and carry such enormous quantities of water when in spate, they are almost impossible to control with engineering works, so that flooding is a normal event. In the monsoon season, about 70 percent of the delta region is flooded up to a meter or two in depth (**Figure 11.32**). The entire region is flat and low-lying, the land never rising above 10 meters (33 feet). Entering this environment, the rivers meander and braid, and often burst their banks to shift course. The history of the region is full of thriving towns becoming abandoned because the rivers on which they were situated silted up or changed course.

Figure 11.31: map of Bengal Delta

Figure 11.32: photo of monsoon flooding

Nevertheless, human occupation has adapted to the environment, and the region carries a relatively high density of population (about 900 persons per square kilometer; 2340 persons per square mile). Annual floods are a routine part of life, and farmers rely on floodwaters to water and fertilize the land. Occasionally, however, the flooding goes beyond routine inconvenience and hardship to reach disastrous levels. In 1988, all three of the major rivers reached flood stage at the same time, with the result that floods drowned more than 2000 people. In 1970, 1991, and 1999, cyclones hit the delta area during especially heavy flooding and

exceptionally high tides, leading to devastating damage and widespread loss of life. The 1970 cyclone killed between 300,000 and 500,000 people. Some geographers have suggested that annual flooding is getting more pronounced, pointing to deforestation in India and Nepal as the cause of increased runoff.

The natural landscape of the delta country is dominated by marshlands and dense jungle that is a haven for wildlife. There are, however, certain differences that relate to the different parts of the delta itself. Farther inland, the older parts of the delta are more stable, less prone to flooding, and more widely adapted to agriculture, including jute, the principal commercial crop of the region. In contrast are areas of 'moribund delta', formerly active floodplain areas where river flow is now at a minimum, river channels are choked with water-hyacinth, and soils, without the benefit of regular flooding by nutrient-rich rivers, have become leached and barren. Parts of the older, inland, delta have been affected by subsidence that has resulted in extensive marsh areas, some of them hundreds of square kilometers in extent. On the younger parts of the delta there are also marshy areas called backswamps. These are the result of the levees that build up along river banks, which subsequently tend to trap floodwater, preventing it from draining back into the river channel. Finally, much of the youngest part of the delta is tidal, and in the southernmost reaches of the delta salt water penetrates the deltaic distributary channels, creating a distinctive ecology of untouched mangrove and tropical swamp forest—the Sundarbans ("beautiful forest")—that is home to crocodiles, Bengal Tigers, and Chital deer.

The Deccan Lava Plateau

The most physiographically distinctive region of Peninsular India is the Deccan Lava Plateau (see Figure 11.3), a great expanse (approximately 300,000 square kilometers; 780,000 square miles) of basalt rock into which rivers have cut a landscape of wide, gently stepped valleys (**Figure 11.33**). The basalt rock is solidified lava that poured from earth fissures between 55 and 65 million years ago, covering this part of the peninsula with up to 3000 meters (9842 feet) of lava. The result is a landscape so flat, as geographers O. H. K. Spate and Andrew Learmonth once observed, "as to make one believe in the flat-earth theory." In detail, the features of the landscape are also distinctive, as the same authors noted: "mesas and buttes, their tops remarkably accordant, often as if sliced off with a knife. . . . The flanks of the hills are often stepped by the great horizontal lava flows . . . , and the whole country looks ridiculously like a relief model so badly constructed that the cardboard layers show through the modeling."⁶

Figure 11.33: photo of Deccan plateau landscape

⁶ O. H. K. Spate and A. Learmonth, India and Pakistan. A General and Regional Geography. London: Methuen, 1972, p. 693

The Deccan Lava Plateau is also culturally distinctive as the hearth area of the Maratha people. The Marathas resisted Muslim, Moghul, and British power with varying degrees of success, defending their fortified towns and villages with fast, light cavalry that was well suited to the terrain. The martial culture of the Marathas also incorporated *thuggees*, ritual murderers and bandits from whom the word thug is derived. The *thuggees* were eventually subdued by the British in the 19th century. Today, the military heritage of the Marathas is marked by the citadels that dominate the larger towns, and the forts and gates that can be seen in some of the villages. The towns and villages of the lava plateau are compact and widely spaced, the low and unreliable rainfall supporting a relatively low density of population. In terms of agriculture, the region is distinctive for the absence of rice cultivation. Most farmers rely on a mixture of wheat and millets, with a few cattle; or specialize in cotton or sugar beet as cash crops.

SUMMARY AND CONCLUSIONS

Isolated and protected by an arc of mountain ranges, the peoples of South Asia have developed distinctive cultures and generated influential concepts and powerful ideals that have spread around the world. The Harappan culture that flourished between 3000 and 2000 B.C. was one of the world's hearth areas of urban civilization. South Asia's resources and its geographic situation on sea lanes between Europe and the East Indies made it especially attractive to European imperial powers from the sixteenth century, and in the latter part of the twentieth century South Asia's strategic location—between the Middle East and Southeast Asia, and adjacent to China—meant that it was of great interest to the superpowers during the Cold War.

Today, South Asia has the fastest-growing—and the second largest—population of all world regions, with an important diaspora that extends to Europe, Africa, North America, and Southeast Asia. In comparison with other world regions, South Asia is still very much a land of villages, though it contains several metropolises of global importance. The region has become even more of a geopolitical hot spot since the end of the Cold War as India and Pakistan, both of them now with access to nuclear weapons, continue to struggle to come to terms with Partition. Meanwhile, South Asia is at a critical juncture in its development. On the one hand, it has considerable potential in its human and natural resource base and emerging new economy. India, in particular, is opening up its economy through reforms that have created a more open and entrepreneurial economic climate. Key institutions have been privatized, and foreign investment has flowed into the country, helping to generate exceptionally high economic growth rates. India now has a huge, well-educated, and sophisticated consumer market of more than 200 million

that has become part of the 'fast' world and an important agent of globalization. With the world's largest democracy and a significant industrial base, India has come to play an increasingly important role within the world-system, and the fact that India's middle class conducts business in English gives the country an important comparative advantage in today's world economy.

On the other hand, the whole of South Asia is facing a potentially deep and multi-faceted crisis that could well undermine this potential. In marked contrast to India, other countries have struggled to sustain democracy, sometimes failing altogether. In Islamic Afghanistan and Pakistan, powerful fundamentalist movements have resisted globalization, attempting to re-create certain aspects of traditional culture as the basis of contemporary social order. Throughout South Asia, poverty threatens to swamp the gains of economic development, extreme inequality threatens to undermine political stability, and both poverty and economic development pose a serious threat to South Asia's fragile ecological system.

KEY TERMS

atoll (p. 000)
bonded labor (p. 000)
caste (p. 000)
hill station (p. 000)
distributary (p. 000)
orographic effect (p. 000)
playa (p. 000)
Raj (p. 000)

EXERCISES

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