Sunrise in Bagan, Myanmar.
The Greater Mekong Subregion

The Greater Mekong Subregion (GMS) comprises six countries—Cambodia, the People’s Republic of China (PRC, specifically Yunnan Province), the Lao People’s Democratic Republic (Lao PDR), Myanmar, Thailand, and Viet Nam—that share the longest river in Southeast Asia, the Mekong. In 1992, with assistance from the Asian Development Bank, the six countries entered into a program of economic cooperation, designed to enhance economic relations among them. Guangxi Zhuang Autonomous Region, the only other entity in the PRC sharing a border with the GMS countries, joined the GMS in 2004. Guangxi has strong linkages with the GMS especially in resources, culture, trade, transport, and tourism.

The seven culturally, ethnically, and linguistically diverse GMS entities have a total population of about 332 million (2010) spread over 2.6 million square kilometers, comparable to the population of the United States but with only one quarter of the area, and with only a small fraction of the wealth.

The subregion embraces flora and fauna that have expanded northward along the Malay Peninsula into Thailand, encroached on the high mountains from the Himalayas, or advanced along the broad river valleys as dry deciduous forests similar to those of India. Ten million years of changing sea levels have left a rich legacy of unique life forms that have evolved in isolation on the Cardamom and Annamite mountains of Cambodia, the Lao PDR, Thailand, and Viet Nam.

These resources provide both income and sustenance to the great majority of people in the subregion, who are leading subsistence or near-subsistence agricultural lifestyles. The land yields timber, minerals, coal, and petroleum, while water from the many rivers supports agriculture and fisheries and provides energy in the form of hydropower. The coal reserves of the subregion are abundant and there are considerable oil and gas reserves. Most of them are in Myanmar, Thailand, and Viet Nam. These abundant energy resources are still relatively underused.
Economic development in the GMS has outpaced many other parts of the world over the past two decades with national average annual gross domestic product (GDP) rates of 5%–10% in most GMS countries. Between 2000 and 2009, GDP of the subregion as a whole grew at an average rate of over 9.5%. Much of the growth was fueled by demand within the subregion for food, energy, and commodities. Between 1992 and 2004, exports grew by 300% while intraregional trade expanded even more dramatically, eleven-fold. Foreign direct investment has contributed significantly to development, with increasing amounts originating within the subregion. For instance, between 1988 and 2007, Viet Nam recorded $96.6 billion in foreign direct investment inflows; a four-fold increase being recorded between 2002 and 2006. GMS economies have shown increasing resilience to global economic shocks; only Cambodia and Thailand dipped into negative growth during the global recession in 2008 and these as well as the

GDP Growth in GMS Countries, 2005–2010

Cambodia  Guangxi  Yunnan  Lao PDR
Myanmar  Thailand  Viet Nam


other countries showed strong positive growth in 2010. Aside from growing interregional economic links, stronger resilience can also be attributed to increasing diversification of GMS economies from primarily agricultural economies to a mix of agriculture, manufacturing, and service-oriented economies. The contribution of the agriculture sector to the overall net output of the GMS economy has declined steadily since 1995, and the contribution of the service and industry sectors has showed a corresponding increase. However agricultural practices in the GMS are also shifting from traditional subsistence approaches to more modern and commercial approaches. Although at different paces, all the GMS countries are showing trends toward increased intensification and specialization of agriculture.

The subregion's development has had a significant positive impact on human well-being. Per capita incomes have increased, with gross national income (GNI) per capita doubling in most countries between 1997 and 2007, notwithstanding inflation. GMS countries have shown steady progress toward achieving the Millennium Development Goal targets, with a number of national goals having “on track” or “early achiever” status. This is echoed by trends in the Human Development Index, which shows consistent improvement across the GMS between 2000 and 2010, and most GMS countries (with the exception of Myanmar) were classified as achieving “medium human development” in 2010.

In spite of impressive economic growth over the past two decades, the subregion still remains relatively poor, with the percentage of the population living in poverty ranging from 7.8 in Thailand to 27.6 in the Lao PDR. There are also significant differences in per capita income between GMS countries; gross national income per capita in 2011 ranged from $830 to $1,260 in the Lao PDR, Cambodia, and Viet Nam compared with over $4,420 in Thailand. Within countries, the gap between rich and poor has generally widened—the GINI coefficient, a measure of income distribution, increased for most GMS countries between 1990 and 2009, meaning increasing disparity of wealth among populations.

Economic disparities within the subregion are partially attributable to the concentration of infrastructure along the coastal areas and inaccessibility of the hinterlands, particularly upland areas, which support about a quarter of the GMS population. The subregion's population remains largely rural, ranging from 80% in Cambodia and 65% in Yunnan, to 58% in Guangxi. As elsewhere in the world, poverty is concentrated in rural areas where most households depend on agriculture and to a lesser extent on a diversified basket of farm and other wages and income from overseas relatives. Defining features of the subregion's poor are that they own very few productive assets and that self-employment, or unskilled agriculture labor, is the major source of income. Amongst the poor, women and marginalized groups, such as ethnic minorities, are affected most.

Life expectancy in the subregion, except in Myanmar, Cambodia, Yunnan, and the Lao PDR, is more than 70 years. Cambodia, the Lao PDR, and Myanmar still suffer high infant mortality rates (43, 42, and 50, respectively, per 1,000 live births, compared with Singapore’s 2), while the maternal mortality ratio per 100,000 live births is high in the Lao PDR (470), Cambodia (250), and Myanmar (200) compared with Singapore’s 3 (in 2010).

Cambodia, the Lao PDR, and Myanmar are particularly dependent on their large expanses of forest for the export of timber, wildlife, and other nontimber forest products. In all countries, water use for hydropower is important, and growing. All the countries in the subregion are enjoying revenues from tourism, with ecotourism—tourism based on features of the natural environment—increasing in importance.

The subregion is rich in inland riverine areas that contain a variety of wetlands and there are numerous smaller coastal rivers and drainage basins. Thus, it is not surprising that fisheries are important in several economies of the subregion as a source of protein and foreign exchange; Thailand ranks among the 10 largest fish producing nations in the world. Frozen shrimp and canned tuna are the major exports. Coastal marine fisheries are heavily exploited. If they are to remain sustainable, effective management will be needed. For all the economies (except perhaps Myanmar and Yunnan), the Mekong represents a major source
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Cambodia</th>
<th>Guangxi, PRC</th>
<th>Yunnan Province, PRC</th>
<th>Laos PDR</th>
<th>Myanmar</th>
<th>Thailand</th>
<th>Viet Nam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Official name</td>
<td>Kingdom of Cambodia</td>
<td>Guangxi Zhuang Autonomous Region</td>
<td>Yunnan Province</td>
<td>Las Peasas Democratic Republic</td>
<td>Republic of the Union of Myanmar</td>
<td>Kingdom of Thailand</td>
<td>Socialist Republic of Viet Nam</td>
</tr>
<tr>
<td>Capital</td>
<td>Phnom Penh</td>
<td>Nanning</td>
<td>Kunming</td>
<td>Nay Pyi Taw</td>
<td>Bangkok</td>
<td>Ho Chi Minh City</td>
<td></td>
</tr>
<tr>
<td>Major ethnic groups</td>
<td>Khmer 95.6%, Khmer Islam 2.09%, Vietnamese 0.81%, Laos 0.11%, Mon-Khmer 0.57%, Kuy 0.33%, Dong 0.06%, Tampasen 0.24%, Champa 0.14%, Khmer 0.16%, Khmer 0.16%, and other ethnic groups.</td>
<td>Han 62.9%, Zhuang 12.2%, Yao 3.1%, Miao 1%, Dong 0.2%, Gelao 0.4%, and others 0.9%.</td>
<td>Han 66.6%, Yi 10.9%, Han 3.5%, Dai 3.4%, Zhuang 2.8%, Hani 2.6%, and others 4%</td>
<td>Lao Tai 66%, Mon-Khmer 21.3%, Chinese-Tibetan 3.1%, Hmong Li-Mien 8.8%, and others 0.6%</td>
<td>Bamar 64%, Tibet-Burman 18%, Sino-Tibetan 8%, Mon-Khmer 5%, and others 2%</td>
<td>Thai 85%, Chinese 12%, Malay 5% and Mon-Khmer and Highland ethnic groups 12%</td>
<td>54 ethnic groups: Kh, people (36%), Tai, Thai, Monung. (3%), Khe, Khmer, and Mong (around 1 million each).</td>
</tr>
<tr>
<td>Languages</td>
<td>Khmer (official) 96%, Vietnamese, Chinese, Laos, Thai, English, and other languages.</td>
<td>Southwest Mandarin Chinese, and Zhuang patois, Cantonese</td>
<td>Mandarin Chinese and ethnic dialects</td>
<td>Lao (official), French, English, and ethnic dialects.</td>
<td>Burmese and ethnic dialects</td>
<td>Thai, English (secondary language of the elite, ethnic and regional languages)</td>
<td>Vietnamese (official) and ethnic languages</td>
</tr>
<tr>
<td>Religions</td>
<td>Theravada Buddhism 92.33%, Islam 1.32%, Christianity 0.31%, others 0.79% (2008)</td>
<td>Taoism, Buddhism, Catholicism, other Christian denominations, Islam.</td>
<td>Buddhism and others</td>
<td>Buddhism</td>
<td>Buddhism 99.9%, Islam 0.06%, Christianity 0.01%, others 1.35%</td>
<td>Buddhist, Hindu, Hindu, non-religious (predominant) Roman Catholic, some Protestant, indigenous beliefs, Islam.</td>
<td></td>
</tr>
<tr>
<td>Climate</td>
<td>Annual monsoon cycle (dry and rainy seasons). The rainy season lasts from May to October and the dry season from November to April. December to April are the coldest months, while the hottest period is in April. The average temperature is around 27-28°C.</td>
<td>Subtropical, humid monsoon climate; long, hot summers; warm, short winters; conspicuous dry and rainy seasons.</td>
<td>Subtropical monsoon in the southeast (East Asia monsoon) and southwest (South Asia monsoon); temperature between 2,000 and 3,000m, and flight in the high alpine in the northwest.</td>
<td>Tropical monsoon; rainy season (May to October); dry season (November to April).</td>
<td>Tropical monsoon; rainy season (May to October); dry season (November to April).</td>
<td>Tropical, rainy, warm; cloudy southwest monsoon (mid-May to September); dry; cool northwest monsoon (November to mid-March); southern monsoon, dry hot and humid.</td>
<td>(1) Northern Viet Nam (from Hai Van Pass northward) highly humid tropical monsoon climate with 4 seasons (spring, summer, autumn and winter) influenced by the Northeast and Southwest monsoon. (2) Southern Viet Nam (from Hai Van Pass southward) weak influence of monsoons, characterized by dry and rainy seasons and warm weather all year round.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Facts and Figures about the Greater Mekong Subregion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Official name</td>
<td>Kingdom of Cambodia, Myanmar, Lao PDR, Vietnam</td>
</tr>
<tr>
<td>Capital</td>
<td>Phnom Penh, Nay Pyi Taw, Vientiane Capital, Capital</td>
</tr>
<tr>
<td>Major ethnic groups</td>
<td>Khmer 95.6%, Khmer Islam 2.09%, Vietnamese 0.81%, Laos 0.11%, Mon-Khmer 0.57%, Kuy 0.33%, Dong 0.06%, Tampasen 0.24%, Champa 0.14%, Khmer 0.16%, Khmer 0.16%, and other ethnic groups.</td>
</tr>
<tr>
<td>Languages</td>
<td>Khmer (official) 96%, Vietnamese, Chinese, Laos, Thai, English, and other languages.</td>
</tr>
<tr>
<td>Religions</td>
<td>Theravada Buddhism 92.33%, Islam 1.32%, Christianity 0.31%, others 0.79% (2008)</td>
</tr>
<tr>
<td>Climate</td>
<td>Annual monsoon cycle (dry and rainy seasons). The rainy season lasts from May to October and the dry season from November to April. December to April are the coldest months, while the hottest period is in April. The average temperature is around 27-28°C.</td>
</tr>
</tbody>
</table>

PRC = People's Republic of China. All values are for 2010 unless otherwise indicated.
of freshwater fish, while in Thailand and Viet Nam about half of freshwater fish production comes from aquaculture. Both the inland and coastal fisheries in Cambodia are important, with catches making a significant contribution to Cambodia’s gross domestic product.

For centuries, the subregion’s wetlands have served as an important resource for the people who live alongside them, providing fish, waterfowl and other products, livelihood, and water for irrigation and consumption. The wetlands are mostly along the lowlands of the Mekong River Basin, the deltas of the major rivers, and the coastal plain of Thailand.

One of the most important wetlands in the subregion is Cambodia’s Tonle Sap, or Great Lake. Connected to the Mekong River system, it plays a crucial economic and environmental role in Cambodia and downstream; about 1 million people are said to depend on the lake’s fisheries. However, the lake provides much more than fish; it is a reservoir of biological diversity that includes—besides fish species—an array of birds and other animals.

Wetlands are being converted to agricultural land, including conversion to ponds for fish and shrimp farming, and are affected by the altered flood patterns. Such changes are drastically reshaping large areas of natural wetlands, resulting in the disappearance of indigenous species. Some of the

Populations: Diverging Growth Rates

The divergent cultural, social, and historical factors that have shaped the countries in the Greater Mekong Subregion are reflected in varied and sometimes startling population demographics. Population growth rates in the Lao PDR (2.2%) and Cambodia (1.5%) have fallen over the past decade but are nevertheless high in the light of continuing high fertility rates and steep declines in infant mortality. Myanmar and Viet Nam have a population growth rate of 1.1%; Thailand (0.6%) and Yunnan Province of the PRC (0.69%) have far lower growth rates; however, in Guangxi Zhuang Autonomous Region of the PRC, the population growth rate was higher in 2010 (1.3%), than in 2009 (0.9%), perhaps reflecting fluctuations in the floating, migrant labor population of that region.

These trends have implications for the future. Cambodia, the Lao PDR, and Viet Nam have relatively young populations, while in Thailand and Yunnan Province, because of low birth rates and longer life expectancies, there will be a fairly steep rise in old-age dependency in the next few decades.
Where the Fish Swim

The main river systems traversing the subregion are—from west to east—the Ayeyarwady or Irrawaddy, Thanlwin (or Salween), Chao Phraya, Mekong (or Lancang), and Red (or Hong). There are numerous smaller coastal rivers and drainage basins, and many small lakes and wetlands. Major deltaic formations exist in estuaries of the Ayeyarwady, Chao Phraya, Mekong, and Red rivers. There are large dams on the rivers and tributaries and these have created artificial environments for fish production. Freshwater ponds are also widespread.

Not surprisingly, given this varied and extensive aquatic environment, the subregion harbors substantial fish biodiversity, which includes Southeast Asian fish fauna (comprising those from the Mekong River Basin and Chao Phraya), Indian fish fauna (from the Ayeyarwady and Thanlwin, as well as the Ganges and Brahmaputra basins), and Chinese fish fauna (from the Red and Yangtze rivers). The total number of freshwater fish species in the subregion is 1,600–1,800. Yunnan Province of the People’s Republic of China has the highest diversity because all three main faunal groupings occur within its boundaries.

Fisheries in the Mekong River Basin are among the most productive freshwater fisheries in the world, second only to the Amazon. The Mekong River Commission estimates that for the entire Mekong River Basin and other large and smaller river basins, the total annual freshwater catch, including fish farming, or aquaculture, approaches 3.1 million tons. Total fish production in the subregion based on recent statistics from the Food and Agriculture Organization of the United Nations (FAO) is 6.8 million tons per year.

In the long term, opportunities for increasing catches are limited. Coastal marine fisheries are generally already heavily exploited and in need of effective management. Meanwhile, aquaculture production is expanding rapidly, in inland ponds and cages and coastal shrimp ponds.

subregion’s most endangered species are closely associated with wetlands. They include the Siamese crocodile, freshwater turtles, and large migratory water birds.

Good arable land is scarce and at a premium throughout the subregion because of high population densities and the dominant hilly and mountainous terrain, which is unsuitable for agriculture. Large areas of land are being converted into cash crop farming, and the clearing of secondary forest is pushing some local people into primary forest. Viet Nam has cleared large areas of forest in the past 10–15 years for farming coffee, rubber, cashews, and sugar. The same process is beginning in Cambodia and the Lao PDR. Shifting cultivation for subsistence agriculture has been practiced by a large portion of the population—mostly hill tribe people—for hundreds of years. However, population pressure in recent years has meant less land available for rotation, leading to shorter fallow periods, less fertile land, and further forest encroachment.

Unsustainable harvesting practices and the export of a number of natural resources have had a significant impact on the subregion’s biodiversity. For instance, forests provide vital protection from siltation and soil erosion, generate tourism, and provide subsistence to rural communities in the form of fuelwood, food, medicine, and other nontimber forest products. The poorer countries in the subregion have the larger remaining natural forest cover, equivalent to more than half the land area in Cambodia, the Lao PDR, and Myanmar.

Economic expansion in the subregion since 1990 has been fueled largely by exports, driven in turn by the extraction of natural resources—water resources to support expansion of hydropower generation; land resources for increased agricultural production, mining, and mineral-based industries; and forest resources for timber and other products. In some cases, the result has been severe pressure on the resource base, causing resource depletion, environmental degradation, and ecosystem fragmentation. Between 10% and 40% of arable land in the GMS countries is already degraded. National environmental performance assessments show...
that GMS-wide environmental indicators are on downward trends, notwithstanding moderately improving government responses. Continued unsustainable resource extraction practices could seriously undermine future economic development of the subregion.

Threatening the existence and viability of natural forests are logging operations, which can vary in size from individuals with handsaws to extraction on an industrial scale. Commercial logging and log exports are regulated by government in all the countries. However, strong demand and weak enforcement of regulations have hampered efforts to control logging and the international log trade. Meanwhile, the closure of production forests in Yunnan, Thailand, and Viet Nam has put greater pressure on the remaining forests in Cambodia, the Lao PDR, and Myanmar.

Despite considerable effort by GMS governments to manage forest resources sustainably, the magnitude of pressures still outpaces responses. Recent statistics indicate a slowing of overall forest loss in the GMS over the last decade; however, the effective rate of forest loss is on the rise if forest degradation is taken into account. This is reflected in the decline in growing stock per unit of forest area, which accelerated between 2005 and 2010 compared with the previous five years.

The decline in forest cover and density poses threats to the subregion’s biodiversity. Sixteen of the 200 World Wildlife Fund classified ecoregions that represent critical landscapes of international biological importance are found in the GMS. Between 1997 and 2008, 1,231 new species were discovered across the GMS, with an impressive 308 new species identified in 2008 and 2009 alone. Fragmentation of these landscapes due to development pressures, combined with uncontrolled exploitation of wild plants and animals to meet growing consumer demands, threatens the GMS with the “empty forest syndrome.”

Infrastructure development could also adversely affect biodiversity in the subregion as land is cleared to make way for roads, transmission lines, and the expansion of urban areas. Past practices have not always provided adequate protection for the environment and the people directly affected by such development.

Socioeconomic developments, including infrastructure projects (mainly for irrigation and hydropower); increased demand for domestic, industrial and agricultural use; and increased pollution have had profound effects on the quantity and quality of water in the GMS. Future development will increase the pressure on water resources and the extensive animal and plant resources they contain that support the livelihood
and economic activities of about 66 million people living along river banks and in the Mekong Delta.

Increased water withdrawals and dry-season water shortages create competition for water, particularly in intensively irrigated areas, such as the Red and Chao Phraya river deltas. In addition, pesticide and heavy metal contamination in these rivers has implications for food safety and human health. In densely populated areas and industrial zones around the Mekong River, for example, the ecological health of the river is a key concern due to limited treatment of industrial wastewater and improper disposal of hazardous wastes.

Growing populations in GMS countries, combined with changing dietary patterns (preferences shifting from cereals to animal products, fish, and vegetables) will significantly increase the demand for food in the subregion by a projected 25% by 2050. Meanwhile undernourishment continues to be a problem in all countries—"moderate" in Thailand, "serious" in Viet Nam and Myanmar, and "alarming" in the Lao PDR and Cambodia according to the 2008 Global Hunger Index. Food security concerns in the subregion are aggravated by deteriorating sanitary conditions, which affect food quality and safety.

Rapid economic development has resulted in energy demand growing in excess of supply options. Coupled with volatile global fuel prices, this has caused growing concerns over energy security in the GMS. Energy demand is expected to grow as a consequence of continued economic development and improvements in grid connectivity; the annual peak demand for power in GMS countries is forecast to increase by 175% between 2010 and 2025.

Meeting the subregion’s energy demand will have a number of social and environmental impacts. Hydropower in excess of 900 megawatts is
envisaged in the Lower Mekong Basin, which will inundate almost 2 million hectares of land, threatening conservation target landscapes in the Lao PDR. Similarly, in the Cardamom Mountains in Cambodia proposed hydropower stations will inundate large forest areas. Biofuel production to supplement energy supplies is on the rise in the GMS. While biofuels present a low-carbon fuel option, thereby helping to reduce the subregion’s greenhouse gas emissions, the uncontrolled expansion of biofuel plantations would impinge on productive agricultural lands and forest areas and have knock-on effects for food security and loss of ecosystem services. Additionally, planned expansion of coal-powered thermal plants will result in increased emissions of carbon dioxide and particulates. A ten-fold increase in coal power generation is expected in Viet Nam by 2030, for example, which could cost the country close to $9 billion per year unless actions are taken to mitigate these impacts.

Climate change is expected to exacerbate the impact of development pressures on the subregion’s economic activities, natural resources, and livelihoods with profound effects on the population. The geographic and socioeconomic features of the GMS make it particularly vulnerable to climate change. Large expanses of low-lying coastal areas with high concentrations of infrastructure and populations are exceedingly vulnerable to sea level rise. Key economic sectors of the GMS, such as agriculture with its high dependence on rain-fed farming in the highlands and on aquaculture and irrigated agriculture in the lowlands and deltas; energy, particularly hydropower; and tourism are all highly dependent on climatic conditions.

Climate change is likely to affect rural poor populations disproportionately due to the lack of adequate social safety nets. Climate-related impacts can have cascading effects that compound
the above threats. Prolonged extreme weather events that affect food and energy production, and in turn affect livelihoods and employment, force increasing numbers to live in poverty. Recent studies have suggested that the cost of climate change could be as high as 6.7% of gross domestic product per year by 2100 in Thailand and Viet Nam, through impacts on infrastructure and natural resources, significantly higher than the global average due to the largely rural and agrarian nature of the GMS.

There are also cross-border environmental issues, including hydropower development along the Mekong River and its tributaries; canalization and other navigation improvements in the Upper Mekong River Basin; conflicting maritime claims to offshore fishery resources; illegal cross-border trade in timber, wildlife, and rare and endangered species; expansion of protected areas, parks, and nature reserves across borders; and conservation of rare wildlife whose habitats straddle national borders. Initiatives taken by one country usually affect neighboring countries. Subregional cooperation is critical in ensuring that the use of the subregion’s resources, especially hydropower, is well planned and sustainable so that the intended benefits can be shared by all. Forest conservation and biodiversity protection can be fostered through common efforts to stem illegal cross-border trade, and joint agreements for the creation and management of protected areas that straddle international borders.

In response, the subregional countries have put environmental laws and regulations in place. However, the degree of success of these laws and regulations differs among countries. Environmental standards have been set, but not in all countries. Environmental impact assessment procedures, and often the legal and institutional framework for minimizing the adverse environmental impact of projects, vary widely, as do the capacities of institutions with an environmental mandate.

There is a need for better economic and development planning, particularly for infrastructure projects—especially for roads and hydropower—if the subregion is to become a sustainable growth center.

**Who is in the Minority?**

Ethnic minorities comprise nearly one fourth of the combined population of the subregion—more than 80 million people. The subregion boasts several major ethnic groups, namely the Cham and Vietnamese in Cambodia; Zhuang, Yao, and Dong in Guangxi Zhuang Autonomous Region of the People's Republic of China (PRC); Yi, Bai, Hani, Dai, and Miao in Yunnan Province, PRC; Phutai, Kamu, Hmong, and Lue in the Lao People's Democratic Republic; Kachin, Kayah, Kayin, Chin, Mon, Rakhine, and Shan in Myanmar; Karen, Hmong, and Lahu in Thailand; and Tay, Thai, Muong, and Khmer in Viet Nam. Increasing tourism to the subregion, particularly to Thailand, Viet Nam, and Yunnan has focused interest in those groups that live in the uplands and rely mostly on natural resources for their livelihood. Their intimate knowledge of traditional systems related to the sustainable use and management of resources, handed down to them by their ancestors, makes these ethnic groups guardians of their natural heritage.

**Upper:** Monks and devotees in the Wat Po temple complex, Bangkok, Thailand. **Lower:** Pa'O woman at a village market, Inle Lake, Myanmar.
Cambodia is the subregion’s smallest country, situated between Thailand to the west, the Lao People’s Democratic Republic to the north, and Viet Nam to the east. Much of its land area of 181,035 square kilometers is taken up by a shallow basin, centered on a huge lake, Tonle Sap, and surrounded by the Cardamom and other mountains in the southwest.

About 96% of the population of 14.3 million are Khmer, with the rest composed of ethnic groups (Cham 2.1%, Lao 0.1%, and hill tribes 1.5%) as well as some Chinese and Vietnamese. More than 80% of the people live in the countryside. The gross national income (GNI) per capita was $760 in 2010. In 2000, life expectancy at birth was a low 56 years but by 2010 it had improved to 63.1; infant mortality has declined, from 95 per 1,000 live births in 2000 to 43 in 2010; maternal mortality is also declining, from more than 400 per 100,000 live births in 2000 to 206 by 2010. Poverty reduction resulting from development should lead to better health and education; the current low levels of health and education (especially basic education and youth literacy) constrain the pace of development.

Many people feel they fare better in urban than in rural areas, which has resulted in some rural-urban migration, a trend that may increase in the future and heighten the stress on urban infrastructure and the urban environment.

In 2009, agriculture employed 57.6% of the total workforce of 7,480,000. The agriculture sector’s share of gross domestic product (GDP) decreased from 55% in 1990 to less than 40% in 2001, and to 36% in 2010. While the low level of irrigation is a major constraint to agricultural productivity, a significant hazard is posed by land mines strewn over about 300,000 hectares of countryside, including 55,000 hectares of prime rice-growing land in Siem Reap, Banteay Meanchey, and Battambang provinces, the country’s traditional grain basket. The Government is systematically clearing areas of land mines and unexploded ordinance but it will take many years of patient effort to complete the task.
Cambodia is very vulnerable to natural disasters, especially flooding, given the dominance of agriculture and the vast Tonle Sap and Mekong River system in the country. In September 2011, these water bodies reached their highest levels on record—at the same time as Thailand’s disastrous floods—displacing some 1.2 million people, or more than 8% of the population, and ruining much of the country’s crops. Another recent major disaster was typhoon Ketsana, which hit Cambodia in 2009. Fourteen out of 24 provinces were affected by the storm and subsequent flash floods, and the homes and livelihoods of some 49,000 families, about 180,000 people were destroyed.

Cambodia is a biodiversity hotspot, rich in species and in genetic and ecosystem diversity. It has the world’s highest proportion of undeveloped land (forest and wetlands) and one of the least disturbed coastlines. The recorded species found so far in Cambodia—2,308 plants, 123 terrestrial mammals, 545 birds, 490 freshwater fish, and 410 marine fish—are likely to be underestimates, given the limited and often unverified information available. Many people rely directly on biological resources for their livelihood. Cambodia’s ecosystems—forests, wetlands, freshwaters, and marine waters—house the rural Cambodian’s main source of income. The southwestern coastal ranges and marine waters, northeastern forests, and Tonle Sap floodplains deserve priority action to conserve their biodiversity.

But wetland and forest ecosystems have been degraded and species are threatened because of their conversion for agricultural use, poor planning, weak regulatory enforcement, uncertainties in land tenure, hunting, and wildlife trading, among other problems.

The Mekong River, the Tonle Sap River, and Tonle Sap itself define Cambodia’s water and fisheries resources. The Tonle Sap system supports fisheries, agriculture, and transportation. The lake—Southeast Asia’s largest and one of its most important biodiversity areas—is crucial to the economy and environment of Cambodia and beyond. The 120-kilometer Tonle Sap River connects it to the Mekong River. It was estimated in 2011 that the fishery sector employed around 420,000 people directly and more than 2 million people indirectly.
Facts and Figures about Cambodia

### ECONOMY

- **Total gross national income (GNI):** $10,686 (2010)
- **Per capita GNP:** $760 (2010)

### GDP Composition by sector

- **Agriculture:** 36% (2010)
- **Industry:** 23% (2010)
- **Services:** 41% (2010)

### Education

- **Net enrollment ratio in primary education:** 96% (2010)

### Gender Equality and Women Empowerment

- **Ratio of girls to boys in primary and secondary education:** 94% (2010)
- **Ratio of literate females to males among 15-24-year-olds:** 95.7% (2006)

### Health

- **Under-5 mortality rate, per 1,000 live births:** 51 (2010)
- **Infant mortality rate, per 1,000 live births:** 43 (2010)

### Energy Efficiency of Emissions

- **CO₂ emissions, total million tons:** 4.613 (2009)
- **CO₂ emissions per capita, total tons:** 0.3 (2009)
- **Energy use per capita, kg of oil equivalent:** 370.75 (2009)

### Environment

- **Total forest area, % of land area:** 57 (2010)
- **Protected area, % of total land area:** 24 (2009)

### People

- **Total population, million:** 14.3 (2010)
- **Population density, persons/km²:** 80 (2010)

### Poverty

- **Human Poverty Index/Rank:** 27.7; 87th out of 182 (2009)
- **Human Development Index/Rank:** 0.523; 139th out of 187 countries (2011)

### Rural Environment

- **Rural population, % of total:** 80.5 (2010)
- **Rural population density, persons/km² of arable land:** 27.8 (2006)
- **Arable land, % of land area:** 22.1 (2009)
- **Permanent cropland, % of land area:** 0.9 (2009)

### Urban Environment

- **Urban population, % of total:** 19.5 (2010)
- **Population in largest city, % of urban population:** 48 (2010)
- **Population with access to improved sanitation, % of urban population:** 81.5 (2009)

### Energy

- **Energy use per capita, kg of oil equivalent:** 370.75 (2009)

---

**Cambodia**

Top: Cambodian village girl. Middle: Royal Palace, Phnom Penh. Bottom: Motorcycles are the vehicles of choice for almost every purpose in Cambodia.
people are thought to derive some type of livelihood benefit from involvement in the sector. Tonle Sap also provides irrigation to rice fields in the area and harbors an abundance of bird and other animal species. However, the lake’s inundated forests have recently come under increasing seasonal pressure largely because of the demand by households for wood for fuel and handicraft production; expanding fishing-lot operations; and conversion of inundated forest to farming, caused by increasing seasonal migration toward the lake of people looking for income-earning opportunities. Apart from forest cover loss, the spread of farming in the inundated forest zone has brought with it the prospect of fertilizer and pesticide runoff that could devastate the lake’s fisheries.

The management of water resources is a key environmental issue with direct implications for the poor. In 2010, only about 35.4% of the country’s population had access to improved sanitation and only a little over half the rural population had access to safe drinking water. The livelihood of most of the rural poor is dependent on water, particularly for agriculture and fisheries. Only a small portion of cropland is supported by irrigation systems (7%); the rest is mainly rainfed. Farmers face the risk of crop failure or reduced yields in the event of drought. Weak legislation, policies, and institutional capacity; poor management of irrigation and drainage systems; and competing water uses remain outstanding issues in the water sector.

Cambodia is the only place in the subregion where tropical forest still reaches all the way to the seashore (as it does near Koh Kong). However, forest cover is dwindling at the rate of 1.3%, (or 145,000 hectares) a year to satisfy the domestic demand of rural people for wood. Around 98% of rural households used firewood and charcoal. In 2010, Cambodia consumed about 8.7 million cubic meters of fuelwood. Other factors causing forest depletion are illegal logging, widespread shifting cultivation by upland dwellers, forest clearing for agriculture, and lack of sound forest management. Cambodia’s 443 kilometer shoreline is dotted with 64 islands of various sizes, mostly uninhabited. Some are fringed by coral reefs, making them likely tourist or ecotourism destinations. Elsewhere, tourism—focused on the Angkor temples, the beaches of Sihanoukville, and ecotourism in the Koh Kong mangrove area and Ratanakiri—has grown due to the present stable political climate, following a decline in the late 1990s. Between 2000 and 2009, the cumulative annual growth rate of tourist arrivals was about 18%, jumping from 786,524 in 2002 to over 2.5 million in 2010, earning the country $1.56 billion in receipts from tourism, its fastest-growing industry.
Although Cambodia’s coastal resources are less degraded than those of neighboring countries, activities that result in sedimentation, such as charcoal extraction, shrimp farming, salt farming, and logging, have degraded the marine environment, particularly the mangrove forests. In recent years, the marine fishery has seen a significant increase in the number of fishing boats (both national and foreign), resulting in an increase in pressure on coastal resources. Annual catches by licensed Thai vessels in Cambodian waters are thought to range from 26,500 to 37,500 tons per annum but there is probably also a substantial amount of illegal fishing by unlicensed foreign vessels. The growing fishing effort in coastal areas is placing the natural resources under increasing pressure. There is substantial habitat degradation from destructive fishing practices (dynamiting, cyanide fishing, and illegal trawling in shallow nursery areas), destruction of mangrove forest for firewood and conversion to shrimp farms, sand mining from rivers and the sea bed, siltation, and pollution from urbanization/industrialization and increasing tourism.

Industrial growth has contributed a significant share of Cambodia’s recent economic growth, particularly through a rapid expansion in garment exports. However, the industrial sector’s contribution to GDP in 2010 was only about 23%, still outweighed by services at 41% of GDP and agriculture at 36%. A ban on illegal logging, while necessary to conserve forest ecosystems, has reduced the supply of timber, causing a sharp drop in value-added income for manufactured wood and related products. Municipal discharges continue to dwarf the volume of industrial effluent in terms of total pollution load; however, very little, if any, industrial pollution abatement has taken place in Cambodia save for a subdecree on water pollution control issued in 1999.

Nevertheless, the economy since 1993 has been relatively strong and a dynamic export industry has developed, resulting in a dizzying economic growth rate of 10.2% in 2007 before the global financial crisis of 2008, a rate that the country expects to achieve again within a few years. This will require sound policies, supported by an appropriate legal system and effective governance. Social development has been slower than economic development; the United Nations Development Programme’s Human Development Index showed an improvement from 0.407 in 1995 to 0.523 in 2011, though Cambodia ranked 139 out of 187 countries in 2011.
Once considered the loveliest of the French-built cities in Indochina, Phnom Penh, the capital of Cambodia, is still a place of great historical beauty. Established in 1434, the city is noted for its cultural and historical attractions, such as the Royal Palace, the Silver Pagoda, the National Museum, Wat Phnom (a small hill crowned by an active pagoda marking the legendary founding place of Phnom Penh), and the Central market (completed in 1937, designed by a French architect), as well as the relaxing ambience of its wide boulevards and picturesque riverside.

Situated at the confluence of the Tonle Sap, Mekong, and Bassac rivers, Phnom Penh is now home to about 1.5 million people (with a population density 2,213 people per square kilometer). More than 95% of the city’s population are Khmer; Cham make up 2.3%, 1.7% are Vietnamese, and other ethnic groups make up the rest.

Because of its economic opportunities, many rural residents have flocked to Phnom Penh. With population growth have come greater pressures on municipal services and infrastructure, and, inevitably, increasing environmental deterioration. Waste generation and other problems have increased. In 2001, Phnom Penh produced 0.46 kilograms of waste per person per day; this increased gradually to 0.74 kilograms by 2008. Although much of the waste generated is biodegradable, the lack of disposal sites is a major environmental problem. The disposal of wastewater also constitutes a problem. Water used by households and industries is drained through stormwater pipes and discharged untreated into rivers and other water bodies. The rapidly growing number of vehicles means that new and better roads are needed, along with vehicle emission regulations to control a slow but steady rise in air pollution.

To keep pace with the growing urban population, the local government has been trying to improve the power supply, water supply, drainage systems, telephone connections, and solid waste collection. The national Government, for its part, is promoting tourism and has adopted an open investment policy to boost the economy of Phnom Penh and the country as a whole.
Guangxi Zhuang Autonomous Region is situated in the southwestern People's Republic of China (PRC), bordered by Yunnan Province on the west, Guizhou on the northwest, Hunan on the northeast, Guangdong on the east, and Viet Nam on the southwest, facing Beibu Gulf in the south. The total length of land border with Viet Nam is 637 kilometers. Guangxi has an area of 236,700 square kilometers or 2.5% of the area of the PRC. The region has a terraced topography, sloping from the northwest to the southeast; hilly land makes up 85% of its total area.

A large number of multi-ethnic groups live in Guangxi, the largest of which is the Zhuang, with 16.71 million; the others include Han, Yao, Miao, Dong, Mulam, Maonan, Hui, Jing, Yi, Shui, and Gelao, as well as about 25 smaller ones. By 2011, the population of ethnic minorities was 19.73 million accounting for nearly 38% of the total population.

Apart from the festivals shared with the Han family, such as the Spring Festival, Lantern Festival, Qingming Festival, Duanwu (Dragon Boat Race), Zhongyuan Festival, Mid-Autumn Festival, and Double Ninth Festival, the ethnic minorities in Guangxi have several unique, local festivals. The third day of the third month in the lunar calendar is the annual folk-song singing festival of the Zhuang ethnic group. On that day, young men and women, wearing beautiful costumes and carrying a variety...
of foods, and young girls carrying carefully-made colored silk balls, crowd from all directions onto the stages to perform songs. The Panwang Festival is a grand traditional festival of the Yao ethnic group to pay tribute to their ancestors. The festival is held on the 16th of the tenth lunar month and usually lasts for three days and nights, although sometimes it can last as long as seven days and nights. The Changha Festival is the grandest traditional festival for the Jing ethnic group to show their tribute to the god of the sea. During the festival they gather at ceremonial sites to sing to the gods and their ancestors. Timing of the festival varies from village to village on the three islands inhabited by the Jing people.

Guangxi has very close cultural and social links with Southeast Asian countries. Some ethnic groups in Guangxi, such as Zhuang, Dong, Shui, Mulao, and Maonan, have traditional relations with many ethnic groups in the Lao People’s Democratic Republic, Myanmar, Thailand, and Viet Nam. They share similarities in language and folk customs. These relationships provide a favorable foundation for economic and cultural exchanges between the PRC and Southeast Asian countries.

Guangxi is the only coastal economy in the western PRC well positioned to develop as a hub of the China-Association of Southeast Asian Nations (ASEAN) Free Trade Zone. The economic opportunities offered by this trade zone and by the Pan-Pearl River Delta economic zone make Guangxi a spectacular “new star” in the western PRC. Since 2004, the PRC and 10 ASEAN countries as well as the ASEAN Secretariat have co-hosted the China-ASEAN Expo, which is held annually in Nanning, Guangxi’s capital.

Thanks to its geographical advantages and the PRC reform and opening up policy, Guangxi’s economy grew faster than the PRC as a whole during 2001–2010. In 2010, the gross domestic product (GDP) of Guangxi reached $141.35 billion, with a per capita GDP of $2,987. The region’s total industrial output is valued at $57.02 billion, of which farming, forestry, animal husbandry, and fisheries totaled $36.12 billion.

In recent years, Guangxi’s economy has fallen behind that of its wealthy neighbor, the province of Guangdong. However, with the construction of the Beibu Gulf Economic Zone and speeding up of key projects in transportation, marine industry, agriculture, forestry, fisheries, energy, cross-border tourism, and environmental protection, the region expects an acceleration of investment. The focus of spending in the next
### Facts and Figures about Guangxi Zhuang Autonomous Region, PRC

#### GEOGRAPHY

**Location**
Southwestern People’s Republic of China, bordered by Yunnan to the west, Guizhou to the north, Hunan to the northeast, and Guangdong to the east and southeast. Also bounded by Viet Nam in the southwest and the Beibu Gulf in the south.

**Total area, km²**
236,700

**Climate**
Subtropical, humid, monsoon climate; long, hot summers; warm, short winters; conspicuous dry and rainy seasons.

**Terrain**
Surrounded by mountains, hills, and plains in the middle, with hilly land constituting 85% of its total area, and plains 15%.

**Lowest point**
0 m.

**Highest point**
2,141 m above sea level.

**Natural resources**
Vanadium, tungsten, antimony, silver, aluminum, talcum, marine resources, subtropical vegetation, and animals.

**Natural hazards**
Drought, flooding, front, tropical cyclone.

#### PEOPLE

**Total population, million**
51.59 (2010)

**Average annual population growth rate, %**
1.32 (2010)

**Population density, persons/km²**
195 (2010)

**Major ethnic groups**
Han 62%, Zhuang 32%, Yao 3%, Miao 1%, Dong 0.7%, Gelao 0.4%, others 0.9%

**Religion**
Taoism, Buddhism, Catholicism, other Christian denominations, Islam.

**Language**
Southwestern Mandarin Chinese, Chuang patois, and Cantonese.

**Poverty**

<table>
<thead>
<tr>
<th>Human Poverty Index/ Rank (refers to the entire PRC)</th>
<th>14.1 (2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Development Index/ Rank</td>
<td>7.5 (2010)</td>
</tr>
</tbody>
</table>

#### ECONOMY

**Total GDP, $ million**
141,350 (2010)

**Per capita GDP, $**
2,987 (2010)

**GDP per capita, $ PPP**
14.2 (2010)

**GDP per capita growth**
14.2 (2010)

**GNI per capita, $ PPP**

**GDP Composition by sector**

<table>
<thead>
<tr>
<th>Industry</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>17.5 (2010)</td>
</tr>
<tr>
<td>Industry</td>
<td>40.3 (2010)</td>
</tr>
<tr>
<td>Services</td>
<td>35.4 (2010)</td>
</tr>
<tr>
<td>Major economic activity</td>
<td>Industry</td>
</tr>
</tbody>
</table>

**Labor force, million**
27.66 (2009)

**Unemployment rate, %**
3.66 (2010)

**Value of exports, f.o.b., $ million**
8,096 (2010)

**Value of imports, c.i.f., $ million**
9,610 (2010)

#### ENVIRONMENT

**Total forest area, % of land area**
58 (2010)

**Average annual deforestation, %**
5.75 (2005)

**Protected area, % of total land area**
6.1 (2010)

**Freshwater resources per capita, annual, m³**
3,770.7 (2010)

**Freshwater withdrawal for agriculture, %**
67.3 (2010)

#### RURAL ENVIRONMENT

**Rural population, % of total population**
59.89 (2010)

**Rural population density, persons/km² of arable land**
624.01 (2010)

**Arable land, % of land area**
18.62 (2010)

**Permanent cropland, % of land area**
15.4 (2009)

#### URBAN ENVIRONMENT

**Urban population, % of total population**
40.11 (2010)

**Population in largest city, % of urban population**
37.2 (2010)

**Proportion of seats held by women in national parliament, %**
27.9 (2009)

**Proportion of seats held by women in national parliament, %**
27.9 (2009)

**HIV prevalence among 15-24-year-old women, %**
8.67 (2009)

**Government expenditure for health, % of GDP**
1.7 (2010)

**Energy efficiency of emissions**

<table>
<thead>
<tr>
<th>GDP per unit of energy use</th>
<th>4 (2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO₂ emissions, total million tons</td>
<td>1,171 (2010)</td>
</tr>
</tbody>
</table>
5–10 years will include infrastructure projects, industrial parks, major industrial projects, and development of shipping lines.

Guangxi is one of the PRC’s most important bases for growing sugarcane, vegetables, and fruit. In 2010, it produced 71.2 million tons of sugarcane, 21.3 million tons of vegetables, and 8.4 million tons of fruit. Forestry also plays an important role in the agricultural sector. In 2010, timber production reached 17.4 million cubic meters, 56% higher than in 2005. Pine resin is an important forestry product, with a harvest in 2010 of 495,800 tons.

Criss-crossed by rivers, Guangxi is rich in water resources. Surface water flowing in the region amounts to 188.2 billion cubic meters, or 6.3% of the nation’s total. The per capita water resources in Guangxi are estimated at 3,770.7 cubic meters, even higher than that of Yunnan. The three largest water systems running through the region are the Zhujiang (Pearl), Yangtze, and Duliu rivers. The energy potential of the region’s water resources has an estimated annual power generating capacity of 78.8 billion kilowatt hours. In 2010, Guangxi had a total installed capacity of 25.1 million kilowatts from existing hydropower stations, with an annually generated electricity of 47 billion kilowatt hours, leaving immense room for further development.

The southern section of Guangxi embraces the Beibu Gulf, a natural semi-enclosed bay in the northwestern South China Sea, covering an area of 129,300 square kilometers. The Beibu Gulf provides a favorable environment for many marine species. It is home to over 500 types of fish and shellfish. Among them over 50 are of commercial value, including red snapper, grouper, Spanish mackerel, butterfish, and red coat. In 2010, the marine fisheries output was 750,000 tons.
Guangxi is also known for its mineral deposits and serves as one of the 10 important production bases of nonferrous metals in the PRC. The region has especially abundant reserves of manganese and tin, which account for one third of the national total deposit. In addition, Guangxi leads in having reserves of vanadium, tungsten, antimony, silver, aluminum, talcum, and others. Bauxite proven reserves amount to 650 million tons and prospective reserves are estimated at 1 billion tons. Guangxi’s Pingguo Aluminum is the largest aluminum production company in the PRC and plans are afoot to make it the biggest aluminum industrial base in Asia.

The region has established several tourist attractions, including natural scenic spots, natural reserves, sites with cultural and historical relics, forest parks, and summer and winter resorts. In 2010, the number of domestic tourists reached 140.73 million and international tourist arrivals reached 2.5 million. The city of Guilin—a former capital—and nearby waterways are well known worldwide for their magnificent steep karst hill and mountain landscapes. But care will be needed to maintain the region’s biodiversity, which is threatened by economic development activities, including agricultural practices and over-extraction of natural resources.
Nanning

Nanning, sometimes called Yong, has a history of more than 1,680 years and is the capital of Guangxi Zhuang Autonomous Region. It is located in the southeast of the region in the Nanning basin, surrounded by mountains. Nanning is an important hub linking the southeastern coast with the southwestern inland, as well as the only coastline capital in the southwestern PRC. It has an area of 22,112 square kilometers and a population of 6.87 million.

Nanning enjoys a subtropical monsoon climate with relatively high temperatures and plenty of rainfall. The winters are short and summers are long. Its average annual temperature is 22.4 degrees Celsius. The Yong River flows through picturesque scenery and Nanning is rich in plant and water resources. There are more than 2,000 kinds of medicinal plants in the capital. The Yiling Caves and the Damingshan scenic areas are the region's premier tourist attractions. Nanning is being promoted as "The Green City of [the People's Republic of] China," where social, ecological, and economic systems are said to coexist harmoniously.

Nanning is the political, economic, cultural, educational, financial, and informational center of Guangxi. In 2010, Nanning's GDP was over $26.6 billion with a per capita GDP of $3,929.

Being a core city for the Beibu Gulf Economic Zone, Nanning provides the benefits of a coastal city, tax holidays, and other preferential treatment. Tertiary industries are flourishing and economic growth points have been linked mainly to tourism, real estate, conferences, exhibitions, and catering.
Yunnan Province, south of the Yun Mountains (hence the name) in the extreme southwest of the People’s Republic of China (PRC), houses an exceptionally rich biological diversity within its land area of 394,139 square kilometers.

Yunnan is the eighth-largest province of the PRC, bordered to the south and west by the Lao PDR, Myanmar, and Viet Nam. Located on the lush Yunnan-Guizhou Plateau, a continuation of the Tibetan Plateau to the northwest, the province is mountainous over 94% of its land area. The valleys between these mountain ranges contain the headwaters of major rivers like the Jinsha Jiang or Chang Jiang (Yangtze), Nu Jiang (Salween), Dulong Jiang (Ayeyarwady), and, of course, Lancang Jiang (Mekong River).

About 14% of the population, or 6.44 million (2010), lives in the provincial capital, Kunming. The rest live mainly in eastern river basins and in the center, while populations are sparse in the mountainous and semi-mountainous areas of the west and the northern and southern areas. Twenty-five ethnic groups make up almost a third of the population. Prominent among these are the Yi (the most populous), Bai, Hani, Zhuang, Yao, Dai, and Miao. The major religions in Yunnan are Buddhism, Islam, Christianity and Taoism.

Yunnan Province is also among the PRC’s least developed, with more poverty-stricken counties than any other province. Gross domestic product...
Habitat loss from logging, land clearing for cultivation, fuelwood collection, and hunting are threatening the diversity of flora and fauna in Yunnan Province. In the Ai Lao Shan Nature Reserve alone, 12 plant species are endangered. More than 14 species of economic or agricultural value are now protected by the provincial government. One of these is Ginkgo biloba, a plant widely used for various types of medicinal applications. The Government protects 13 kinds of mammals, including the black gibbon, which is on the verge of extinction. The habitat of the black gibbon used to be spread over 10 provinces in central and southern PRC; now it is found only in Yunnan Province and northern Viet Nam. The Government has established 29,600 square kilometers of protected areas in an effort to protect the endangered species. Recently, the Three Parallel Rivers of Yunnan Protected Areas were placed on the United Nations Educational, Scientific and Cultural Organization’s World Heritage List.
### Facts and Figures about Yunnan Province, PRC

#### Geography

<table>
<thead>
<tr>
<th>Location</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southwestern area of People’s Republic of China, surrounded by Guizhou, Guanxi, Sichuan, and the autonomous region of Tibet, bordering Myanmar, Lao PDR, and Vietnam</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total area, km²</th>
<th>394,139</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate</td>
<td>Subtropical monsoon in the southeast (East Asia monsoon) and southwest (South Asia monsoon); temperate between 2,000 and 3,000 m; and frigid in the high alpine in the northwest</td>
</tr>
<tr>
<td>Terrain</td>
<td>Largely mountainous especially in the north and west. A series of high mountain chains spreads across the province. A distinct canyon region to the west and a plateau region to the east.</td>
</tr>
<tr>
<td>Lowest point</td>
<td>Honghe River Valley in Hekou County, 76.4 m</td>
</tr>
<tr>
<td>Highest point</td>
<td>Kagebo Peak in Deqin County on the Deqin Plateau, 6,740 m</td>
</tr>
<tr>
<td>Natural hazards</td>
<td>Forest fires, landslides, and flashfloods</td>
</tr>
</tbody>
</table>

#### People

<table>
<thead>
<tr>
<th>Total population, million</th>
<th>46.02 (2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average annual population growth rate, %</td>
<td>0.69 (2010)</td>
</tr>
<tr>
<td>Population density, persons/km²</td>
<td>116.6 (2010)</td>
</tr>
<tr>
<td>Major ethnic groups</td>
<td>Han 66.6%, Yi 10.9%, Hani 3.5%, Pai 3.4%, Dai 2.7%, Zhuang 2.6%, others 4%</td>
</tr>
<tr>
<td>Religion</td>
<td>Buddhism and others</td>
</tr>
<tr>
<td>Language</td>
<td>Mandarin Chinese and ethnic dialects</td>
</tr>
</tbody>
</table>

#### Poverty

<table>
<thead>
<tr>
<th>Human Poverty Index/Rank</th>
<th>Human Development Index/Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of population below poverty line, %</td>
<td>14.1 (2010)</td>
</tr>
<tr>
<td>Proportion of population below $1.25 a day, %</td>
<td>51.3 (2010)</td>
</tr>
</tbody>
</table>

#### Education

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult literacy rate, %</td>
<td>93.97 (2010)</td>
</tr>
<tr>
<td>Government expenditure for education, % of GDP</td>
<td>5.19 (2010)</td>
</tr>
</tbody>
</table>

#### Gender Equality and Women Empowerment

<table>
<thead>
<tr>
<th>Ratio of girls to boys in primary and secondary education, %</th>
<th>90.3 (2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio of literate females to males among 15-24-year-olds, %</td>
<td>56.8 (2000)</td>
</tr>
<tr>
<td>Proportion of seats held by women in national parliament, %</td>
<td>26.8 (2000)</td>
</tr>
</tbody>
</table>

#### Health

<table>
<thead>
<tr>
<th>Under-5 mortality rate per 1,000 live births</th>
<th>15.31 (2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant mortality rate, per 1,000 live births</td>
<td>12.24 (2010)</td>
</tr>
<tr>
<td>Life expectancy at birth, years</td>
<td>68 (2010)</td>
</tr>
<tr>
<td>Maternal mortality ratio per 100,000 live births</td>
<td>33.91 (2010)</td>
</tr>
<tr>
<td>Undernourished children, weight for age under 5, %</td>
<td>3.6 (2010)</td>
</tr>
<tr>
<td>Proportion of population with access to an improved water source (rural area), %</td>
<td>85.1 (2010)</td>
</tr>
<tr>
<td>Proportion of population with access to an improved sanitation (rural area), %</td>
<td>56.4 (2010)</td>
</tr>
</tbody>
</table>

### Health (cont.)

| HIV prevalence among 15-24-year-old women, % | 86.2 (2010) |
| Contraceptive prevalence rate, % | 2.54 (2010) |
| Government expenditure for health, % of GDP | 2.54 (2010) |

#### Economy

<table>
<thead>
<tr>
<th>Total GDP, $ million</th>
<th>106,717 (2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per capita GDP, $</td>
<td>4,260 (2010)</td>
</tr>
<tr>
<td>GDP per capita, $ PPP</td>
<td>3,994 (2010)</td>
</tr>
<tr>
<td>GDP growth (annual %)</td>
<td>12.3 (2010)</td>
</tr>
<tr>
<td>GNI per capita, $ PPP</td>
<td>4,260 (2010)</td>
</tr>
</tbody>
</table>

#### Environment

| Total forest area, % of land area | 47.5 (2010) |
| Annual change rate of forest area, % | 1.34 (2010) |
| Protected area, % of total land area | 7.5 (2010) |
| Freshwater resources per capita, m³ | 4,224 (2010) |
| Freshwater withdrawal for agriculture, % | 64.6 (2010) |

### GDP Composition by sector

| Agriculture, % at current market | 15.3 (2010) |
| Industry, % at current market | 44.7 (2010) |
| Services, % at current market | 40.0 (2010) |
| Major economic activity | Industry and services |
| Labor force, million | 35.7 (2010) |
| Unemployment rate, % | 4.2 (2010) |
| Value of exports, $ million | 7,606 (2010) |
| Value of imports, $ million | 5,762 (2010) |
| Total external debt, $ billion | 2.5 (2010) |
| Debt service as percentage of exports of goods and services | 12.3 (2010) |

### Facts and Figures about Yunnan Province, PRC
Greater Mekong Subregion Atlas of the Environment

But comparing urban and rural dwellers highlights the rich-poor divide. Urban dwellers each earned on average about $2,373 in 2010, versus only $584 for rural dwellers.

Apart from subsistence crops, Yunnan grows rice, wheat, and other grains as major cash crops. Other important revenue earners are fruits (bananas, pineapples, and oranges), walnut and other nut-bearing trees, tea, coffee, sugarcane, soybeans, peas, rapeseed, and tobacco. There are more than 40 freshwater lakes, including Dian Chi, Er Hai, and Fuxian; these are important for aquaculture, which is strictly regulated and limited in the lakes.

The mountainous nature of the province limits cultivable land to 10.7% of the total, yet farmers comprise 80%–95% of the labor force. Cultivation is intensive. Terraced farmlands gird the hills and mountains and traverse the smaller areas of river basins and floodplains.

Yunnan is one of PRC’s, and Asia’s, largest flower producers and exporters, turning out 3 billion stems annually. It has three big flower producing areas—one each for tropical, temperate, and cold-climate bulb flowers.

The industries in the province, located mostly in Kunming, Yuxi, Qujing, and the Red River, produced $116.4 billion worth of goods in 2010. The major exports are sugar, tobacco, kidney
beans, tea, beer, cement, cigarettes, phosphates, jade ornaments, garments, tin, and machine tools.

More than 50 scenic spots of exceptional beauty make Yunnan a major tourist center as well. Within its borders are the primeval forests and magnificent animals of Xishuangbanna; the Stone Forest of Lunan; Kunming, the capital city, also once the secondary capital of a kingdom in the area; the lakes and mountains around Dali; and Lijiang under the snow-capped Jade Dragon Mountain. In 2010, more than 3 million international tourists visited these and other sites, generating about $1.5 billion in revenue.

The province also abounds in natural resources. Over one third of the land is forested, twice the average elsewhere in the PRC. Pine forests predominate throughout much of the province; the Yunnan pine and Simao pine, in particular, are prized for their high commercial value. Yunnan not only has more species of tropical, subtropical, temperate, and frigid-zone plants than anywhere else, but also has many ancient derivative plants, as well as species introduced from abroad. Among the 30,000 species of plants in the PRC, 18,000 are found in Yunnan. There are also about 300 species of mammals, 780 species of birds, and numerous species of fish, reptiles, and amphibians.

Blessed with enough rainfall and many rivers and lakes, the province produces an annual water flow of 194.1 billion cubic meters, three times that of the Yellow River. Rivers flowing into the province from outside add 153 billion cubic meters. This means that for each person in the province there are more than 4,224 cubic meters of water, compared to the national average of 2,500.

Hydropower resources are abundant and are relatively concentrated in the water systems of the Jinsha, Lancang (Mekong), and Nu rivers. Planned projects on the Lancang River (main stem) total 25,605 megawatts.

The province is also rich in mineral resources and is a major producer of copper, lead, zinc, tin, and aluminum. Gejiu City, whose tin reserves are the PRC’s most plentiful, is well known as “the Kingdom of Tin.” At present, Yunnan still has at least 382 million tons of iron ore reserves, 6.25 billion tons of coal, and about 660 million tons of phosphorus.

Recognizing the harmful effect on the environment of past exploitation of natural resources, the Government is pursuing economic growth based on environmental sustainability.

Agricultural and rural productivity must increase to raise incomes in the rural areas, where many of Yunnan’s poor live. Governance, economic, and environmental reforms, and more investments in social infrastructure for human development, will allow people to develop their full potential and lead productive lives. Yunnan could well become a major growth hub in southwestern PRC.
Kunming

Girded by mountains and bordered by Dian Chi Lake to the south, Kunming, the capital of Yunnan Province, is a city of picturesque landscapes and a pleasant temperate climate often described as “eternal spring.” Kunming’s fascinating arboretum and botanical garden show off many of Yunnan’s rare and endangered plant species.

Kunming has a total population of about 6.44 million. The city dates back to the Han Dynasty (206 BC–220 AD), but did not become part of what is now the People’s Republic of China until the 13th century. Known at the time as Yünnan or Yünnanfu, it was renamed Kunming in 1913. Modern industrialization began around the time of World War II and accelerated after 1949 with the construction of large industrial complexes to produce iron, steel, and chemicals. The city is now a hub of commerce, industry, and transport, which generated 30% of gross provincial output in 2010. It is also a major tourist destination for both domestic and international visitors. Based on Kunming’s location as a “border” city, its existing and planned infrastructure, and its specific (natural and human) resources, Kunming intends to become a transportation hub of national importance, bridging the gap to Southeast Asia.

Recent foreign investment has given rise to more than 1,100 enterprises, mostly in the flower, food, timber processing, real estate, tourism, electrical and mechanical, and high-tech industries. The Kunming Economic and Technological Development Zone was set up for commerce, trade, and real estate activities. The High-Tech Industrial Development Zone hosts companies in biology and biomedical engineering, mechanical and electrical engineering, new building materials, and information technology.

Given such rapid urbanization and industrial growth, however, environmental problems have been inevitable. Inadequate wastewater treatment facilities, a faulty sewerage system, and uneven enforcement of environmental regulations have led to widespread pollution, especially of lakes and water systems. The Government, with external assistance, is addressing these problems as a matter of priority.
The Lao People’s Democratic Republic (Lao PDR) is the only landlocked country in Southeast Asia. It shares borders with the People’s Republic of China (PRC) to the north, Viet Nam to the east, Cambodia to the south, Thailand to the west, and Myanmar to the northwest. The Lao PDR serves as a “land bridge” for the subregion. Most of the country’s land, totaling 236,800 square kilometers, is rugged calciferous mountains bisected by narrow river valleys. There are some 4,600 kilometers of navigable waterways, of which the Mekong River is the most important; more than a third of the Mekong’s volume originates in the Lao PDR’s vast watersheds. The Mekong enters the country from the PRC’s Yunnan Province in the north, forms the border with Thailand for 1,100 kilometers and exits the Lao PDR into Cambodia after flowing over Khone Phapheng Waterfall in the southernmost part of the country.

More than half the country is too steep for agriculture. In addition, a little more than half of the land and a quarter of the country’s villages are affected by unexploded ordnance. Steady progress is being made to clear this deadly legacy of years of conflict; however, large areas in the eastern part of the country and the Xieng Khouang Plateau are still seriously affected.

The land holds a population of about 6.26 million, two thirds of which are rural. Population density is by far the lowest in the region, at about
26 persons per square kilometer. The population growth rate has slowed from 2.5% in 2001 when it was the highest in the subregion, but remains high at 2.2% in 2010. The Lao Front for National Construction has identified 49 ethnic groups under four main ethnolinguistic classes: Lao-Tai or Tai Kadai, Mon-Khmer, Hmong Lu-Mien, and Chinese-Tibetan. There is a diversity of religions, but most of the people are Buddhist.

Although more than one quarter of the population is classified as poor, economic and social indicators confirm that living standards are steadily improving. Average life expectancy has increased in the last decade by more than 10 years to 64.7 years and the country's Human Development Index rating, 0.524, has improved its ranking from 143 to 138 out of 187 countries over the same period. The
### Facts and Figures about the Lao People’s Democratic Republic

#### GEOGRAPHY

<table>
<thead>
<tr>
<th>Location</th>
<th>Southeast Asia, northeast of Thailand, west of Vietnam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total area, km²</td>
<td>236,800</td>
</tr>
<tr>
<td>Climate</td>
<td>Tropical monsoon; rainy season (May to October); dry season (November to April)</td>
</tr>
<tr>
<td>Terrain</td>
<td>Mostly rugged mountains; some plains and plateaus</td>
</tr>
<tr>
<td>Lowest point</td>
<td>Mekong River, 70 m</td>
</tr>
<tr>
<td>Highest point</td>
<td>Phu Bai in Xiengkhouang, 2,820 m</td>
</tr>
<tr>
<td>Natural resources</td>
<td>Timber, hydropower, coal, gypsum, tin, gold, gemstones</td>
</tr>
<tr>
<td>Natural hazards</td>
<td>Floods, droughts, earthquakes, and blight</td>
</tr>
</tbody>
</table>

#### PEOPLE

| Total population, million | 6.26 (2010) |
| Average annual population growth rate, % | 2.2 (2010) |
| Population density, persons/km² | 26 (2010) |
| Major ethnic groups | Lao-Tai 66%, Mon-Khmer 21.5%, Chinese-Tibetan 3.1%, Hmong-Lu Mien 8.8%, Other 0.6% |
| Religion | Buddhism |
| Language | Lao (official), ethnic dialects, French, and English |

#### Poverty

- Human Poverty Index/Rank: 30.7; 94th out of 135 countries (2009)
- Human Development Index/Rank: 0.524; 138th out of 187 countries (2011)
- Proportion of population below poverty line, %: 27.6 (2009)
- Proportion of population below $1.25 a day, %: 33.9 (2009)

#### Education

- Net enrollment ratio in primary education, %: 96.8 (2010)
- Adult literacy rate, %: 72.7 (2005)
- Government expenditure for education, % of GDP: 2.5 (2009)

#### Gender Equality and Women Empowerment

- Ratio of girls to boys in primary and secondary education, %: 90 (2010)
- Ratio of literate females to males among 15 years-old and above, %: 77 (2008)
- Proportion of seats held by women in national parliament, %: 25.2 (2010)

#### Health

- Infant mortality rate per 1,000 live births: 42 (2010)
- Life expectancy at birth, years: 64.7 (2010)
- Maternal mortality ratio per 100,000 live births: 470 (2010)
- Undernourished children, weight for age, %: 37 (2009)
- Proportion of population with access to an improved water source, %: 67 (2010)

### Health (cont.)

- Proportion of population with access to improved sanitation, %: 63 (2010)
- HIV prevalence among 15-24-year-old women, %: 0.2 (2009)
- Contraceptive prevalence rate, %: 38 (2009)
- Government expenditure for health, % of GDP: 1.3 (2010)

#### ECONOMY

- Total GNI (GNP), $ million: 6,500 (2010)
- Per capita GNI (GNP), $: 1,010 (2010)
- Total GNI (GNP), $ million: 6,500 (2010)
- Per capita GNI (GNP), $: 1,010 (2010)
- GDP Composition by sector
  - Agriculture, %: 30.5 (2011)
  - Industry, %: 24.5 (2011)
  - Services, %: 38.7 (2011)
- Value of exports, $ million: 1,005 (2009)
- Value of imports, $ million: 1,414 (2009)
- Total external debt, $ billion: 3.9 (2010)
- Debt service as percentage of exports of goods and services: 16.2 (2010)

#### ENVIRONMENT

- Total forest area, % of land area: 44 (2010)
- Average annual deforestation, %: (-) 0.5 (2005-2010)
- Protected area, % of total land area: 16.3 (2009)
- Freshwater resources per capita, m³: 53,782 (2010)
- Freshwater withdrawal for agriculture, %: 90 (2010)

#### Rural Environment

- Rural population, % of total: 67 (2010)
- Rural population density, persons/km² of arable land: 366 (2009)
- Arable land, % of land area: 5.9 (2009)
- Permanent cropland, % of land area: 0.5 (2009)

#### Urban Environment

- Urban population, % of total: 33 (2010)
- Population with access to improved sanitation, % of urban population: 89 (2010)
- Solid waste generation in urban areas, kg/capita/day: 0.64 (2008)

#### Energy Efficiency of Emissions

- CO₂ emissions, million metric tons: 1.811 (2009)
- CO₂ emissions per capita, total metric tons: 0.2963 (2009)
The infant mortality rate has fallen by almost 50% and the maternal mortality rate, while still high at 470 (2010) per 100,000 live births, is an improvement over the 1992 rate of 650. However, while nearly all children attend primary school, the adult literacy rate has increased only slightly in the past decade and remains the lowest in the subregion.

Growth in gross domestic product (GDP) was 8.1% in 2011, up from 7.5% in 2009 and comparing favorably with earlier GDP growth of 6.0%–6.3% from 1992 until 1997. Despite this growth, the gap between urban and rural consumption widened, which suggests greater inequality. The high rates of urban population growth, compared with the national average, give cause for concern because of increased risk of overburdening basic services and the absorptive capacity of the natural environment.

I n general, the Lao PDR’s environmental problems are relatively minor compared with those of the rest of Southeast Asia. The towns are mainly small, quiet, and residential, although motorized traffic is increasing and industrial activity is growing in a few of the largest towns. The economy is largely resource-based and its growth depends heavily on environmental sustainability.

Agriculture was formerly the largest sector, accounting for more than half the GDP and employing the great majority of the labor force. Rice, maize, sugarcane, tobacco, peanuts, and cotton were leading contributors to economic growth. However, by 2011, agriculture’s share of the economy had fallen to 30.5%, and the service sector became the largest contributor (38.7%) to GDP. Tourism is growing rapidly, with international arrivals surpassing 2.5 million in 2010—more than double that in 2005. Lao PDR’s tourism industry generated $381 million in receipts during 2010, making it the country’s second largest source of foreign exchange that year after mineral exports. The majority of visitors come from neighboring Thailand and the PRC, with growing numbers coming from Europe and North America.

The manufacturing sector’s share of the economy has been growing slowly over the past decade, reaching 24.5% in 2011. The country’s major industries are textiles, garments, footwear, beer and soft drinks, wood and plastic products, and tobacco and cigarettes. Much of the sector is export oriented.

Hydropower, too, has been a major export in recent years, mostly to Thailand and Viet Nam. Technically exploitable hydropower potential is vast, about 26,000 megawatts, two thirds of this in the major Mekong sub-basins. In 2010, ten large and medium hydropower plants with an installed capacity of 1,976 megawatts were in operation while another 4 with a capacity of 1,265 megawatts were under construction. Various projects in planning and at the feasibility
stage are expected to add another 18,721 megawatts, bringing total output closer to the potential. However, large-scale hydropower and other projects affecting the Mekong River and its tributaries, if not appropriately planned, may impede the movements of fish—which are important in the Lao diet—or cause other significant changes in the river system.

The country’s steady economic growth has created pressure on its biological resources. Forest cover in total has declined considerably over the past 50 years from 70% of the land area in 1940 to 44% in 2010. Both the quality and quantity of forest have declined markedly as a result of population growth, encroachment, slash-and-burn cultivation, illegal trade in wildlife and forest products for food and traditional medicines, excessive timber harvesting, forest fires, and the effects of wartime bombing and chemical defoliation.

Deforestation is estimated at 0.5% annually. It has caused erosion, silted reservoirs and navigation channels, and negatively affects the productivity of irrigation systems. Deforestation is also undermining the country’s rich biological diversity, which is dependent on wide variations in climate, soils, and ecological niches created by the highly mountainous terrain.

In its 4th National Report to the Convention on Biodiversity, the Government reported that there are 1,140 animal species in the country, of which 319 are of national or global conservation significance. The Government has, therefore, stepped up reforestation to increase forest cover and has established 23 National Protected Areas and two corridors covering 16.3% of the land area. In the provinces of Champasak, Attapeu, and Xekong, the Government is carrying out the Biodiversity Conservation Corridors project, which applies a landscape approach to forest restoration in order to improve livelihoods and reverse the decline in biodiversity. Some provincial forest reserves are being upgraded to national protection forest status, taking into consideration trade-offs between the needs for development and conservation.

Fish and a wide range of other aquatic animals supply most protein consumed by the people. More than half are caught in the Mekong River and its tributaries, and the rest come from swamps, rainfed rice fields, floodplains, reservoirs (natural and human-made), and wetlands. There are about 500 indigenous fish species. The Government is promoting fisheries to help achieve food self-sufficiency and working to tackle such issues as the effects of hydropower dams, unsustainable fishing, introduction of exotic fish species, illegal trading in aquatic wildlife, pesticide use, industrial pollution, and sedimentation of rivers, streams, and reservoirs from forest clearance.
A Challenging Land

The geography of the Lao PDR presents its people with many challenges. The northern topography is largely mountainous, with elevations above 500 meters typically characterized by steep terrain, narrow river valleys, and low agricultural potential. The soil is heavily leached and acidic. Many people still practice shifting cultivation to survive. In the central and southern plains, where the slopes are moderate and the soils fertile and less acidic, there are different problems. People converging in these areas are placing increasing pressure on the cultivated land. In a country that is the subregion’s least densely populated, each hectare of cultivated land supports 5 people, compared with about 3 per hectare of cultivated land in Thailand and 10 in Viet Nam.

Vientiane

Vientiane, capital city of the Lao PDR, is Asia’s biggest village. The name means “city of sandalwood,” a fragrant and valuable tree, but because “moon” is pronounced the same as sandalwood in the Lao language, “city of the moon” is a popular interpretation. A serene oasis among Southeast Asian capitals, Vientiane harks back to a quieter age before skyscrapers, extensive development, and industrialization. There are few tall buildings and traffic is light. The city has a rich cultural legacy as its historical monuments, temples, and other structures show. Today, the most famous landmark is That Luang or the Great Stupa, 3 km northeast of the center of Vientiane. That Luang was built in 1566 by King Setthathirat and has been restored many times since. Other notable sites are the Victory Monument (Patuxai), Buddha Park (Wat Xieng Khouane), Lao Revolutionary Museum, and Wat Ho Prakeo.

Vientiane covers an area of 180 km$^2$ along the banks of the Mekong River and is home to about 10% of the Lao PDR’s population. Vientiane’s population has been growing rapidly at nearly 5% per year—more than twice the national growth rate—mainly due to migration from rural areas. This is causing strains on the environment and the quality of urban services. Solid waste generation in Vientiane and other urban areas in Lao PDR is increasing with rising affluence and consumption. Most of the city’s domestic waste is collected by the State or private companies and carted to a dumpsite on the outskirts of town. Facilities for sewage treatment in Vientiane and the major provincial towns are rudimentary but improving. Reliable piped water supply is however, widely available in Vientiane, provincial capitals, and some secondary towns.
By virtue of its strategic location, Myanmar forms a bridge between the peoples and cultures of South and Southeast Asia. The largest country in the subregion, it borders India and Bangladesh to the northwest, the People’s Republic of China to the northeast, the Lao People’s Democratic Republic to the east, and Thailand to the southeast.

Two thirds of the population of about 60 million live in rural areas. There are as many as 135 ethnic groups in the country, the largest of which are the Myanmars, who comprise 68% of the total. About 89% of the population are Buddhists, but, given the country’s geographic location, it is also home to Christians, Muslims, and Hindus. In 2010, about 15.4 million people had no means to support their basic subsistence. Life expectancy at birth is low, 65 years. The infant mortality rate is 50 per 1,000 live births, the under-five mortality rate is 66 per 1,000 live births, and maternal mortality is 200 per 100,000 live births—all three indicators are the highest in the subregion.

Private enterprise in Myanmar is dominated by services, agriculture, light industry, and transport. The recovery in financial year 2009 was led by improved results from agriculture, mining, manufacturing, and the transport and communications subsectors. There is substantial state control in some areas, mainly energy, heavy industry, and the rice trade. Government policy in the 1990s aimed to revive the economy after 3 decades of tight central planning.

Growth recovered to an estimated 5.3% in the fiscal year 2010, after slowing in the previous year owing to the impact of cyclone Nargis and weakness in demand for imports from neighboring economies. Gross domestic product (GDP) grew by an average of 5.2% between 2005 and 2010. Agriculture, forestry, and fisheries account for about 36% of GDP and one fourth of total exports; the sector employs more than 50% of the total labor force.

Fertile cultivable land lies mainly in the valleys between the mountain ranges and in the 50,000 square kilometer Ayeyarwady Delta. Three parallel chains of forested mountain ranges running north to south—the Rakhine Yoma and Bago Yoma ranges and the Shan Plateau—separate the country’s three river systems: the Ayeyarwady (2,170 kilometer long) and a tributary, the Chindwin (960 kilometers); the Sittaung (298 kilometers); and the Thanlwin (1,274 kilometers).

Besides substantial arable land, Myanmar is endowed with large freshwater and marine resources, and significant deposits of minerals, including oil and gas. The wide range of climatic conditions accommodates both tropical crops and those that thrive in moderate temperate climates. The main crops are cereals (such as wheat, maize, millet, and especially rice), oilseeds (including groundnut, sesame, and sunflower seeds), pulses, industrial crops (cotton, jute, rubber, coffee, mulberries, oil palm, and tobacco), and horticultural crops.

Upper: The majestic Shwedagon Pagoda in Yangon, also known as the Great Dagon Pagoda. It is said to be more than 2,600 years old. Lower: Mother and child at Inle Lake village market.
Top: Potter from the Shan ethnic minority. Middle: Yangon City from Bandoola Garden. Bottom: Mother and child at a village market, Inle Lake.
**Facts and Figures about Myanmar**

**GEOGRAPHY**

**Location** Southeast Asia, bordered on the north and northeast by the People's Republic of China, on the east and southeast by the Lao People's Democratic Republic and Thailand, on the south by the Andaman Sea and the Bay of Bengal and on the west by Bangladesh and India.

**Total area, km²** 676,578

**Climate** Tropical monsoon; cloudy, rainy, hot, humid summers (southwest monsoon, June to September); less cloudy, scant rainfall, mild temperatures, lower humidity during winter (northeast monsoon, December to April)

**Terrain** Central lowlands ringed by steep, rugged highlands

**Lowest point** Andaman Sea 0 m

**Highest point** Hkakabo Razi, 5,881 m

**Natural resources** Petroleum, timber, tin, antimony, zinc, copper, tungsten, lead, coal, some marble, limestone, precious stones, natural gas, hydropower

**Natural hazards** Destructive earthquakes and cyclones, flooding and landslides common during rainy season (June–September); periodic droughts

**PEOPLE**

**Total population, million** 60.38 (2011)

**Average annual population growth rate, %** 1.01 (2011)

**Population density, persons/km²** 289 (2011)

**Major ethnic groups** Bamar 68%, Tibeto-Burman 18%, Sino-Thai 8%, Mon-Khmer 5%, and others 2%

**Religion** Buddhist 89.4%, Animist 1.2%, Hindu 0.5%, Muslim 3.9%, Christian 4.9%, and others 0.1%

**Language** Burmese and ethnic dialects

**Poverty**

**Human Poverty Index/ Rank** 20.4, 77th out of 135 countries (2009)

**Human Development Index/ Rank** 0.483, 149th out of 187 countries (2011)

**Proportion of population below poverty line, %** 25.6 (2010)

**Education**

**Net enrollment ratio in primary education, %** 87.7 (2010)

**Adult literacy rate, %** 90.6 (2010)

**Gender Equality and Women Empowerment**

**Ratio of girls to boys in primary and secondary education, %** 94.1 (2010)


**Health**

**Under-5 mortality rate, per 1,000 live births** 66 (2010)

**Infant mortality rate, per 1,000 live births** 50 (2010)

**Life expectancy at birth, years** 65 (2010)

**Maternal mortality ratio, per 100,000 live births** 200 (2010)

**Undernourished children, weight for age, %** 32 (2010)

**Proportion of population with access to improved water source, %** 69.4 (2010)

**Proportion of population with access to improved sanitation, %** 79 (2010)

**Government expenditure for health, % of GDP** 0.2 (2009)

**ECONOMY**

**Total gross national income (GNI), $ million** 42,026 (2010)

**Per capita GNI, $** 876 (2010)

**GDP Composition by sector**

<table>
<thead>
<tr>
<th>Sector</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>36.4 (2010)</td>
</tr>
<tr>
<td>Industry</td>
<td>26.0 (2010)</td>
</tr>
<tr>
<td>Services</td>
<td>37.6 (2010)</td>
</tr>
</tbody>
</table>

**Major economic activity** Services and agriculture

**Labor force, million** 29.54 (2009)

**Unemployment rate, %** 2.5 (2010)

**Value of exports, $ million** 6,413.0 (2010)

**Value of imports, $ million** 9,589.4 (2010)

**Total external debt, $ billion** 9.191 (2010)

**Debt service as percentage of exports of goods and services** 1.3 (2006)

**ENVIRONMENT**

**Total forest area, % of land area** 46.96 (2010)

**Average annual deforestation, %** (-)0.9 (2000–2010)

**Protected area, % of total land area** 5.60 (2012)

**Freshwater resources per capita (annual), m³** 330,838

**Freshwater withdrawal for agriculture, %** 90.9

**Rural Environment**

**Rural population, % of total** 69.24 (2011)

**Rural population density, persons/km² of arable land** 315 (2009)

**Arable land, % of land area** 16.9 (2009)

**Permanent cropland, % of land area** 1.7 (2009)

**Urban Environment**

**Urban population, % of total** 30.76 (2011)

**Population in largest city, % of urban population** 27 (2010)

**Population with access to improved sanitation, % of urban population** 84.1 (2010)

**Solid waste generation in urban areas, kg/capita/day** 0.267 (2010) Yangon; 0.53 (2010) Mandalay

**Energy Efficiency of Emissions**

**CO₂ emissions, total million tons** 11.093 (2009)

**CO₂ emissions per capita, total tons** 0.233 (2010)

**Energy use per capita, kg of oil equivalent** 316 (2009)

---

With a coastline of more than 2,800 kilometers, 8.2 million hectares of inland water bodies, and 0.5 million hectares of swamp areas along the coast, Myanmar is endowed with abundant fishery resources. Based on official estimates, the maximum sustainable yield of freshwater fisheries is 1.6 million tons and that of marine fisheries, 1.8 million tons. In addition to fishing, Myanmar’s inland waters have massive hydropower potential, of which only about 1% is now exploited.

Forest resources cover about half of the land area and also play a dominant role in the country’s development. As Thailand’s supplies of top-quality teak have dwindled, Myanmar, whose forests hold about 80% of the teak remaining in the world, could eventually be the sole supplier. Shrinking world supply pushed up the price of top-quality teak in 2010 to nearly $2,820 per hoppus ton (or 1.8027 cubic meters) of teak logs. Besides teak and other hardwoods, Myanmar’s forests also yield bamboo, rattan, and other products.

But the forests are under threat from logging, shifting cultivation, and fuelwood extraction. Shifting cultivation is practiced by up to 2 million people living mostly in the Kachin, Kayah, Kayin, Chin, and Shan states. Furthermore, few rural homes have gas or electricity. The people rely heavily on fuelwood, leading to depletion of forest cover in marginal forests outside the reserve forest areas. Obviously, as the population grows, the demand for fuelwood will grow.

Myanmar is one of the richest areas of natural resources in the world, and its ecosystems are home to numerous fauna and flora species, some of which have become endangered. The country, once called the “last frontier of biodiversity in Asia,” has a high species tally: 11,800 plants, 251 mammals, 1,056 birds, 272 reptiles, 82 amphibians, 310 freshwater fish, and 465 marine fish. The count includes 841 medicinal plant species, 96 types of bamboo, and 37 rattan species.

Myanmar also has a rich mineral resource base, which offers considerable potential for commercial development. The most important minerals are gemstones, tin, tungsten, zinc, lead, silver, copper, gold, coal, and industrial minerals. There were 522 metal mines and 26 nonmetal mines in 2008, including some private sector operated mines. In addition, Myanmar has major offshore oil and gas reserves, some of which are already being exploited in cooperation with foreign firms.
Since its shift to market-oriented policies in 1988/1989, the Myanmar Government has encouraged private sector participation and foreign investment in industry. The pace of industrialization has been slow, partly because of the shortage of foreign exchange and disruptions caused by unrest in the production of energy. By 2010, a total of 25 enterprises invested nearly $20 billion in agriculture (0.7%), mining (7.0%), oil and gas (50.9%), manufacturing (0.3%), and the power generating sector (41.1%). Other industrial products are textiles, foodstuffs, pharmaceuticals, ceramics, paper, chemicals, automobiles, agricultural machinery, machine tools and electrical appliances, and tires and other rubber products. Top exports in 2010 were gas (28.4%), agricultural products (13.6%), wood products (7.0%), and garments (4.3%).

Myanmar, as a year-round tourist destination, offers not only rich cultural attractions but also unique nature’s endowment that make a great potential for tourism development of the country.

Entry procedures have been streamlined; a visa on arrival is granted for certain package tours and to package tour groups from countries without Myanmar representation. An E-visa system will soon be available.

Economic activities have created new pressures on the country’s natural resource base and environment. The exploitation of natural gas and minerals and the development of large dam projects continue. There is little air and water pollution from industry or agriculture because of the low level of industrialization and the small amount of chemicals used in agriculture. This provides Myanmar with the opportunity to design effective policies and programs for pollution management and control in anticipation of future industrial development and agricultural expansion. Sustainable development will depend, in part, on new environmental policies and regulations, combined with financial support to improve institutions and environmental management skills.
Nay Pyi Taw

Nay Pyi Taw, translated as “royal capital,” “seat of the king,” or “abode of kings,” is the new capital city of Myanmar, located 320 kilometers north of Yangon (Rangoon), the former capital. The name literally means “royal city of the sun” in Burmese. Nay Pyi Taw is located between the Bago Yoma and Shan Yoma mountain ranges.

The embryonic city covers an area of 7,054 square kilometers. Construction began in 2006 and the population is already nearly 1 million, making it the country’s third largest city after Yangon and Mandalay, although many people presently commute between Yangon and Nay Pyi Taw, a 4-hour drive.

Nay Pyi Taw is also a transportation hub adjacent to the Shan, Kayah, and Karen states. A new 8-lane highway linking Yangon with Nay Pyi Taw directly was opened in March 2011. This highway has become part of the 563 kilometer Yangon-Nay Pyi Taw-Mandalay highway, while 4-, 6- and 8-lane roads and even a 20-lane boulevard have been built across the city. An international airport is also under construction.

The sprawling city with its two new “Hluttaws,” or legislative chambers, is a maze of 53 ministry buildings, as well as government mansions, civil servants’ quarters, and presidential palaces, complete with grand Roman-style pillars—all rising from dusty, arid scrubland. At its heart is the parliamentary complex’s 31 buildings, with pagoda-style roofs. It has football grounds; basketball, volleyball, and tennis courts; billiards rooms and bowling alleys; and a 30,000 capacity stadium under construction. On completion of the stadium, Myanmar looks forward to hosting international sports events, including the Southeast Asian Games.

The Uppatasanti Pagoda in Myanmar’s new capital is a replica of the magnificent Shwedagon Pagoda in Yangon. The shimmering golden pagoda, 99 meters high, is visible from all major roads leading into the capital. Other attractions include a planetarium, zoological garden, and Myanmar’s biggest gem museum containing unique pearls, jade, and rubies.

The National Landmark Garden is a model in miniature of the states and divisions of Myanmar on a 160 hectare plot that also includes displays of traditional houses of national ethnic groups and their traditional food stalls, as well as golf courses, resort hotels, and a shopping mall.

A large reservoir, the Chaungmagyi Dam, was constructed between nearby mountain ranges for greening the city and to provide adequate water supply.
With its warm hospitality, flavorful cuisine, ancient traditions, vibrant culture, beaches, and hill resorts, plus the shops, entertainment, and historic buildings of Bangkok, the capital city, Thailand is a well known tourist destination in the subregion. It should, therefore, come as no surprise that the country was at the center of the Asian economic miracle in the 1990s, just as geographically it lies at the heart of the Southeast Asian mainland.

It is bordered by Myanmar to the west, the Lao People’s Democratic Republic and Cambodia to the east, and peninsular Malaysia to the south. Within a land area of 513,116 square kilometers, the country consists of four main upland tracts—in the west, north, northeast, and southeast, respectively surrounding a large central plain drained by the principal river, the Chao Phraya; and a long isthmus in the southwest where it meets Malaysia.

More than half of the population of about 67 million (in 2010) is rural. Thailand’s main natural resources are agricultural, particularly in the bountiful central plain (and to a lesser extent the Khorat Plateau), which produces a substantial surplus of rice. In the late 1950s, large areas were opened up for the cultivation of cassava (tapioca), kenaf (upland jute), corn, cotton, pineapple, soybeans, sugarcane, coconut, and rubber. Rice and other processed agricultural products, textiles and garments, furniture, beverages, and tobacco are major exports. Thailand today, like Viet Nam, is a net food exporter.

Thailand’s abundant arable land, water, forest, fish, and wildlife resources have provided the raw materials for the impressive economic growth achieved over the last 50 years. However, as the manufacturing and service sectors expand, the relative role of primary production is declining.
Upper: Exhibit of Thai orchids at the Siam Paragon, a large shopping mall in Bangkok. Lower: Heavy traffic, Bangkok.
Facts and Figures about Thailand

**GEOGRAPHY**

**Location** Southeast Asia, bordering the Andaman Sea and the Gulf of Thailand, southeast of Myanmar

**Total area, km²** 513,116 (2009)

**Climate** Tropical; rainy, warm, cloudy southwest monsoon (mid-May to September), dry, cool northeast monsoon (November to mid-March), southern isthmus always hot and humid

**Terrain** Central plain; Khorat Plateau in the east; mountains elsewhere

**Lowest point** Gulf of Thailand, 0 m

**Highest point** Doi Inthanon, 2,576 m

**Natural resources** Limestone, tin, rubber, natural gas, tungsten, tantalum, timber, lead, fish, gypsum, lignite, fluorspar

**Natural hazards** Drought, flooding

**PEOPLE**

**Total population, million** 67.31 (2010)

**Average annual population growth rate, %** 0.6 (2008-2010)

**Population density, persons/km²** 213 (2010)

**Major ethnic groups** Thai 85%, Chinese 10%–12%, Malay 5% and Mon, Khmer and highland ethnic groups 1%–2% (2000)

**Religion** Buddhist 98%, Muslim 0.46%, Christian 0.01%, Others 1.53% (2005)

**Language** Thai, English (secondary business language), ethnic and regional dialects

**Poverty**

**Human Poverty Index/Rank** 8.5; 41st out of 135 countries (2009)

**Human Development Index/Rank** 0.654; 92nd out of 169 countries (2010)

**Proportion of population below poverty line, %** 7.8 (2009)

**Proportion of population below $1.25 a day, %** 10.8 (2009)

**Education**

**Net enrollment ratio in primary education, %** 90 (2009)

**Adult literacy rate, %** 94 (2005)

**Government expenditure for education, % of GDP** 4.2 (2010)

**Gender Equality and Women Empowerment**

**Ratio of girls to boys in primary and secondary education, %** 103 (2009)

**Ratio of literate females to males among 15 years-old and above, %** 100 (2004–2008)

**Proportion of seats held by women in national parliament, %** 13.3 (2010)

**Health**

**Under-5 mortality rate, per 1,000 live births** 13 (2010)

**Infant mortality rate, per 1,000 live births, years** 11 (2010)

**Life expectancy at birth, years** 73.93 (2010)

**Maternal mortality ratio, per 100,000 live births** 48 (2010)

**Undernourished children, weight for age-under 5, %** 21 (2009)

**Proportion of population with access to an improved water source, %** 96 (2010)

**Proportion of population with access to improved sanitation, %** 96 (2010)

**ECONOMY**

**Total GNI, $ million** 305,087 (2010)

**per capita GNI, $** 4,526 (2010)

**Government expenditure for health, % of GDP** 2 (2010)

**GDP Composition by sector**

**Agriculture, %** 11.6 (2010)

**Industry, %** 43.3 (2010)

**Services, %** 45.1 (2010)

**Labor force, million** 38.64 (2010)

**Unemployment rate, %** 1 (2010)

**Value of exports, $ million** 193,600 (2010)

**Value of imports, $ million** 179,600 (2010)

**Total external debt, $ billion** 64.8 (2008)

**Debt service as percentage of exports of goods and services** 7.7 (2008)

**ENVIRONMENT**

**Total forest area, % of land area** 33.4 (2008)

**Annual change rate of forest area, %** 0 (2000-2010)

**Protected area, % of total land area** 19 (2008)

**Freshwater resources per capita, m³** 6,345 (2010)

**Freshwater withdrawal for agriculture, %** 90 (2007)

**Urban Environment**

**Urban population, % of total population** 34 (2010)

**Population in largest city, % of urban population** 29.6 (2010)

**Population with access to improved sanitation, %** 95 (2010)

**Energy Efficiency of Emissions**

**GDP per unit of energy use** 5.2 (2009)

**CO₂ emissions, million tons** 220 (2010)

**CO₂ emissions (tons per capita)** 3.31 (2010)

**Energy use per capita, kg of oil equivalent** 1,503.74 (2009)
Although the agricultural sector employed approximately 40% of total labor force in 2010, primary production and processing of agricultural and natural resources accounted for just a little more than one tenth of gross domestic product (GDP) and one fifth of exports. By comparison, the industrial sector contributed 43.3% to GDP in 2010.

Thailand is not especially well endowed with minerals. Limestone for cement manufacture has overtaken lignite coal as its most important mineral production. The country is still one of the world’s top ten producers of tungsten and tin, but it now also exports computers and computer components, integrated circuits, and cement.

Thailand’s rapid economic development over the past 5 decades has strained environmental and natural resources. In fact, the damage to the environment will need to be repaired and improvements made to ensure that further economic development is not constrained.

The substantial opening of uplands in the late 1950s shrank the forest cover from about half of the land area in 1961 to about one third in 2010. The resulting changes in the use of land, including the loss of forest cover, inevitably reduced species diversity and abundance. In some areas soil erosion has approached 30 tons per hectare per year and has affected a third of the land, damaging the watersheds and, consequently, the supply of freshwater. More than half of the country’s villages are reportedly short of water and the cities, particularly Bangkok, face the continuing threat of land subsidence as more groundwater is extracted to meet their increasing demand for water.

Meanwhile, intensive fishing, an activity in which Thailand ranks third amongst the world’s fish exporters (in 2008), has severely reduced the country’s highly diverse and naturally productive coastal resources, driving its fishing fleet deeper into international fishing areas.

**Economic Success, Social Progress**

Thailand enjoyed unprecedented economic success for several decades before the regional financial crisis in 1997, when growth became negative. Since then, economic growth has see-sawed, with GDP growth rising from 2.2% in 2001 to 7.3% in 2003 and falling to -2.3% in 2009, following the global financial crisis, but rebounding remarkably to 7.8% in 2010 despite political tensions. In less than 4 decades from 1960 to 1995, before the regional financial crisis, per capita income grew nearly fourfold. The number of people living below the national poverty line fell from 30% to 10% of the population from 1988 to 1996; despite setbacks during the crisis, the poverty rate had been reduced to 7.8% by 2010. Most of the poverty is concentrated in rural areas in the north and northeast. In 2010, some 10.4% of people in rural areas were below the poverty line, while only 2.6% were poor in urban areas. Decentralization of political power and investments in transport infrastructure at local levels have spurred economic growth through the local administrations called Tambons.

Social progress has been on the whole positive over the past decade, although Thailand’s rating in the global Human Development Index fell significantly from 70th in 2000 to 92nd in 2010. Yet, primary school enrollment has continued to increase, infant and under-five mortality rates have both been halved during the decade, and nearly all the population now have access to improved sanitation and water sources.
Tourism is an important sector in the Thai economy. In the past decade, it has been affected by the severe acute respiratory syndrome (SARS) epidemic in 2003, the Asian tsunami in December 2004, the global financial crisis in 2008, and political disturbances in 2009 and 2010. Yet, overall, the number of visitors has continued to grow, from 9.5 million arrivals in 2000 to 16 million in 2010. However, while bringing many economic benefits, tourism has increased the stress on coastal ecosystems, threatening or degrading the islands, estuaries, coral reefs, seagrass beds, and sandy beaches.

Rapid growth of industrial and agroindustrial production has caused serious air, surface, and groundwater pollution in the urban areas. For example, solid waste disposal problems are increasing as cities and consumerism continue to grow. For decades, industries have discharged partially treated or untreated wastewater into the Chao Phraya River as it runs through Bangkok, and industrial water pollution is expected to worsen in the medium term as industrial production expands upcountry. In response, the Ministry of Natural Resources and Environment has, in collaboration with communities and the agricultural and industrial sectors, launched a project on environmental prevention and eradication of water quality problems in critical river basins in order to maintain good water quality from the essential water sources. As a result, municipal sewage management systems were established in 7,575 locations throughout Bangkok and local administrations. Water quality from at least 19 water sources was found to have improved between 2008-2009 according to monitoring data.

The good news is that Thailand has reached or is nearing the income level at which, as the experience of more advanced countries suggests, a strong national consensus favoring environmental protection emerges. It is hoped that this will increasingly influence the environmental debate.

Natural resources will likely remain the primary source of livelihood for a significant proportion of the Thai people, who will continue to live in rural communities well into the 21st century. Population growth, coupled with ambitious export-led growth targets, industrialization, and rising per capita consumption, may almost double the demand on natural resources in the next quarter-century. To meet this demand—to double the current stock and flows of infrastructure, food and commodities, manufacturing, and services—the management of natural resources and environmental systems must become much more efficient, equitable, and sustainable.

One of the biggest flooding disasters in five decades hit Thailand in the latter half of 2011 affecting 3 million people in 64 out of 77 provinces. The death toll reached over 600. Major economic zones with some 848 factories in many provinces in the central region were submerged; the floods affected 7 critically important industrial estates located in Ayutthaya, Pathum Thani, and Nonthaburi that contribute more than 22% of the country’s manufacturing output. Apart from the industrial sector, others affected were the agriculture, tourism, and financial sectors. Damage ranged from inundation of 1.8 million hectares of crop land, decline in number of tourist arrivals by a million, and closing of 452 bank branches. Initially, economic loss was estimated at $7 billion–$10 billion, which is around 2% of GDP. However, this might reach a staggering $33 billion depending on the recovery process. These devastating floods were a great setback for the Thai economy but the country has gradually recovered, showing the same resilience it displayed following previous natural disasters.
Bangkok

Bangkok, the capital of Thailand, is situated on the low flat plain of the Chao Phraya River that extends to the Gulf of Thailand. Bangkok, locally called "Krung Thep," which means the City of Angels, was established in 1782 by King Rama I as the capital of Siam. Since then, Bangkok has grown from a small village, little more than 4 square kilometers in area, to today's megacity of more than 1,560 square kilometers. Much of this growth has occurred since 1960. Bangkok had 5.7 million residents in 2010, although sometimes with the hustle and bustle and traffic, it seems to have many more. Shopping, world famous cuisine, nightlife, and cultural sights have made Bangkok one of the tourist havens of Southeast Asia. Today, Bangkok is a mixture of its old cultural heritage, new modern skyscrapers, luxurious hotels, shopping centers, street shopping, famous Thai food, restaurants, sports, and entertainment.

Bangkok's well-developed infrastructure has established it as the political, economic, tourism, and cultural center of Thailand, and the growth gateway of the whole region as well. From the late 1980s to the mid-1990s, industry mushroomed. With urbanization and the influx of people came environmental problems of air and water pollution and solid waste generation. Bangkok's numerous "khlongs" or canals, estimated at 1,357 in 2000, have become polluted due to direct discharges of wastewater. Still, wastewater treatment projects and canal water improvements have resulted in better water quality.

As the number of vehicles more than doubled in the 1990s, traffic became increasingly congested and air quality declined. However, since the implementation of new air and water pollution policies and stricter environmental standards in the late 1990s, air quality in Bangkok has started to improve.

Moreover, the subway and the skytrain are efficient and environmentally friendly alternative transportation modes that can help reduce traffic congestion to some extent. Bangkok has established rapid and direct connection from Suvarnabhumi international airport and suburbs into the heart of the city.

Bangkok is now facing problems of land subsidence due to excessive groundwater extraction. Subsidence has occurred at rates up to 10 centimeters per year in some areas, worsening flood conditions and causing damage to buildings and other infrastructure. Several royal projects initiated by His Majesty the King, such as the construction of Pasak Jolasit Dam and the Monkey Cheeks (Kaem Ling) Project to construct water retention facilities throughout the country have helped prevent and minimize flooding in Bangkok and its surrounding area. Even so, the disastrous floods of 2011 hit Bangkok particularly hard and further steps will be needed to improve flood control and flood defenses for the city.
Viet Nam, with an area of 331,211.59 square kilometers (Decision number 272/QĐ-TTg), lies along the western shore of the South China Sea, known as the East Sea (Bình Đông) in Viet Nam, and is bordered by the People’s Republic of China to the north, the Lao People’s Democratic Republic to the west, and Cambodia to the southwest. Ranging in width from 50 to 600 kilometers, it is a narrow country, except in the north, and is 1,662 kilometers long. Viet Nam has more than 3,000 islands along its coastline. There is a dense network of rivers and waterways in the Red River in the north and the Mekong River in the south.

Of all the countries in the subregion, Viet Nam has shown perhaps the most remarkable social progress in recent decades. Poverty decreased by a factor of five, from 70% in 1990 to 14.2% in 2010; gross national income (GNI) per capita more than doubled in the past decade alone, from $390 in 2000 to $1,110 in 2010; and there have been advances in many indicators of human development, including life expectancy (from 68 years in 2000 to 75.2 in 2011), infant mortality (from 30 per 1,000 live births in 2000 to 15.8 in 2010), and under-five mortality rate (from 34 per 1,000 live births in 2000 to 23.8 in 2010). However, the population tripled over the last half-century to about 87 million in 2010; population density, about 263 persons per km², is one of the highest in Asia.

Viet Nam’s advances in human development are closely linked with its tradition of social protection and the notable economic growth since 1986, when economic reforms changed the structure of the economy to one that is more open to the market and the international community, and transition began from a solely agrarian to an industrial focus. From the early 1990s, gross domestic product (GDP) increased rapidly, reaching a peak growth rate of 9.5% in the mid-1990s.

In the following years, many events, such as joining the World Trade Organization in 2007, the increased influx of foreign exchange in 2007–2008, the problems in the foreign exchange markets in 2009 and 2010, and the global economic crisis with the threat of returning inflation, have posed many new challenges for macroeconomic management. Nevertheless, during 2000–2010, GDP grew at an average rate of 7.4%. Viet Nam recently became a middle-income country.

Agriculture is the cornerstone of Viet Nam’s economic productivity, engaging 48.7% of the employed labor force in 2010. It accounted for almost one fifth of GDP in 2010. The land law passed in 1993, which granted farmers 20-year renewable tenure rights to their land, helped increase the rice output by 50% during 1988–1997. During 2000–2010, rice output further increased by 18.7% even though total planted area decreased by 2%. This made the country a major rice exporter and led to a steady decline in poverty. Also contributing to economic performance is the expanded production of cash crops, such as groundnuts, cashew nuts, rubber, coffee, and tea.
Upper: Notre Dame Cathedral, Ho Chi Minh City. Lower: Traditional and modern dress in Hanoi.
### Facts and Figures about Viet Nam

#### GEOGRAPHY

**Location**
Southeast Asia, bordering the Gulf of Thailand, Gulf of Tonkin, and South China Sea, and land borders with the People’s Republic of China, the Lao People’s Democratic Republic, and Cambodia.

**Total area, km²**
331,211.59

**Climate**
(1) Northern Viet Nam (from Hai Van Pass northward): highly humid tropical monsoon climate with 4 seasons (spring, summer, autumn and winter), influenced by the northeast and southeast monsoon.
(2) Southern Viet Nam (from Hai Van Pass southward): weak influence of monsoon, characterized by dry and rainy seasons and warm weather all year round.

**Terrain**
3/4 of terrain made up of low mountains and hilly regions; low, flat delta in south and north; central highlands; hilly, mountainous in far north and northwest.

**Lowest point**
South China Sea (Vietnamese name East Sea, Biển Đông), 0 m

**Highest point**
Fansipan, 3,143 m

**Natural resources**
Almost 60 mineral commodities, such as coal, bauxite, gold, copper, zinc, tin, copper, chrome, manganese, titanium, bauxite, limestone, and phosphate.

**Natural hazards**
Floods, storms, landslides.

#### PEOPLE

**Total population, million**
96.321 (2010)

**Average annual population growth rate,**
1.05 (2010)

**Population density, persons/km²**
263 (2010)

**Major ethnic groups**
54 ethnic groups: Kinh people (86%); Tay, Thai, Muong, Hoa, Khmer, and Nung (around 1 million each); Brau and Odu (several hundred people each)

**Religion**
Buddhist, Hoa Hao, Cao Dai, Christian (predominantly Roman Catholic, some Protestant), indigenous beliefs, Muslim

**Languages**
Vietnamese (official) and ethnic languages

**Poverty**

| Human Poverty Index/Rank | 12.4; 55th out of 135 countries and areas (2009) |
| Human Development Index/Rank | 0.591; 128th out of 187 countries (2011) |
| Proportion of population below poverty line, % | 14.2 (2010) |

**Education**

| Net enrollment ratio in primary education, % | 95.5 (2009) |
| Adult literacy rate, % | 93.5 (2009) |
| Government expenditure for education, % of GNI | 13.36 (2009) |

**Gender Equality and Women Empowerment**

| Ratio of girls to boys in primary and secondary education, % | 94.0 (2010) |
| Ratio of literate females to males among 15-24-year olds, % | 100 (2009) |
| Proportion of seats held by women in national parliament, % | 24.4 (2011) |

### Health (cont.)

**Proportion of population with access to improved sanitation, %**
76 (2010)

**HIV prevalence among 15-24-year-old women, %**
0.1 (2009)

**Contraceptive prevalence rate, %**
79.5 (2008)

**Government expenditure for health, % of GDP**
4.7 (2009)

#### ECONOMY

**Total GNI, $ million**
96,321 (2010)

**Per capita GNI, $**
1,110 (2010)

**GDP Composition by sector**

| Agriculture, % | 28.58 (2010) |
| Industry, % | 41.10 (2010) |
| Services, % | 30.32 (2010) |
| Labor force, million | 59.392 (2010) |
| Value of exports, f.o.b., $ million | 12.4 (2009) |
| Value of imports, c.i.f., $ million | 84.801 (2010) |
| Total external debt, $ billion | 27.929 (2009) |
| Debt service as percentage of exports of goods and services | 1.8 (2009) |

#### ENVIRONMENT

**Total forest area, % of land area**
39.5 (2010)

**Average annual deforestation, % of total land area**
1.6 (2009-2010)

**Protected area, % of total land area**
27.929 (2009)

**Freshwater withdrawal for agriculture, m³**
9.476 (2009)

**Freshwater resources per capita, m³**
10,064 (2010)

**Debt service as percentage of exports of goods and services**
1.8 (2009)

#### Urban Environment

**Urban population, % of total population**
72.191 (2010)

**Population in largest city, % of total population**
30.17 (2010)

**Ho Chi Minh City: 28.2 % (2010)**

**Per capita GNI, $**
50.392 (2010)

**Total GNI, $ million**
96,321 (2010)

**ECONOMY**

| Agriculture, % | 28.58 (2010) |
| Industry, % | 41.10 (2010) |
| Services, % | 30.32 (2010) |
| Labor force, million | 59.392 (2010) |
| Value of exports, f.o.b., $ million | 12.4 (2009) |
| Value of imports, c.i.f., $ million | 84.801 (2010) |
| Total external debt, $ billion | 27.929 (2009) |
| Debt service as percentage of exports of goods and services | 1.8 (2009) |

#### Rural Environment

**Rural population, % of total population**
68.83 (2010)

**Rural population density, persons/km² of arable land**
987 (2008)

**Arable land, % of land area**
20.3 (2009)

**Permanent cropland, % of land area**
10.8 (2009)

#### Energy Efficiency of Emissions

| Energy use per capita, kg of oil equivalent | 744.53 (2009) |
| CO₂ emissions per capita, kg of oil equivalent | 142.258 (2009) |
| CO₂ emissions per unit of energy use | 1.637 (2009) |
| GDP per unit of energy use | 4.0 (2009) |

#### Debt service as percentage of exports of goods and services

| Debt service as percentage of exports of goods and services | 1.8 (2009) |

#### Debt service as percentage of exports of goods and services

| Debt service as percentage of exports of goods and services | 1.8 (2009) |

#### Debt service as percentage of exports of goods and services

| Debt service as percentage of exports of goods and services | 1.8 (2009) |
The large and fertile deltas of the Red and Mekong rivers, which cover half of the country’s territory, have been important in agricultural production.

In terms of mineral wealth, the uplands, particularly in the north, contain a wide variety of lesser metallic ores and also some useful apatite, but the anthracite coal field in Quang Ninh, immediately to the northeast of the Red River Delta, contains the most important energy reserves. The country has commercially viable reserves of petroleum, natural gas, iron ore, bauxite, chromite, copper, tin, titanium, and even gold.

Destroyed mostly by war during 1955 to 1975, heavy industries began to decline and were replaced by light and consumer goods industries, which expanded to relieve the shortages in basic commodities. Four manufacturing areas showed particular promise in the 1990s as significant sources of export earnings: textiles, footwear, and garments; processing agricultural products; electrical industries; and automobile and motorcycle assembly. In spite of achieving impressive annual growth, Vietnamese industry is still considered underdeveloped due to obsolete equipment and machinery with high energy intensity. Viet Nam has designed policies with strong incentives to create a favorable environment for investors.

Rapid industrialization and urbanization, which go hand in hand with economic growth, have taken their toll on the environment. In 2010, about 30% of the population lived in urban areas, the most prominent of which are Ha Noi, Ho Chi Minh City, Thanh Hoa, and Nghe An. The increasing flow of migrants from the rural areas has stretched the already burdened urban infrastructure, including housing, water supply and drainage systems, and roads.

By 2008, virtually all the urban population nationwide had access to an improved water source and three quarters had access to improved sanitation facilities. Domestic and usually untreated industrial wastewater is discharged directly into open canals, polluting lakes and rivers at concentration levels higher than government standards. Cars and motorcycles, the numbers of which have been increasing by about 14% per year, have become major sources of air and noise pollution. Seventy percent of air pollution in urban areas is caused by transportation. Dust concentration is up to three times the acceptable limit. In general, however, air pollutants—carbon monoxide, nitrogen dioxide, and sulfur dioxide—have not exceeded acceptable limits except in some industrial zones in cities. The complete phase out of lead in gasoline in July 2001 effectively reduced the level of curbside lead concentration in urban centers.

Economic reforms in recent years were crucial in spurring industrial growth, which averaged a substantial 3.5% over the last decade despite slowdowns in 2005 and 2008. The contribution of industry to GDP rose to more than a third by 2000, reflecting the strong effects of the Government’s development program and increased consumer confidence.
However, amid such high growth, the limits of natural systems are becoming evident. Intensive farming, the main source of rural livelihood, has pushed the country to the limits of its arable land. The amount of cropland per capita, 0.07 hectares (2009), is one of the lowest in the world.

Half of the original forest cover was lost over the 4 decades to 2000, when only about 98,190 square kilometers, or 30% of the country’s land area, remained. Reasons for this are migration to forested areas (from the Red River Delta to the Central Highlands, which harbor the country’s richest remaining biodiversity), fuelwood collection, logging, forest fires, and war damage. However, while cutting of natural forest continues, reforestation and re-greening programs during the last two decades have increased forest cover. About 20% of Viet Nam’s forests have been recently planted.

The country’s exceptional biodiversity has been declining at a rate considered the highest in the subregion. There are more than 23,200 terrestrial and aquatic species in all. Of the endemic species, 28% of the mammals, 10% of birds, and 21% of reptile and amphibian species are endangered—a sign of ecosystem degradation and diminishing genetic diversity. National protected areas accounted for only 6.2% of the land area in 2010.

The accessibility and quality of water have diminished because of the loss of surface water from upstream countries, disruption in natural water regulation caused by forest loss, and degradation of watersheds and wetlands as a result of soil erosion. The country receives about 2,000 millimeters of rain each year but rainfall is highly variable, causing floods, then drought of increasing severity. Each year, on average, the country is affected by 6–8 typhoons. Urbanization and industrialization, coupled with the use of agrochemicals, are degrading the quality of surface water bodies and groundwater sources. Erosion rates are very high in the northern mountains and central highlands. Some of the wells in and around Ha Noi have tested positive for arsenic at levels exceeding the World Health Organization international standards.

There is significant economic activity in coastal and marine areas. More than 50% of the protein intake of the Vietnamese comes from a national fish harvest of more than 4 million tons each year, 50% of which comes from the sea. However, the productivity of coastal and marine areas has been decreasing throughout the 29 coastal provinces as a result of the rapidly increasing urban population along the coast, where many industrial zones are located. Coal mining is also a major cause, while the growing numbers of foreign and domestic tourists—expected to reach 25 million each year by 2010—could further strain coastal and marine resources.

Viet Nam has been successfully making an economic transition, with incomes rising and poverty on the retreat. The challenges are to ensure that growth is environmentally sustainable and that its benefits are shared throughout the country and among all population groups—including the rural population, ethnic minorities, and the poor.
Emperor Ly Thai To founded modern-day Ha Noi as Thang Long ("Ascending Dragon") in 1010. Despite its present population density of 1,962 persons per square kilometer, Ha Noi prides itself as a green city. With more than 1,100 hectares of lakes and streams and streets lined with 180,000 trees, there are many pleasant areas for walking and recreation. Van Mieu - Quoc Tu Giam is a famous historical and cultural relic of Ha Noi. Van Mieu ("Temple of Literature") was built in 1070 in honor of Confucius, his followers and Chu Van An, a moral figure in Vietnamese education. Quoc Tu Giam, which is the first university of Viet Nam, was built in 1076.

The 1,000th anniversary of Thang Long-Ha Noi, at which the fine traditional values of the capital’s heroism, peace, and friendship were honored, was celebrated on 10 October 2010. Eighty-two doctoral laureate steles (stone commemorative tablets), bestowed under the Le-Mac dynasties and displayed at Van Mieu - Quoc Tu Giam were recognized by UNESCO as world heritage documents. UNESCO also recognized the Thang Long-Ha Noi Royal Citadel vestige complex as a world cultural heritage site.

Lying on the western bank of the Red River in northern Viet Nam, the city has an area of 3,344.6 square kilometers. Ha Noi’s 6.56 million inhabitants make up 7.5% of Viet Nam’s population. Although second to Ho Chi Minh city in population size, Ha Noi is the political, economic, and cultural hub of Viet Nam. Because of reforms encouraging private ownership, foreign investments, and exports, Ha Noi’s economy is becoming more diversified. As the country moves from a centrally planned to a market-oriented economy, Ha Noi also faces increasing demand for better public services and infrastructure. The drainage and sewerage system, for instance, needs major improvement. Increasing amounts of solid waste are being generated while air and noise pollution are rising in commercial and residential areas.

To deal with these problems, the local government plans to move old and polluting factories to the suburbs. New landfills have been developed and the drainage system, including canals and natural lakes, has been upgraded. Ha Noi’s residents rely on motorcycles and bicycles as their main mode of transportation, while increasing numbers of cars and buses clog the narrow streets. Air quality is still good in most areas but there is growing concern about increasing traffic congestion and associated emissions.

Ha Noi grew at 2% per year in the decade to 2008, adding about 200,000 people annually to its population. In 2008, Ha Noi absorbed several neighboring communes and an adjacent province, which more than tripled the city’s area and increased its population substantially. There are also informal settlers who occupy land without legal ownership. They are mostly street vendors, street children, and those involved in small businesses. Several government and social institutions have undertaken poverty reduction work, such as providing education and health care services, to reduce the number of households living below the poverty line.