

August 24, 1978

N E P A L

A Preview

Various books, periodicals and professional journals have reported recently that man's demand for farmland, fuel and fodder is destroying vast forest areas and resulting in widespread environmental degradation. One such area of urgent concern is in the Himalayan foothills of south Asia. Centrally located in this region is the small kingdom of Nepal, now famed for the soil erosion of its treeless slopes, as well as for the breathtaking beauty of its mountain peaks, some of the highest in the world. Soon the author will be travelling to this area to view firsthand the interaction of the Himalayan peoples and their environment as they struggle to secure food and shelter from their increasingly less productive natural resources. In preparation for the journey the author has completed a brief study of the physical, social, and cultural characteristics of Nepal. With the following summary of this research the author seeks to provide the reader with an introduction to the country that will be the topic of future ICWA newsletters, as well as other publications concerning the state of our environment.

The Physical Setting

Approximately 40 million years ago, a continent, roughly the area now labelled India, moving north by northeast collided with the continent now called Eurasia. As it wedged its way slowly into Eurasia the northern margin of the advancing land mass redoubled upon itself and so formed the Himalayan mountains (Molnar and Tapponier, 1977). The Himalayas, the highest chain of mountains on earth, possess nine of the world's fourteen summits over 8000 meters, including Mt. Everest at 8848 meters. Extending more than 2000 kilometers from Kashmir in northwestern India to Burma in the east, the Himalayas separate tropical south Asia from the dry Asiatic plateau to the north.

Centered on the southern slopes of the Himalayas is the landlocked kingdom of Nepal. Although bordered on the north by Tibet, a region annexed to the communist People's Republic of China in 1951, and on the east by the kingdom of Sikkim, Nepal's most influential neighbor is India on her southern and western boundaries. Roughly rectangular in shape Nepal encompasses approximately 144,000 square kilometers extending in length an average of 800 kilometers and ranging in breadth from 145 to 225 kilometers. Although almost one quarter of the nation's surface area is above

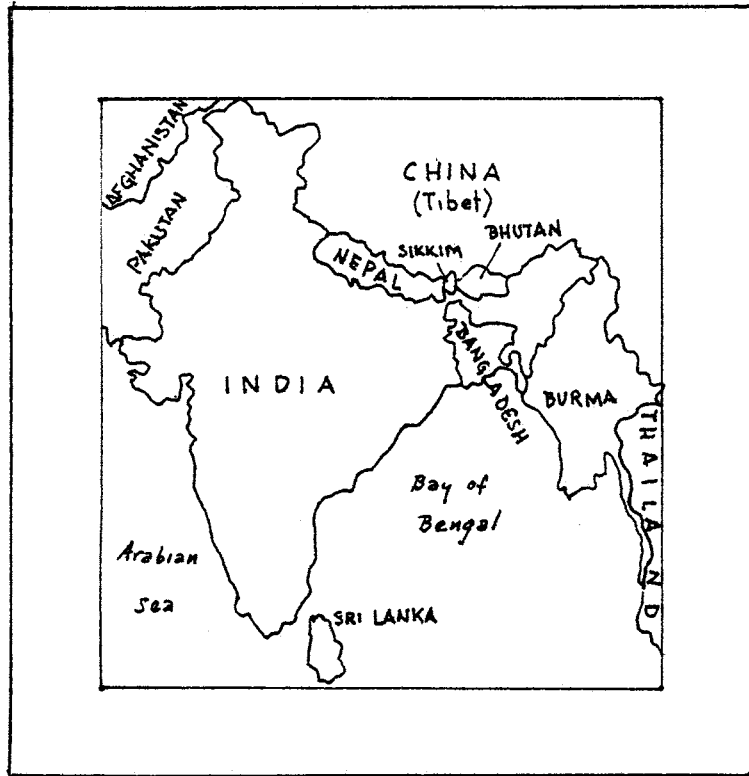
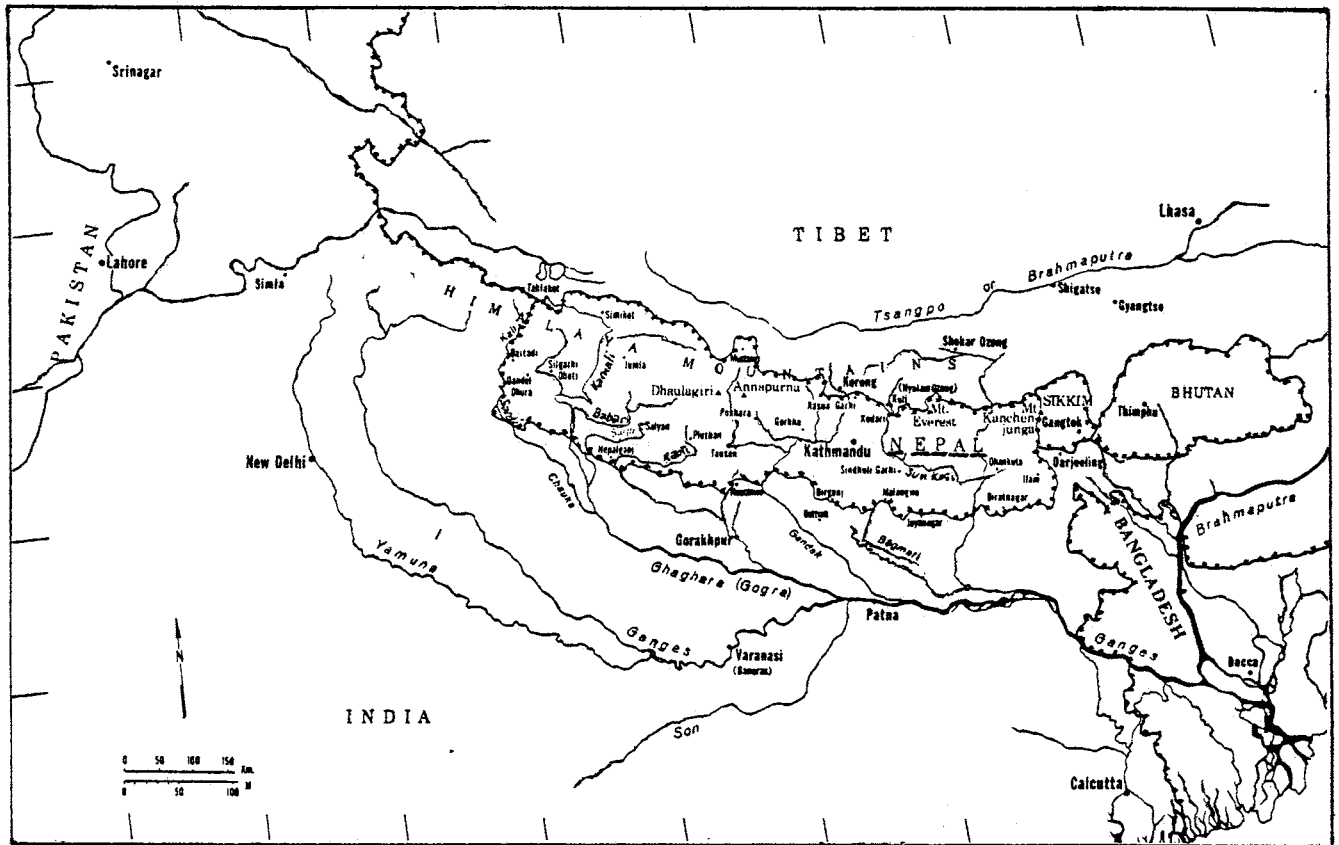


Figure 1. Locational map, Nepal.



Source: Gaige, 1975.

3000 meters in altitude, one half is below 1500 meters and 20 percent is less than or equal to 300 meters above sea level. (Gurung, 1973). At about the same latitude as Florida Nepal has twice the population on roughly the same area. Neighboring India is approximately one-third the size of the United States.

The southern approach to the Himalayas is a series of lesser mountain ranges also formed as the continental crusts buckled in the collision between India and Eurasia. The dramatic topography produced by this relatively recent mountain building offers impediment to atmospheric as well as ground traffic. The environmental contrasts between the tropical jungles of the Gangetic plain in northern India and the arid desert of the Tibetan plateau are due largely to the affect of altitude, location and strike direction of the Himalayas on regional weather patterns (Hagen, 1961). In the summer a low pressure area developing over the slower heating central Asian desert draws air from all sides. Nepal on the southern margin of this area experiences southerly winds bringing up warm moist air from over the Indian Ocean. As the air cools in its rise over the mountains, air vapour condenses into monsoon rains. The summer monsoon moving northward from the Bay of Bengal arrives in southern Nepal in late May or early June and stays until late September. The opposite condition prevails in the winter months when cool dry air descends southward over Nepal from central Asia.

Precipitation and temperature vary greatly throughout the country due to the wide variations in altitude. In general, twice as much rain is received in the east as in the west and the weather is warmer to the south. Daily temperatures may reach 110°F in the southern tropical areas while maximum temperatures at the nation's higher altitudes may never climb to half that amount. The temperatures of the midland valleys are much less severe with Kathmandu having a mean January temperature of 50°F (10°C) and a mean July temperature of 77°F (25°C); the maximum recorded temperature in the capital has been 99°F (37°C) and the minimum, 27°F (-2.8°C) (Baidya, 1970).

Various geographers have classified the Nepalese landscape in from three to seven natural topographic regions. Geomorphically the nation can be viewed as a series of three parallel east-west mountain ranges with their midmontane valleys and their collective flood plain. From the viewpoint of ecological type and human adaptation and exploitation, these seven areas can be regrouped roughly into three distinct zones, The Terai, the Midlands and the Himalayas. Figure 2 below lists Nepal's seven topographic regions and denoted alternative nomenclature and the percentage of area associated with each region. The cross-sectional diagram in Figure 3 indicates the vegetation type which may be found at the various altitudes throughout the country. As a result of the east-west precipitation gradient and rainshadows created by the high mountain ridges, the northern slopes and western regions of the country, in general, are drier and less luxuriantly vegetated than their southern and eastern counterparts.

Figure 2. Geographic Zonation

Socio-economic Zone	Topographic Region	Percentage of Land Area
Himalayas	1. Inner Himalayan valleys trans-Himalayan Bhot valleys Lesser Himalayas,	7.6
	2. Himalayas, Great Himalayas.	20.8
Midlands	3. Midlands, Pahar zone, Nepalese plateau.	32.0
	4. Mahabharat Lekh or range.	12.5
Terai	5. Inner Terai, Dun valleys.	2.8
	6. Chure or Churia range, Siwaliks, Siva Lekh.	9.1
	7. Terai, Tarai	15.2
		100.0

Source: Derived from data presented in Baidya, 1970.

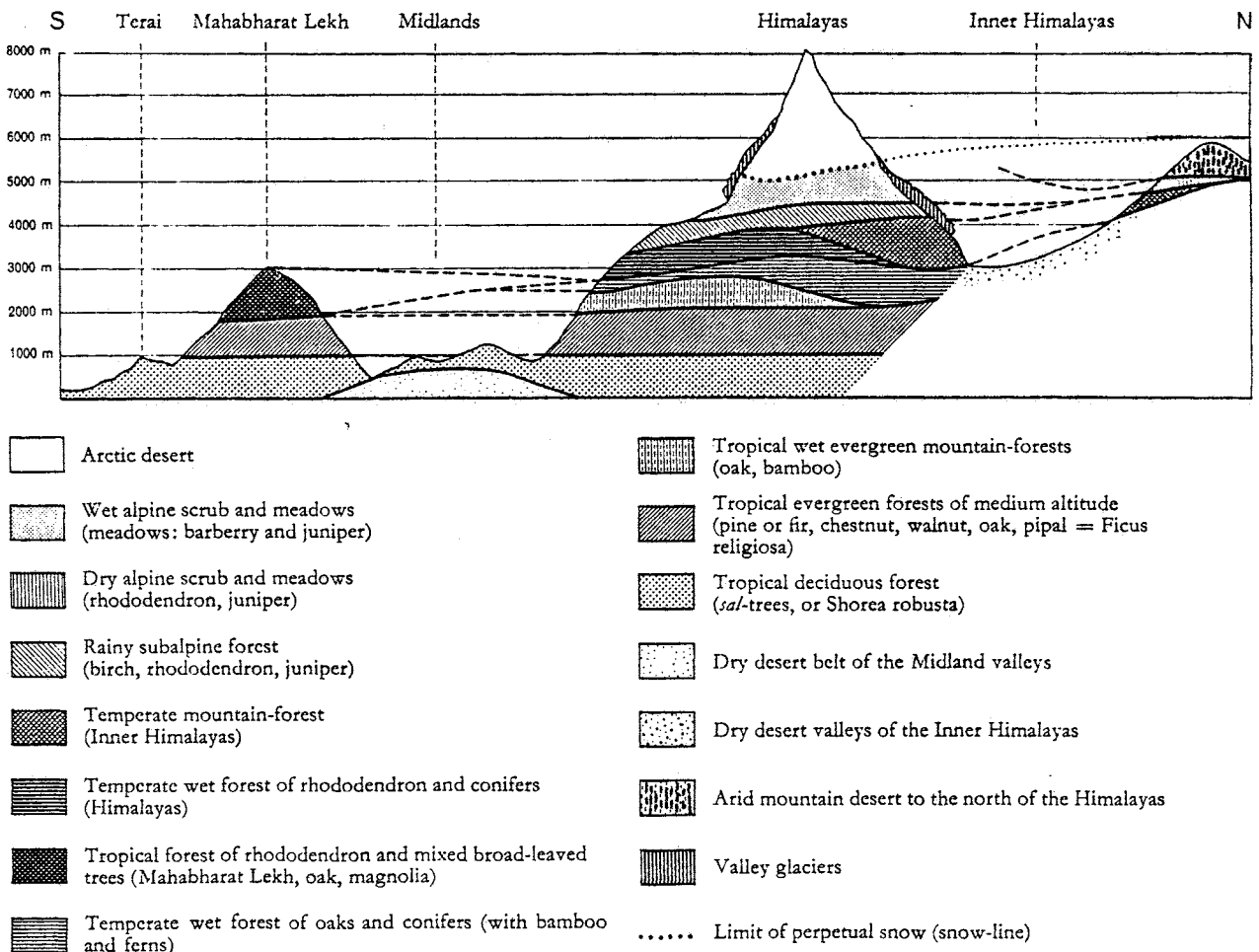
The Terai

The gentle topography and humid subtropical climate distinguish the Terai from the rest of the country. The Terai is not a continuous flat plain but rather the gently sloping foothills and the inner valleys of the Chure range. Rich alluvial soils and rainfall average 2000 millimeters in the east and decreasing to 1000 millimeters in the west have supported traditionally luxuriant forests. In the wetter east Sal and tropical evergreen forests predominate at lower altitudes. At higher altitudes temperate mixed broad-leaved forests take over. Although at present greatly reduced by clearing for settlement, the forests and marshes of this area once supported an enormous variety of wildlife, including tigers, leopards, bears, elephants, buffaloes, rhinoceros, crocodiles, cobras, vipers, and scorpions as well as the dreaded malaria mosquito. A government malaria eradication program begun in the fifties has helped greatly to reduce the incidence of this disease in the Terai. As a result of the improved health conditions and a government program to clear and redistribute land for cultivation, thousands of people have moved

to this region from the Nepalese hills and neighboring India. It has been estimated that in the decade from 1964 to 1974, 77,770 hectares of land was distributed in the Terai to farmers from the hills and almost three times that amount was occupied illegally (Eckholm, 1976).

Rich soil, favorable climatic conditions and a low population density contribute to the Terai's position as the nation's most productive region, producing over half of the nation's gross domestic product and three quarters of all government revenues (Gaige, 1975). Farmers in this area grow rice, sugarcane, tobacco, cotton, jute and oil seeds. Tropical fruits such as mango, guava, lichi and banana are also found in the Terai. Buffalo and Indian cattle are common as draft and milch animals and Sal, bamboo and rattan are harvested from the forests. The surpluses produced in this region are exported to the Midlands and India and succeed in making Nepal a net exporter of food products.

Figure 3. Cross-sectional Diagram of Vegetation Distribution in Nepal



The Midlands

The almost unpenetrable east-west mountain range known as the Mahabharat Lekh has been considered for centuries to be Nepal's principal deterrent to invaders from the south. With elevations from 1500 to almost 3000 meters only a few narrow river gorges intersect these steep jagged ridges. A warm temperate climate supports evergreen oak forests at lower altitudes yielding to mixed broad-leaf and rhododendron forests with increasing elevation. The few towns existing in this mountainous area are situated on trade routes.

Beyond the Mahabharat range lies the midmontane heartland of Nepal. A 60 to 100 kilometer wide complex of hills and valleys, the Midlands includes the Kathmandu valley, the Pokhara valley and numerous north-south valleys alternating with Himalayan spurs. This region with the most hospitable climate contains the greatest concentration of population in the nation plus the nation's capital, Kathmandu (pop. 354,000 1971 est.), and her sister towns Patan (pop. 59,000) and Bhadgaon (pop. 40,000).

The Midlands also supports intensive rice paddy cultivation with the ample water supplied by the region's major rivers. In the winter months the fields are planted in potatoes and various vegetables, such as lentils, chilis, soybeans, turnips, radishes, pumpkins and spinach. Cattle are kept as draft animals and sources of milk and manure. Water buffalo, horses, mules, sheep, goats, and chickens also are found.

The Himalayas

Overshadowing the Midlands are the Himalayas averaging elevation over 7000 meters and crowned by the world's tallest peak, Mt. Everest, locally referred as Sagamatha. The Himalayas are not one continuous range but rather a succession of narrow ridges and steep gorges exhibiting some of the greatest extremes of elevation for horizontal distance in the world. Rock strata inclined northward give the range an asymmetrical form resulting in very steep south slopes and comparatively gentle north slopes (Hagen, 1961). In ascending these mountain slopes one passes through oak, rhododendron and coniferous forests to reach alpine meadows before the snowline. Use of these steep slopes is limited largely to summer grazing by the yak, goats, and sheep of herders and traders occupying seasonal settlements ranging up to the snowline.

The high montane valleys that lie north of the principal mountain chain at an elevation of about 4000 meters are arid and sparsely vegetated with desert-like shrubs and grasses. Inhabiting these high mountain valleys are peoples of Mongolian extraction who have migrated to this region from the east and the north. Such are the Sherpas, famed for their mountaineering exploits, who traditionally make their living through trading, herding and, to a lesser extent, farming. The dress, culture and religion, Lamaistic Buddhism, as well as physical features reflect the Tibetan heritage of the people inhabiting the inner Himalayan valleys.

The River Systems

The three mountain ranges, the Himalayas, the Mahabharat, and the Chure range, which traverse Nepal are intersected by three main river systems, the Karnali, the Gandaki and the Kosi, which respectively drain the western, central and eastern portions of Nepal. Many tributaries originating in the high reaches of the Himalayas and Tibet feed into these three river systems. Still other rivers drain the Western and southeastern peripheries of the country and the religiously significant Bagmati drains the Kathmandu valley. All Nepal's rivers ultimately pour into the Ganges river passing through India and Bangladesh to the Bay of Bengal. Although steep river gorges generally have impeded east-west communication, they have facilitated the circulation of men, materials and ideas in this region by providing a natural north-south passageway through the barriers presented by the rugged transverse ridges.

The People, their Origins and History

Only a few scattered relics remain from the culture of Paleolithic and Neolithic man in Nepal. In strict chronological terms, the earliest historical evidence is found in the Terai. An inscription on a pillar erected in 249 B.C. records the visit of Asoka, a famous Indian ruler, to the birthplace of Buddha, Lumbini, in the Terai (Sharma, 1973). Only the central midland valley presents an uninterrupted account of human civilization in this region. For over 2000 years the Kathmandu valley has been seat of culture whose heritage is preserved in religious practices and spiritual beliefs expressed in stone, metal and wooden art and architecture. Fact and legend blend in the historical account of Nepal. Some of the first history of the region is found in the ancient Hindu and Buddhist religious documents, especially the Mahabharat epic and the Vamsavalis.

Aside from a few tribes indigenous to the Terai and possibly of Dravidian origin, the first inhabitants of Nepal were probably Mongolian herders from the north. Later these immigrants were joined by others of Caucasoid or Indo-Aryan stock from the south and west. The modern inhabitants of Kathmandu valley are people of mixed Mongolian and Aryan blood. Due to the country's rugged terrain, various ethnic groups which have migrated to the Himalayan foothills over the centuries have remained isolated and culturally distinct. The vast majority, some 95 percent, of the nation's people are subsistence level farmers belonging to various ethnic, linguistic and cultural groups traditionally identified with specific geographic areas (Bista, 1972).

The Early History

Before the formation of Nepal as a single united kingdom under Shah rulers in 1768, the region was divided into more than fifty principalities. The early history of this area largely recounts the exploits, real and imaginary, of the ancient kings. Throughout history the fertile soils and Indian-Tibetan trade route position of the Kathmandu valley enriched the valley making its rulers prosperous and powerful.

Emigrants from northern India, the Lichchavi family established a monarchy in the Nepal Midlands around the first and second century A.D. and with the waning of the powerful Gupta empire in India, the new kingdom prospered. Sanskrit was introduced as the religious and literary language and Kathmandu grew into a thriving outpost of Indian culture. By the fifth century trade with India and Tibet flourished and new trade routes aided in the development of relations with China. Matrimonial alliances further strengthened Nepalese ties with Tibet and India. Beginning in the ninth century Muslim invasions in the south caused many people to flee India into the sanctuary of the Himalayas.

In the 13th century the Malla dynasty rose to power in the Kathmandu valley. In attempting to cope with the refugee invasion from Muslim-beseiged India, the government effected a redistribution of land and enforced the rigid Hindu caste system. Upon the monarch's death in the 15th century, the Malla kingdom was divided into four separate principalities for each of the royal offspring. This division of wealth and power resulted in jealousy and incessant internecine quarreling. During this same period the Shah branch of the warrior Rajput family arrived from India to settle in the Gandaki river basin to the west of the Kathmandu valley. The Shah rulers consolidating their control of the Gandaki valley established the independent state of Gorkha in 1559. Keenly aware of the political unrest to the east and the weak position of the nominal Mogul ruler to the south, the able and ambitious Prithvi Narayan Shah moved to capture the Malla territory. Defeating armies sent by the rulers of both Bengal and Great Britain, the Shah king annexed the Kathmandu valley to the kingdom of Gorkha in 1768. Moving the seat of government to Kathmandu, the conquerors renamed their kingdom Nepal. Continuing his conquests the Shah king pushed Nepal's borders farther to the east to include the present-day territory of Sikkim. Succeeding Shah rulers pursuing the expansionist policies of their predecessors advanced to the north and the west. Moving into Tibet in 1792 they met the Chinese in a dispute over the privileges of trans-Himalayan trade and commerce. Despite Nepal's defeat Sino-Nepalese relations were soon repaired and the ensuing friendship became a valuable counterpoise to emergent claims of British colonialism. Aspiring to control the Himalayas from Sikkim to Kashmir the Shah rulers redirected their armies to the west. These advances drew the armies of Punjab and Great Britain into defense of their territories and the Gurkha War of 1814 to 1816.

The Nepalese were defeated and forced to retreat to the present boundaries of the Mahakali river on the west and the Mechi river in the east. The Treaty of Sagouli signed in 1816 also pressured Nepal to accept a resident British envoy in Kathmandu and to abstain from direct communication with any other western power. The war had been fought with gallantry and chivalry on both sides and despite the harsh treaty terms the former combatants grew to be staunch friends and allies. In the century that followed Nepali soldiers, known as Gurkhas, which were sent to fight in the British army became famous for their skill and courage.

Due to the minority of the Shah king in the early 1800's, the power of state lie in the hands of the prime minister, Bhimsen Thapa. Upon the prime minister's death in 1839, the ensuing scramble for power under the unsteady king led to the Kot Massacre in which many noblemen of the royal court were murdered. Emerging powerful from these struggles was a soldier, the grandnephew of Bhimsen Thapa, Jung Bahadur Rana. Ousting King Rajendra Bikram Shah to establish his son as a puppet ruler, Jung Bahadur proclaimed himself prime minister and appointed his family members to key government posts. Thus began the 104 year reign of the Rana autocracy, a ruling system of hereditary prime ministers.

Religious belief that the Shah king is an incarnation of a Hindu god demands his presence at both state and religious functions and prevented the Rana family from disposing of the royal family altogether. Although the Rana rulers did bring some changes to Nepal, for example, the codification of laws, improved relations with Great Britain and Tibet, emancipation of slaves, establishment of the first modern college, development of electrical power and communication facilities and the establishment of banking and industry, the changes were few and largely self-serving. In effort to preserve their position the Ranas attempted to keep Nepal isolated from the rest of the world. Trade, travel and communication with the outside world were severely restricted during their rule.

The Political Scene since World War II

After World War II isolationism became a much more difficult policy for the Rana government to maintain. With India winning her independence in 1947 the British were no longer around for support. Nepali students were returning from India with radical democratic ideas. Aware of the political changes in China India's political leaders urged democratic reforms in Nepal. India sent constitutional experts to assist the Rana government in designing reform measures, but the government hesitancy in implementation of the reforms led to political agitation and turmoil. When mass arrests followed, King Tribhuvan in protest sought political asylum in the Indian Embassy. The armed insurrection which ensued quieted when the Rana rulers, King Tribhuvan and the Indian government reached an agreement providing for the return of the king and the establishment of a democratic form of government. Returning on February 18, 1951, King Tribhuvan instituted a joint Rana/Nepali Congress Party coalition Cabinet. The differences of opinion between the two political blocs could not be resolved, however, and in November, 1951, the last of the

hereditary Rana prime ministers resigned.

During the next eight years those groups in authority experimented with a parliamentary system of government. Frequent changes of the Cabinet and the ineffectiveness of the Advisory Assemblies only strengthened the power of the king. In 1959 the first Constitution was presented and the first general elections held. The victorious Nepali Congress Party, invited by the king to form the Cabinet, moved ahead with proposals for land reform, tax revision and administrative reorganization. Opposition arose among vested interests; criticism of government policies became destructive and divisive and lawlessness increased in the districts. On December 15, 1960, the king, charging governmental inefficiency and corruption, economic stagnation and political instability, suspended the Constitution, dissolved Parliament and the Cabinet, suspended fundamental civil rights and banned political parties. He argued that Nepal was not ready for western-style democracy and promised to restore the democratic method in Nepal with a new version of democracy oriented more towards the Nepalese experience.

In 1962, King Mahendra inaugurated a new system of government in Nepal, the Panchayat (village council) democracy, "rooted in the life of the people in general and in keeping with the national genius and tradition, and as originating from the very base with active cooperation of the whole people and embodying the principals of decentralization" (Pradhan, 1973). The new Constitution provides for the establishment of a four tier Panchayat system; Village and Town Panchayats (approximately 3600) support District Panchayats (75) which in turn support Zonal Panchayats (14) and ultimately the National Panchayat, the unicameral legislature with 109 indirectly elected members and 16 crown appointees (Pradhan, 1973). Retaining absolute legislative and legal authority, the king is assisted in government by a Council of Ministers, chosen by the king, a Supreme Court, a Public Service Commission, an Auditor General and a large, powerful government bureaucracy. Although political parties continue to be outlawed, two groups, the Nepali Congress Party and the Communist Party are visibly active in neighboring India. Since 1970 there has been spasmodic agitation against the government including some terrorist activities and strikes by university students.

The new Panchayat democracy is not reported to be succeeding much better than the previous parliamentary democracy. The failures of the present system have been attributed to the king's lack of confidence in the sincerity of the Panchayat leaders and also to the king's desire to be involved in every decision at every stage. Political leaders are pitted against one another by the king rather than encouraged to cooperate. The government's intolerance of any deviation from the official line has led to political alienation and hostility among the people. (Chauhan, 1971).

Foreign Relations

The fact that Nepal is sandwiched between two of the more dynamic and expansive Asian cultures historically has forced the

small kingdom into jealously guarded isolation. This mountain nation has been viewed variously as a buffer and a link or communications channel between her two ideological disparate neighbors. Non-alignment and peaceful co-existence became Nepal's formal foreign policy position in the Sino-Indian dispute of the 1960's. China, traditionally considered by Nepalis too distant both culturally and physically to be a threat to Nepal's independence, still is considered close enough to offer support in the face of Indian hegemony.

The close economic and cultural bonds between India and Nepal seem to heighten Nepal's wariness of her large neighbor to the south. A Nepali journalist once likened the relationship to that of a man sleeping with an elephant. The social and cultural ties between these two countries date back many centuries. The major dynasties existing in Nepal since the 11th century can be traced to Indian origin. Nepal's ruling dynasties traditionally have intermarried with Indian high caste families. Many of the Nepali elite have been educated in Indian universities. The two countries share common religions and the devout of both countries often make pilgrimages to the shrines of the other. Recently the Nepalese Terai has received scores of Indian emigrants wishing to settle on newly cleared land. It has been estimated that almost one fourth of Nepal's population is of recent Indian extraction.

Nepal's overdependence on India for the supply of vital commodities is a constant irritant in the relations between the two states. Indian foreign aid, technical assistance and capital has been responsible for much of the industrial development in Nepal during the last few decades. Bilateral trade agreements and mutual benefit projects for defense, transport, irrigation, electrification, and flood protection have strengthened the relationship between India and Nepal. Over 35 countries and international agencies have worked with the Nepalese government in assistance programs of all types. Agriculture, transportation and health are the main sectors receiving foreign assistance. Apart from India, major donors are China, the United States, West Germany, the United Kingdom, Japan, Switzerland and Denmark and on a growing scale Canada, Kuwait and Saudi Arabia. Multilateral aid has been channeled through the United Nations, the World Bank, the Asian Development Bank and more recently the OPEC Special Fund (Qerin, 1977).

The Economy

In deliberately keeping Nepal isolated from foreign influences the Rana autocracy perhaps helped maintain the country's independence, however, simultaneously the government perpetuated an antiquated economic system. When King Tribhuvan assumed power in 1951, he faced the task of organizing government institutions as well as preparing desperately needed programs for social and economic development. In the last two decades a series of development plans have been implemented. Sizeable investments have been made in the

construction of transportation facilities, irrigation and hydro-electric projects and health and education programs. Nevertheless, the great majority of Nepal's population still lacks the basic social services. One of the major obstacles to the nation's modernization is its topography. The expense and difficulty of building modern infrastructure facilities in mountainous areas accounts for most of the country remaining accessible only by foot.

The predominate economic activity in Nepal is agriculture. Although one-third of the nation's area is barren or under perpetual snow, the remainder supports an economy very dependent on its natural resources. The waters are fished and the meadows grazed. The forests occupying another one-third of the nation's area provide wood for construction and fuel and fodder for milch and draft animals. Firewood supplies almost all the energy consumed in rural areas; where fuelwood is now scarce, dung is directed to the stove to the detriment of the field. Cultivated land covers some 16 percent of the nation's area; approximately 6 percent of this land is in the mountains, 32 percent in the hill regions and 62 percent in the Terai (Shrestha, 1974). The farmers produce various grains, including rice, millet, wheat, barley, and buckwheat, plus lentils and assorted vegetables. Cash crops may include oilseeds, especially mustard and rape, jute, potatoes, tobacco, sugarcane and a variety of medicinal herbs. Agricultural exports, 90 percent of which to India, are rice and other cereals, jute, mustard, dairy products and animal feeds (QERIN, 1977). The agricultural sector employing about 95 percent of the labor force provides 60 percent of export earnings and 66 percent of gross domestic product (Rana, 1973).

For centuries Nepal has been able to support its growing population by extending cultivation to virgin lands. The prospects for increasing future agricultural output by this method are poor. Almost all of the land suitable for cultivation has been brought under the plow. Much of the land in the Terai remaining to be cleared is poorly suited to agricultural production, at least by traditional practices. In the hill region where cultivation has been extended up steep slopes, the subsequent meager additional harvest hardly justifies the resultant soil erosion and stream disruption. Population density in the hill region is approximately 9 persons per cultivated hectare, a concentration greater than found in many of the Asiatic deltas having more favorable soil and climatic conditions. With the food and fuel supplies barely meeting subsistence level needs, many families are forced to migrate seasonally and sometimes permanently to other areas. It has been estimated that in the eastern hill region of Nepal as much as 38 percent of the total land area consists of abandoned fields (Eckholm, 1976).

Although the average farm family in the Terai fares better than its counterpart in the hills, the agricultural surpluses characteristic of this region are gradually shrinking. Migrants to the Terai from the Nepalese highlands and India increase population density and reduce the amount food available for export.

Despite government recognition of the importance of self-sufficiency in food production, efforts to improve agricultural productivity have met with only limited success. The establishment of an Agricultural Development Bank, irrigation projects, agricultural training and extension services and the subsidized sale of inputs has not been able to stimulate agricultural production (Rana, 1973). The low productivity per man per unit area has been attributed to several factors, including the high man to land ratio, small size of holdings, exorbitant rents, antiquated technology and an inadequate support structure, such as irrigation, market, storage and transport facilities (Shrenshtha, 1974). Various land reform measures regarding tenancy rights, rent and interest rates have been mandated but only rarely implemented or enforced.

Cottage industries based on traditional crafts and skills account for 7 percent of gross domestic product (Pant, 1973). Examples of the items produced are cotton and wool textiles; oil; pottery; brass, copper, bronze, silver and gold metal works; wood carvings and furniture and bamboo, cane and other fiber works. An important source of employment and income for rural areas, cottage industries are enthusiastically promoted by government development officials.

The manufacturing industry only plays a marginal role in the Nepalese economy. Nepal must import almost all construction materials and numerous consumer goods. The existing small scale industry processes agricultural goods and manufactures such products as flour, sugar, oil, jute goods, matches, cigarettes, textiles, plywood, stainless steel utensils, shoes, agricultural implements, bricks, tiles and cement. Apart from financial and production setbacks, various administrative problems have hindered development in the public sector. Lack of managerial skill and trained labor, electrical power shortage, communication and transportation difficulties, as well as a limited market are some of the main obstacles to development in Nepal (QERIN, 1977).

Tourism increased dramatically through the past decade to become a major source of foreign exchange earnings and a sector of growing employment and income. In the period between 1966 and 1976 the number of tourists visiting Nepal increased almost sevenfold (QERIN, 1977). Various international agencies are assisting the Nepalese government in the development of tourist facilities. In addition to tourism revenues, Gurkha pensions and foreign aid monies contribute to the government's foreign exchange coffers. Foreign aid revenues comprised an estimated one-third of government's total income and one-half of budgeted development expenditures in the 1977/78 fiscal year (QERIN, 1977).

The Future

The prospects for Nepal's future appear dim indeed, if one focuses on the negative aspects of her condition. A high population density per unit of arable land, an annual population growth rate of more than 2 percent, declining agricultural productivity, widespread environmental degradation and a gross deficiency of the basic social services portend the worst not only for Nepal but many other Third World nations. Before slipping into despair, however, one should review the positive points in Nepal's physical and human resource inventory.

Most of Nepal's natural resources have yet to be fully exploited. The government is just beginning to recognize the value, financial and otherwise, of the nation's mineral and biotic resources. Recent geologic surveys have discovered deposits of copper, limestone, cobalt, nickel, marble, iron ore, talc, ochre, slate, zinc, lead, tin, graphite, phosphate, gold, silver, mercury and salt. Further studies must be done to ascertain the extent and the quality of the various mineral deposits and to determine the economic and environmental feasibility of mining operations.

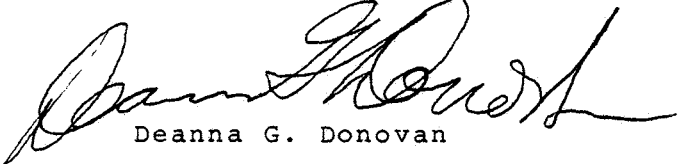
The country's many rivers show vast potential for the development of hydroelectric power and irrigation projects. Prior to investing large amounts of time and money in such projects, however, the government must tackle the problem of mismanaged mountain slopes. Denuded forests and marginal cropland in the hill region yield gravel and silt which clog river channels, water reservoirs and equipment and threaten the success of hydropower and irrigation projects.

One of the most valuable and the most abused of Nepal's natural resources is the forest. Approximately 4.8 million hectares or one-third of the nation's total area is covered by forests. Hill forests comprise some 89 percent of this total with the Terai and Dun forests accounting for 11 percent (Shrestha, 1975). In the hills, the forests are important providers of fuel, fodder and local building materials. Appropriation of forested slopes for agricultural production has resulted in soil erosion locally and in floods and siltation downstream. The legal and illegal destruction of Terai forests for settlement, firewood, fodder and poles has greatly reduced valuable lowland forests. It has been estimated that almost 36,000 hectares of commercial forest land are being lost every year through encroachment (UNDP/FAO, 1974).

The survival of the forests is vitally important to the well-being of Nepal and her neighbors. For the steep mountain slopes the protective function of the forest cannot be overemphasized. Government forestry programs must be geared not just to planting trees but to enhancing the forest's ability to provide multiple goods and service. Moreover forest management should recognize the valuable role of the forest as wildlife habitat and a reservoir of germplasm, a gene pool. Many of the wildlife species that have sought refuge in Nepal's tropical forests are rare and endangered species, the only survivors of their kind on the continent.

Nepal's human resource reflects the diversity of the nation's topography and ecology. Demographers invariably will say that there are too many people while anthropologists delight in describing the diverse linguistic and cultural characteristics of the several dozen ethnic groups in Nepal. Historians recount the skill and bravery of the Gurkha soldiers. Mountaineers and trekkers returning from Nepal report the gentleness and friendly generosity of their Nepalese hosts. The government in their development programs should take advantage of their citizen's special qualities, especially the mountain people's sense of self-reliance developed through the years of isolation.

Nepal is a very beautiful but fragile land. Remote as it still may be, Nepal is no longer inaccessible and most certainly not isolated. The fate of the highlands in this small mountain kingdom will affect very directly the lives of the people of Nepal as well as those of India and Bangladesh. The misery of poverty and ecological disasters may be localized but the tragedy of environmental degradation eventually will be felt worldwide.



Deanna G. Donovan

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