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Nepal

A Country Profile

December 1978

April 1980 updated

Office of Foreign Disaster Assistance
Agency for International Development
Washington, D.C. 20523

Base 57615 7-68

OFDA COUNTRY PROFILES: APRIL 1980

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Upper Volta
Zaire

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Nepal
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CARICOM Regional Profile
Dominican Republic
Haiti

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NEAR EAST

Turkey

SOUTH PACIFIC

Fiji
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INDIAN OCEAN

Island Countries of the Indian Ocean *

* in preparation

NEPAL: A COUNTRY PROFILE

prepared for

The Office of U. S. Foreign Disaster Assistance
Bureau for Private and Development Cooperation
Agency for International Development
Department of State
Washington, D. C. 20523

by

Evaluation Technologies, Inc.
Arlington, Virginia
under contract AID/SOD/PDC-C-0283

The profile on Nepal is one in a series designed to provide baseline country data in support of the planning, analysis and relief operations of the Office of U. S. Foreign Disaster Assistance (OFDA). Content, scope and sources have evolved over the course of the last three years, and no doubt will continue to do so. The relatively narrow focus is intentional. To avoid redundancy, some topics one might expect to find in a "country profile" are not covered here.

If the information provided can also be useful to others in the disaster assistance and development communities, so much the better. Every effort is made to obtain current, reliable data; unfortunately it is not possible to issue updates as fast as changes would warrant. A cautionary note, therefore, to the reader: statistics are indicators at best, and if names and numbers matter, the bibliography will point to a current source.

We invite your comments and corrections. Address these and other queries to OFDA, AID, as given above.

December 1978 updated April 1980

see dates on last page

TO:

COUNTRY PROFILE USER Dear _____

Please use this form to note any changes, additions, corrections or suggestions you think would update and improve this country profile. Since our aim is to make these profiles as relevant as possible, your critique is essential and very much wanted. Return comments to Lucy Drobot, OFDA Country Profiles, Room 1262A.

NAME/OFFICE:_____ PHONE:_____ Date:_____

TOPIC	COMMENTS

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1. General Information

1.1 Geographic Codes

Aid Standard	367
State Regional	NEA
FIPS	NP

1.2 Country Names

Official	Kingdom of Nepal
Local	Nepal
Short	Nepal

1.3 Official Holidays

1977: Indra Jatra - Festival of Rain God....Aug/Sept
Dasain - Durga Puja Festival.....Oct (over one week)
Tihar - Festival of Lights.....Oct/Nov (two days)
Mahendra Jayanti and Constitution Day.....Dec 15
King Birendra's Birthday.....Dec 28

1978: Tribhuvan Jayanti - Birthday of the late King Tribhuvan, and Rashtriya Prajatantra Divas - National Day.....Feb 18
Shivaratri - in honor of Lord Shiva...Feb/March
Navabarsha - New Year's Day.....April
Baishakh Purnima - Birthday of Lord Buddha.....April

1.4 Currency (April 1980)

Nepalese rupee (NR)

1.5 Time Zones

EST + 10 hours 30 minutes. GMT + 5 hours 30 minutes

1.6 Host Country Embassy and Staff in US

Embassy

Address: Royal Nepalese Embassy
2131 Leroy Pl. NW
Washington, D.C. 20008

Phone: 667-4550

Staff: Ambassador.....Padma Bahadur Khatri
First Secretary.....Umesh P. Adhikary
Military Attache.....Lt. Col. Chiniya Bahadur Basnyat

1.7 US Mission to Nepal and Staff

Embassy

Address: Kathamdu, Pani Pokhari

Tel: 11199, 11603, 11604

Staff: Ambassador.....L. Douglas Heck
Deputy Chief of Mission.....Richard W. Boehm
Political/Economic Section.....Robert P. Goold
Consular Section.....Franklin P. Huddle
Administrative Section.....Herbert D. Demerer
Agricultural Section.....Ivan E. Johnson (resident in New Delhi)
Agency for Intl. Development....Samuel H. Butterfield
Public Affairs Officer.....John F. Ritchotte

1.8 Treaties and Agreements

With US:

Defense Agreement
Economic and Technical Cooperation
Highways
Investment Guarantees
Peace Corps
Trade and Commerce

1.9 Travel and Visa Information

Passport and visa required of all nationals except Indians.

Consulates:

In California and Illinois
(See also Host Mission)

Health:

Smallpox vaccination required. Yellow fever vaccination required of arrivals from infected areas. Recommended: diphtheria, tetanus, DPT for children, gamma globulin, poliomyelitis, rabies, typhoid and typhus.

Water/food purification methods essential. Boil and filter all water; boil milk and treat vegetables from local markets.

1.10 Ethnic and Sociocultural Groups

Despite an array of tribes and ethnic descent patterns as complex as country's terrain, Nepalese population best understood as belonging to two basic groups: Indo-Nepalese and Tibeto-Nepalese. Indo-Nepalese includes Pahari, Newar, Tharu, and Indians of Tarai region; together comprise 80% of population, with most living in Tarai and

Kathmandu Valley; Pahari largest group. Tibeto-Nepalese includes Tamang, Rai, Limbu, Bhote, Sunwar, Magar, and Gurung; most live in north and east though Magar and Gurung found in west-central areas. Only Magar, Tamang, and Rai number over 200,000.

Indo-Nepalese:

Pahari - north Indian in physical type; some Mongoloid traits. Divided into high, "clean" castes (Khasiya) and low "unclean" castes (Dom). Most are Khasiyas; customs derived from Indians of Gangetic plain. Khasiyas small, landowning farmers; Doms craftsmen and laborers. Caste restrictions not strictly observed.

Newar - approximately 1/2 of population in Kathmandu Valley; markedly Mongoloid in physical type. Many are farmers; relatively high educational level and economic prosperity make them important civil/political leaders. Customs a distinctive blend of Hindu/Buddhist elements; caste restrictions not strictly observed.

Tharu - located in Tarai. Bhoksa in west and Mechi in east also belong to Tharu. Hindu practices prevail; presence of shamanism in most villages (exorcisms, sacrifices, herbal medicines) indicates Tibetan influence.

Indians of Tarai - little data available; most are Nepalese nationals but culturally/linguistically part of North Indian Plain culture groups.

Tibeto-Nepalese:

Tamang - live in villages of several hamlets with dhami (priest) for every village; performs seasonal agricultural rituals. In hills around Kathmandu Valley, Tamang are tenant farmers, day laborers, porters; generally low caste.

Magar - most in mountains of central Nepal; also in east; Many are sharecroppers, day laborers; in north, salt traders and pastoralists.

Rai - largest group in east, extending into India, Bhutan and Sikkim. Two major divisions: Khambu and Yakha. Shamanism and cult of ancestors important.

Gurung - Two groups of different status: Charjat and Solhajat, latter "lower" of two. Most Gurungs Lamaist Buddhists. Originally herders; forced by population growth and limited lands into subsistence farming. Little information on the Sunwar, Limbu, and Bhote (except Sherpa).

Castes

Although caste system officially outlawed and occupational dimension of system slowly deteriorating, most Nepalese cling to at least remnants of traditonal caste occupations/social prohibitions. Sharp differences between Hill region and Tarai systems; similar occupations often have very different rankings. Sunwars of Hill region, Sonars of Tarai both gold and silversmiths, but Sonars highest among craft castes, Sunwars below untouchables. Also more castes in Tarai than Hills. Caste system exclusive to Hindu Nepalese; not observed by numerous tribal groups, although latter have own hierarchies.

Absorption of tribal groups by Tarai/Hill cultures also different for both regions; Hill tribes often ranked by caste Hindus according to degree of "Hinduization"; tribes in Tarai mostly relegated to bottom of hierarchy, below untouchables.

1.11 Languages

Nepali the official language; mother tongue of half the population, and spoken by another 30%. However, Hindi widely spoken in Tarai but often seen by Nepali (Hill region "elite" culture) speakers as symbol of traders, businessmen in Tarai who deal with India. Hindi also learned from extremely popular movies made in India, from all India Radio and from reading Indian newspapers. However, most educated and professional people in Tarai speak Nepali by necessity. (See Radio). Overall, 30 languages and dialects, 5 regional groups of dialects, in Nepal.

Use of English: 1964 Nepal Company Act requires all companies to maintain records in either Nepali or English. Most registered companies in Tarai; likely that records kept in Hindi or other plains languages. Many economically elite groups in Tarai urban centers speak English, receive English editions of Indian newspapers. GON also publishes newspapers and magazines in English.

Language/Region

Kathmandu Valley: Most speak Newari.

Hill region: Nepali lingua franca, followed by Newari, Magar, Gurung, Rai, Limbu, and Tibetan dialects (Thakali and Sherpa), especially in east.

Tarai: Hindi dominates in Tarai as in Gangetic Plain as a whole, especially in North Uttar Pradesh, although mother tongue only for minority. Other languages: Urdu, Maithili, Bhojpuri and Bengali. Majority language varies by districts; Maithili spoken by 85% of population in four Eastern Tarai districts; Bhojpuri by 92% in 3 other eastern districts. Awadhi first language of 87% in 4 mid-western districts while Tharu dialects dominant in 3 districts of far west.

1.12 Religions

According to 1961 census, Nepal 88% Hindu for both Hill and Tarai regions; actual percentage slightly lower because many only nominal Hindus. Other religions of Hill region, Mahayana Buddhism, Tibetan religion called Bon, and local variants of animism, have combined with Hinduism to make Nepalese religious milieu a blend of many faiths. Buddhism in Kathmandu Valley (elsewhere) absorbed to become variant sect of Hinduism. Hindus of Tarai have even adopted custom of purdah from Moslem minority; Moslems concentrated in east, mid-west, and far west Tarai. In addition, both Hinduism and Buddhism have assimilated aspects of shamanism: local deities, ancestor/spirit worship, consultation with shamans.

Hinduism both a bond and a barrier between Hill and Tarai peoples; common practices and sharp differences. Orthodox Hinduism rejected by many in Hills; religious vegetarianism seldom practiced. (See also Castes).

Religious Composition of the Population of Nepal

Region	Hinduism	Buddhism	Islam
All Nepal	87.7	9.3	3.0
Eastern Hills	81.9	18.1	.0
Kathmandu Valley	80.7	18.8	.3
Western Hills	84.6	15.1	.3
Far-western Hills	99.1	.9	.0
Eastern Tarai	89.8	1.1	8.9
Mid-western Tarai	87.1	.1	12.7
Far-western Tarai	91.5	.0	8.5

Source: Census of Nepal, 1961, vol. II, pp. 16-17.

2. Government

2.1 National Government

Nepal a constitutional monarchy ruled by King Birendra through a Council of Ministers (king is Chairman), a palace Secretariat, and a four-tier system of panchayats or self-governing councils at village, district, zone, and national levels.

Villages with population of 2,000 or more elect 11 member councils, who then elect members of zonal councils, who in turn elect 112 members to National Panchayat; 15 of 112 represent "class organizations", non-political interest groups of workers, farmers, etc. An additional 23 members selected by king for total of 135 members in National Panchayat.

From latter King selects Council of Ministers who introduce all resolutions; King retains absolute veto power over any subsequent legislation. As a result, National Panchayat more a consultative body whose opinion solicited by king and his ministers. King also appoints 13 member Supreme Court. Organized opposition by political alignment inhibited by a ban on all political parties.

2.2 Recent Political Events

The following recent events of great political significance to Nepal:

1) Second constitutional amendment of December 1975 transformed Back to the Village Campaign Committee into legal body with great powers; controls national movement to mobilize development efforts; became political watchdog over panchayat activities, and a form of political office for panchayats at all levels; mobilizes mass opinion for party-less panchayat system.

2) In December 1977, after years of proposals, Nepal signed separate trade and transit treaties with India, as well as a treaty to control smuggling/trade deflection along Indian border. India gave Nepal "temporary" transit facilities through Radhikapur (NE Indian territory located between Nepal and Bangladesh); key step in Nepalese efforts to diversify trade by gaining permanent access to sea.

3) In early 1980, King Birhendra announced that all future elections would be based on adult franchise. He said Prime Minister would be chosen by popularly elected Panchayat or a National Panchayat; Council of Ministers would be responsible to latter. However, King will not abdicate his duties even though day-to-day administration of country will be in hands of elected representatives. No date set for referendum that will legalize changes.

2.3 Regional Organization

For local administration, Nepal divided into 75 districts, 14 zones, each of latter headed by appointed commissioner.

2.4 Key Political Figures (April 1980)

King.....Birendra Bir Bikram Shah Dev
Prime Minister.....Thapa, Surya Bahadur
Min. of Communication.....
Min. of Defense.....Magar, Balaram Gharti
Min. of Finance.....Thapa, Surya Bahadur
Min. of Foreign Affairs.....Shahi, K. B.
Min. of Forests.....Thapa, Netra Bikram
Min. of General Administration.....Thapa, Netra Bikram
Min. of Home & Panchayat.....Shrestha, Jog Mehar
Min. of Industry & Commerce.....
Min. of Irrigation.....Singh, Marich Man
Min. of Royal Palace Affairs.....Thapa, Surya Bahadur
Min. Water & Power.....Singh, Marich Man
Min. of Tourism.....
Min. of State for Education.....Yadav, Dambar Narayan
Min. of State for Food and
Agriculture.....Thebe, Vijaya Prakash
Min. of State for Health.....Magar, Balaram Gharti
Min. of State for Land Reform.....Malla, Hem Bahadur
Min. of State for Law & Justice.....Singh, Marich Man
Min. of State for Works & Transport...Malla, Hem Bahadur

3. Disaster Preparedness

3.1 Host Disaster Plan

National organization for disaster relief still in planning stage. Nepal Red Cross (NRC) presently responsible for said planning, usually made model responsible for relief operations in actual disasters; Royal Nepalese Army and Nepalese Police may also play extensive role when warranted. However, NRC has prepared "A National Disaster Relief Plan", a written proposal which became official GON "plan" in 1976. A Central Disaster Relief Committee (CDRC) instituted in same year to deal with policy questions, coordinate disaster response. Avoidance and prevention not priority areas, given extensive distribution and infrequency of major disasters in densely populated areas.

CDRC policy directives conveyed through GON channels to Zonal Commissioners who in turn relay them to District officials, and then to chairmen of village panchayats. CDRC composed of: Chairman (Chairman of NRC or GON Home Minister), Vice Chairman (Home Minister, if he is not Chairman), Ministers of Health, Defense, Food and Agriculture, Law, Foreign Affairs, Communications and Transport or their representatives; Inspector General of Police; Representatives of the Red Cross.

NRC has chapters in 62 of 75 Districts; raises volunteers in major disasters. In minor ones, makes cash grant payments via local panchayats. (See also Host Reserve).

3.2 US Plan Components

1) Ambassador determines existence of emergency; advises State/AID, Washington.

2) Command Post established by USAID Assistant Director, liaison made with Nepalese authorities, other embassies, potential aid donors.

3) After disaster needs clearly identified, request made to AID/Washington DRO. If needs not clearly identifiable, advisable to dispatch survey team with concurrence of GON authorities.

4) $25,000 relief donation from Ambassador, if required.

5) Establish emergency communications network. Embassy should encourage GON authorities to survey damage, then assess requirements based on GON reports.

3.3 US Staff Roles

In event of disaster, Command Post to be established in embassy; alternate Command Post at USAID Kalimati Durbar. Personnel assignments in Command Post:

a. Director	- USAID Assistant Director
b. Operations Officer	- Embassy Admin Officer
c. Deputy	- Embassy Communicator
d. Secretary	- Embassy
e. Consular Officer	- Embassy
f. Duty Officers	- from AID/Embassy roster

Sections

a. Logistics and Supplies

(1) Chief	- USAID Executive Officer
(2) Deputy	- Embassy General Services Officer
(3) Secretary	- USAID

b. Communications

(1) Chief	- Embassy Communications Officer
(2) Deputy	- C&R Officer
(3) Secretary	- Embasssy

c. Finance and Records

(1) Chief	- USAID/Controller
(2) Assistant	- Embassy Budget & Accounting Officer
(3) Secretary	- USAID

d. Liaison

(1) Peace Corps	- Embassy Admin Officer
(2) Red Cross, other agencies	- Military Attache & Consular Officers
(3) Foreign Embassies	- Embassy Political/Economic Officer

e. US Military

Military Attache

f. Medical Service

Embassy Medical Officer

Peace Corps Physician

3.4 US MDRT

MDRO - Mr. Julius E. Coles, Assistant Director USAID. Tel: 11519 (home); 11144, 11171 ext 59 (office).

Alternate MDRO - Mr. David Tiedt, Capital Projects Development Officer USAID. Tel: 13703 (home); 11144, 11171 ext 32 (office).

Admin. Officer - Rose Wong (Embassy). Tel: 11397 (home).

Consular Officer - Franklin P. Huddle (Embassy). Tel: 12525 (home).

Controller - Donald Long (USAID).

Pol/Eco Officer - Samuel R. Peale (Embassy). Tel: 13690 (home).

Mil. Attache - Col. Robert A. Farr (Embassy). Tel: 11656 (home).

Med. Officer - Dr. Bernard C. Meyer (Embassy). Tel: 11673 (home).

PAO - Diane Stanley (ICA). Tel: 12669 (home).

P. C. Director -

3.5 GON Disaster Relief Committee

Central Disaster Relief Committee

Position	Telephone
Chairman -	
Khadga Bahadur Singh	
Minister of Home-Panchayat	
Singha Durbar, Kathmandu - Office	15349
- Home	None
Vice Chairman -	
Prakash Bahadur Singh	
Minister of State for Forests	
Babar Mahal, Kathmandu - Office	14943
- Home	None

Member-Secretary-

Laba Bikram Shah

Under Secretary, Ministry of Home-Panchayat-
Office 15697, 15698
Home None

Members -

Assistant Minister of Forest (Position currently vacant) 15228

Dambar Bahadur Malla, Assistant Minister of Home-Panchayat - Office 12311
- Home None

Sher Bahadur Shahi, Secretary, Ministry of Home-Panchayat - Office 15697
- Home 12415

Acchut Bahadur Rajbhandary, Secretary, Ministry of Forest - Office 14943
- Home 12085

Devendra Raj Panday, Acting Secretary, Ministry of Finance - Office 14311
- Home 14987

Tara Dev Bhattarai, Secretary, Ministry of Health - Office 13091
- Home 21338

Nara Kanta Adhikary, Secretary, Ministry of Food, Agriculture & Irrigation - Office 15382
- Home 12385

Dr. J. N. Giri, General Secretary, Nepal Red Cross Society - Office 11761
- Home 15131

Hari Prasad Giri, Chairman, Federation of Commerce and Industry - Office 12096
- Home None

Nepal Red Cross Society

Dr. J. N. Giri, General Secretary - Office	11761, 15167
- Home	15131
Mr. T. R. Onta, Chief Executive Officer - Office	11761, 15167
Home: 15/1, Thamail, Kathmandu (no phone)	
Mr. Indra Bikram Shah, Disaster Relief Officer - Office	11761, 15167

Other

Snow Lions Foundation (for Tibetan Refugees), Canary Cottage, Jawalakhel	21241

3.6 International Donors

Representatives:

UNDRO

Representative - Mr. John Melford	
Office	11939, 11944
Home	11757, 14989
Deputy Representative - Mr. S. Hasegawa	
Office	11939
Home	12015

UNICEF

Representative - Mr. H. K. Kuloy	
Office	14581, 15124
Home	21846

WFP

Advisor - Mr. Arnold K. Childs	
Office	11939/27
Home	21516

FAO
Representative - Mr. L. Stenstrom
Office 11939/28

WHO
Representative - Dr. R. Chical
Office 13583, 15232
Home 11746

Asian Development Bank (ADB)
Principal Advisor - Mr. H. Johnston
Office 14217
Hotel Malla 15320

IBRD
Resident Representative - Mr. D. I. Thomas
Office 14792, 14793
Home 14944

3.7 Voluntary Agencies

Representatives

Agricultural Development Council
Associate - Dr. Shao-er Ong
Office 14713

Dooley Foundation
Administrator - Miss Ute Henker-Kothes
Office 13198

CARE
Director - Mr. Frank Brechin

World Education Incorporation
Project Director - Mr. Peter Vanmertens

United Mission to Nepal
Executive Secretary - Gorden Ruff
Office 1279, 14580

3.8 Other Participating Organizations

International Agricultural Development Services	
Chief of Party - Dr. Wayne H. Freeman	
Office	21615, 21356
Home	13244
University of California, Berkeley	
Chief of Party - Dr. Raymond W. Carlaw	
Office	12733/51
Home	13631
Management Sciences for Health	
Chief of Party - Dr. Duane Smith	
Office	14161
Home	12855
Lincoln School	
Principal - Mr. John Ritter	
Office	14482
Home	15405
US Educational Foundation	
Program Officer - Mr. S. B. Subba	
Office	11698
Home	.....

3.9 US Assessment

If GON concurs, survey teams to be dispatched to disaster site. Duties:

a. Prepare grid map of the entire disaster zone. Make several copies, numbering each grid.

b. Determine best available methods for reaching the disaster zone.

c. Survey teams should be equipped to live under emergency conditions for three to five days; if possible, have necessary communication capability for daily reporting to the Command Post.

d. Each survey team (when more than one) will survey designated sectors on the grid map.

e. Survey personnel not to become involved in local disaster relief action no matter how urgent; mission is to survey and report.

f. Survey personnel to be provided a basic field survey form.

3.10 Survey Team

Formed from in-country personnel.

Team No. 1

USAID Food & Agriculture Officer
USAID Assistant Program Officer

Team No. 2

USAID Education Officer
USAID Engineer

Team No. 3

USAID Capital Development Projects Officer
USAID Population Officer

3.11 MDRO/Reports

When a disaster strikes, the Mission's Disaster Relief Officer will:

a. Send a disaster alert cable to Washington to the Department of State and A.I.D. geographic bureaus concerned.

b. After additional information has been received on seriousness of the diaster, send an information follow-up cable to Washington.

c. If required send a request or requests for relief supplies.

d. For duration of emergency, arrange to send a steady exchange of information to Washington.

e. When emergency has terminated prepare a summary report.

Depending upon US Military participation in the relief effort, there may be reporting of military activities required.

3.12 Host Resources

GON discourages procurement of relief supplies outside Nepal; policy to purchase foodstuffs as near to disaster site as possible. Medicine, if required/available, purchased in Kathmandu. Indian and Nepalese markets considered equally adequate as source of simple commodities normally required for disaster relief operations. Thus, external agencies discouraged from purchasing relief goods in India as well. Direct shipment from donor countries also discouraged; high transportation costs, frequent experiences with inappropriate materials cited as reason.

General policy of GON to make cash grants to disaster-affected population for food, housing materials. Difficult, costly experience in 1972-73 in providing Title II famine relief (20,000 MT of corn) suggests soundness of policy, assuming availability of food and absence of famine in disaster area.

Others

UNICEF maintains regional stockpile in Singapore; could be drawn upon for disaster relief under certain circumstances. WHO maintains limited medical resources at New Delhi regional headquarters.

Region/Need

Disaster requirements for Tarai, Hill, Mountain regions generally different; cottons needed in Tarai, woolens in Hills and Mountains.

Rice a Tarai staple; corn and/or potato for Hill and Mountain people. Residents of Kathmandu Valley prefer rice. (See also Traditional Foods.)

3.13 Storage

Disaster relief supplies stored by Nepal Red Cross in own warehouses in Mahendranagar, Birgung, Biratnagar, and Kathmandu. Each warehouse controlled by a regional committee; major stock utilization decisions made by Central Disaster Relief Committee. Birgunj facility serves as trans-shipment point, covers flood-prone districts of Rautahat, Chitwan. Kathmandu facility serves western mountain districts of Dhaulagiri, Karnali.

Nepal Food Cooperation (NFC) has program to boost present grain storage capacity of 22,000 MT in 36 districts. By end of FY 1979, additional 16,000 MT storage capacity planned, 65,000 MT total capacity by 1981.

Storage Regions	Districts Covered
Mahendranagar	19
Birgunj	11
Biratnagar	16
Kathmandu	29
	75

Problems

Stockpiling not complete at any warehouse; resources not available for rapid stock build-up; inadequate budgets main constraint. In the interim, Royal Nepalese Army, Police resources made available on an ad hoc basis.

3.14 Disaster Types and History

Nepal experiences full spectrum of disaster types: floods and rainfall-related landslides, earthquakes, drought, famine and epidemics (smallpox, bubonic plague). Floods and rainfall-caused landslides are most common, though often only local in effect; annual events of June - October monsoon season. Landslides and flash floods are characteristic of Hill and Mountain regions, especially in eroded/deforested areas. Inundation flooding most common in broad valleys of major rivers and on Tarai plains. Drought, the earliest recorded disaster, often, as in 1973, coincides with famine (PL-480 food assistance given in that year). Relative risks and impacts of drought, famine, and flood unknown; differently assessed by US Mission and by team from Japan International Cooperation Agency.

Earthquakes, though infrequent (repetition time for a particular section of the main boundary fault, the primary fault line running the entire length of the Himalayan Mountain front, is several hundred years), are potentially most destructive events: quakes registering 8-8.5 on the Richter scale have been recorded. Seismicity of eastern Nepal higher than that of center. Series of destructive quakes appear to recur: 13th century series is supposed to have killed 1/6th to 1/3rd of population of Kathmandu Valley; 17 quakes recorded in 1823; 1833 series destroyed 18,000 houses in Kathmandu Valley. Earthquake of 6/12/1897, on Shillong-Chedrang fault, was assigned magnitude of 8.7 + by Gutenberg. Bihar-Nepal earthquake (1/15/1934) caused extensive damage to structures built on unconsolidated sediments of Kathmandu Valley; an estimated 3,400 deaths resulted. Had quake not occurred in early afternoon, death toll would have been far greater.

4. Population

4.1 National Demographic Characteristics

Estimated 1978 population is 13,000,000; average annual growth rate of 2.3% for past decade. 63% of population live in Hill and Mountain regions (including Kathmandu Valley) where density now 2740 per sq mi of cultivated land. 37% live in Tarai with a density of 858 per sq mi. 5% of total population are urban dwellers. (See Use/Distribution). Total labor force is 4.1 million.

4.2 General Status

Hill population more disadvantaged than population of Tarai; per capita income lower, food deficits common (net importers of food), nutritional deficiencies worse, general health problems worse, and clearly less infrastructure available (transport, irrigation, power, sanitation etc.). Major problems for Tarai population: land settlement and tenure.

4.3 Regional Distribution

Population By Region
1971

Region	Area in Sq Km	%	Population (in 1000') 1971 census	%	Density of population (person/sq km)
1. Western Mountains and Hills	44,286	31.1	2,008	17.8	45
2. Central Mountains and Hills	33,659	23.7	2,253	19.9	67
3. Eastern Mountains and Hills	30,832	21.7	2,222	19.7	72
4. Western Tarai	7,972	5.6	414	3.7	53
5. Central Tarai	10,024	7.1	906	8.0	90

Region	Area in Sq Km	%	Population (in '000') 1971 census	%	Density of population (person/sq km)
6. Eastern Tarai	14,664	10.3	2,900	25.7	198
7. Kathmandu Valley	764	5.0	586	5.2	768
Nepal	142,201	100.0	11,289	100.0	79
Mountains & Hills	108,777	76.5	6,483	63.0	60
Tarai	32,660	23.0	4,220	37.0	129

Source: Central Bureau of Statistics

Regions from K. B. Rajbhandari, Natural Environment and Crop Distribution in Nepal (Kathmandu: 1968).

Zonal/District Distributions

Population By Sex, Zone, and District - Nepal, 1971

Zone District	Total Population*	Male	(in '000) Female
Nepal	11,289 (100.0)	5,657	5,632
Mechi	581 (5.15)	297	284
Jhapa	221	118	103
Ilam	136	68	68
Panchthar	142	70	72
Taplejung	82	41	41
Kosi	834 (7.39)	423	411
Morang	288	151	137
Sunsari	214	109	105
Dhankuta	109	54	55
Terhathum	116	57	59
Sankhuwasava	107	52	55

Zone / District	Total Population*	Male	Female
		(in '000)	
Sagarmatha	1,306 (11.57)	650	656
Saptari	309	158	151
Siraha	299	151	148
Udaipur	112	55	57
Bhojpur	195	95	100
Khotang	164	80	84
Okhaldhunga	122	59	63
Solukhumbu	105	52	53
Janakapur	1,235 (10.95)	620	615
Dhanugha	323	166	157
Mahottari	327	166	161
Sarlahi	170	86	84
Sindhuli	139	70	69
Ramechhap	151	72	79
Dolakha	125	60	65
Narayani	1,073 (9.50)	550	523
Rautahat	319	162	157
Bara	226	118	108
Parsa	204	106	98
Makwanpur	158	80	78
Chitwan	166	84	82
Bagmati	1,410 (12.49)	709	701
Kathmandu	333	167	166
Lalitpur	149	75	74
Bhaktapur	105	53	52
Kavre Palanchok	235	116	119
Sindhupalchok	182	92	90
Dhading	223	113	110
Nuwakot	116	84	82
Rasuwa	17	9	8

Zone / District	Total Population*	Male	(In '000) Female
Lumbini	1,142 (10.12)	571	571
Nawalparasi	143	73	70
Palpa	209	102	107
Rupandehi	236	122	114
Kapilvastu	203	104	99
Arghakhanchi	127	62	65
Gulmi	224	108	116
Gandaki	1,010 (8.95)	489	512
Gorkha	172	85	87
Tanahu	164	80	84
Syangja	262	126	136
Kaski	145	71	74
Lamjung	138	67	71
Mauang	7	3	4
Parbat	122	57	65
Dhaulagiri	247 (2.46)	135	142
Baglung	173	84	89
Myagdi	57	28	29
Dolpa	19	9	10
Mustang	28	14	14
Rapti	795 (6.72)	374	385
Dang Deukhuri	228	115	113
Pluthan	136	65	71
Salyan	139	68	71
Rolpa	163	80	83
Rukum	93	46	47
Bheri	559 (4.95)	283	276
Banke	121	63	58
Bardiya	102	52	50
Surkhet	103	51	52
Dailekh	153	76	77
Jajarkot	80	41	39

Zone / District	Total Population*	Male	(In '000) Female
Karnali	180 (1.59)	92	88
Jumla	121	62	59
Tibrikot	10	5	5
Mugu	25	13	12
Humla	24	12	12
Seti	584 (5.17)	290	294
Kailali	127	65	62
Doti	158	78	80
Achham	131	63	68
Bajura	60	30	30
Bajhang	108	54	54
Mahakali	39 (3.00)	174	165
Kanchanpur	63	33	30
Dandeldhura	93	45	48
Baitadi	123	62	61
Darchula	60	34	26

* Figures within the bracket indicate population of the zone as percentage of total. Source: Central Bureau of Statistics, H. M. G., Nepal Sankhikiya Sandesh, Year 8, No.1 (July 1971).

5. Health, Nutrition, and Housing

5.1 Overall Health Status

Health level of general population low; most have no access to modern medicine; services inadequate, unevenly distributed. Despite progress in last 25 years, lack of reliable data makes it difficult to assess magnitude of health problems. Malaria on verge of control after 1960's eradication program; serious recurrence in Taral lowlands in 1975. Since sanitation is poor and potable water virtually non-existent, gastrointestinal diseases endemic; hepatitis, amoebiasis, cholera; tuberculosis and typhoid also widespread.

New GON program for integrated rural health services still in its infancy. (See also Health Services).

5.2 National Vital Statistics

From IBRD Report 1978:

crude birth rate:	46.3/1,000 live births (1975)
crude death rate:	27.8/1,000 live inhabitants (1975)
infant mortality:	200-300/1,000 live births (1975)
life expectancy:	42.5 years

5.3 Health Services and Facilities

Health services are decentralized. Medical facilities are provided through hospitals at regional, zonal and district levels and health posts at village level. Only general medical care services are available in rural areas, while specialized services such as surgery, obstetrics, gynecology, pediatrics and orthopedics concentrated in urban areas. Crowded conditions, staff and supply shortages, and low levels of sanitation are prevalent.

Hospitals

Location (Town)	# Beds
Ilam	15
Bhadrapur	25
Bhankuta	15
Dharan	15
Dharan (British)	50
Inarwa	10
Biratnagar[1/]	100
Rangeli	15
Solukhumbu Kunde[2/]	11
Bhojpur	15
Rajbiraj[1/]	50
Jiri	25
Sarlahi	15
Jaleswar	15
Janakpur[1/]	50
Trisuli[2/]	25
Chautara	15
Panepa[2/]	15
Kathmandu Valley (1,000)	

Location (Town)	# Beds
Bir Hospital	300
IRL Maternity	90
Royal Army	170
Kanti	50
Tokha	50
TB Association	25
Independent[2/]	10
Lalitpur	25
Shanta Bhawan[2/]	135
Anandaban[2/]	100
Bhaktapur	25
Bhaktapur[2/]	20
Bharatpur	25
Hetaura	25
Birgunj[1/]	50
Kalaiya	15
Gaur	15
Pokhara[1/]	50
Shining[2/]	50
Bandipur	15
Gorkha	15
Ampipal[2/]	10
Tainghas	15
Tansen[2/]	20
Taulihawa	15
Sibaraj	7

Location (Town)	# Beds
Butwal 1/	50
Paklihawa (British)	20
Bhairawa	15
Parasi	15
Baglung	15
Dang	15
Jumla	15
Surkhet	15
Bardiya	15
Banke 1/	50
Doti	15
Kailali	15
Dandeldhura	15
Mahendranagar	15

1/ Zonal hospital
2/ Missionary hospital

5.4 Other Facilities

From IBRD 1978:

410 health posts in operation
34 health centers (1971)

5.5 Health Personnel

Doctors.....325 (1978)
Nurses, Midwives.....481 (1971)
Aux. Health Workers...405 (1971)

1 MD/33,000 people (1975)
1 MD/6,500 people in Kathmandu Valley
1 nurse-midwife/23,000 people (1971)

5.6 Traditional Medicine

Susceptibility/curative practices based on widespread belief in ghosts, evil spirits, planetary influences, and displeasure of ancestors. Most villages, especially in Hill region, have shamans; illnes cured by incantations recited over victim. Ayurvedic system of medicine also widely practiced; pharmacopoeia of latter based on herbs, roots, plants. Reportedly, 140 Ayurvedic physicians (vaids), 34 dispensaries in Nepal. National college of Ayurvedic Medicine in Kathmandu.

5.7 Malnutrition

Although information scanty malnutrition and protein deficiencies prevalent, especially in Hill region and among children. Recent survey showed 2/3rds of children in Hills (1/2 in Tarai) below normal weight/height. Iodine deficiency acute; goiter endemic; incidence of cretinism and deaf mutism particularly high in north. Beri-beri prevalent in southern region and Plain Terai area. Nutrition programs barely initiated. (See Health).

5.8 Diet Summary

Most common diet high in carbohydrates, low in vitamins and protein. Rice principal staple wherever it can be grown. Potatoes, maize, millet and barley less desirable staples. Main meal eaten late in morning at poorest households; a second, late evening meal for higher income families. Tea most common drink.

Rice usually accompanied by dal, lentils cooked with salt and saffron, and sometimes onions fried in ghee. Chapatis made from millet; other grains made into porridge. Onions, beans, radishes, other vegetables and fruits eaten when available. Milk, cheese, ghee regular part of overall diet; meat, fish, game, poultry and eggs are luxuries.

	1963-1967		1971-1975	
	Calorie/cap/day	Per cent	Calorie/cap/day	Per cent
Food 1/	2,049.8		1,994.4	
Cereals	1,715.0	83.6	1,667.0	83.6
Rice (Milled)	932.2	45.5	971.0	48.7
Wheat (Flour)	88.2	4.3	144.8	7.3
Maize	613.2	29.9	480.6	24.1
Others	81.4	3.9	70.6	3.5
Roots & Tubers	47.5	2.3	41.8	2.1
Pulses	41.2	2.0	37.6	1.9
Vegetables	6.8	0.3	7.3	0.4
Fruits	11.5	0.6	10.9	0.5
Meat	25.0	1.2	24.7	1.2
Milk	97.5	4.8	97.4	4.9
Eggs	3.4	0.2	3.6	0.2
Others 2/	101.9	5.0	104.1	5.2

1/ Total food from agriculture, forestry and fishing
2/ Computed as a residual

Source: Unpublished FAO material, February 1976

5.9 Regional Variations in Diet

The following are nutritional surveys for selected areas of Nepal:

Karnali Zone (west): from 10/68 - 5/70; population 175,000.

Basic diet consists of rice and lentils or chapatis; maize or potatoes in some areas. Meat (sheep, goat, poultry) infrequently eaten; caste taboos limit types

of meat consumed leading to protein deficiency. Chilis and other spices frequent accompaniments. Local Tibetan and Indian salt not iodized. (See Nutrition).

Central Nepal: survey of Gurung tribe.

Milk - buffalo main source; milk by-products include chugu (oil), kola (skimmed milk), cottage cheese, and dahi (a type of yogurt); oil for cooking.

Vegetables - tomatoes, kidney beans, sweet potatoes, chili, spinach-like leaves.

Cereals - adult male averages 550 manas per day (572 g). Staples are: rice, millet and maize; rice preferred but millet more available during certain seasons; maize main diet of poorest households.

Drinks - millet beer, tea.

Fruit - limited seasonal supply, although few attempts to cultivate them. Sugar and honey popular.

5.10 Food Taboos

Hindus prohibit killing cattle, eating beef. However, other meat (wild game, pigeons, deer, boar, goat) eaten when available. Most Newar (except highest castes) eat buffalo.

5.11 Housing Types/Region

Tarai: villages in lowlands compact. Houses usually rectangular and one story, with steeply pitched, thatched, gable roofs; wattle walls (woven of twigs, coarse grass); more prosperous households have tile roofs, mud walls.

Mountain: houses vary by group/region.

Limbu - dispersed settlements near Sikkim. Houses of wood, most two stories; storage on ground floor, living quarters on second floor. Gable roofs, usually thatch; bright colors decorate walls.

Tamang - north and west of Kathmandu Valley. Houses in compact clusters in center of terraced slopes. Usually two stories; roofs wide-angled gables paralleling terrace walls.

Gurung - south flank of Annapurna at 10,000 feet. Loosely clustered villages of 2 story rectangular houses; dry stone walls, slate-gable roofs. In Pokhara area, Gurung houses elliptical and oval (although fast disappearing); white-washed walls, conical roofs covered with thatch or slate. Also one story wooden and earth houses with thatched roofs.

Magar - western and southern flanks of Dhaulagiri massif. Usually large houses in clustered villages; two stories with flat or hipped roofs.

Bhote - north of Annapurna; frequently near alluvial fans of glacier-fed streams. Tight cluster of tall stone and mortar houses, perched on shelves on sides of deep canyons. Adjacent houses frequently share stone walls; villages look fortress-like. Roofs usually flat.

Sherpa - high mountains west of Everest. Settlements dispersed; two-story houses with white plaster walls; low-pitched gable roofs covered by slate, shingles or wooden planks. Ground floor for farm tools.

5.12 Settlements

95% of population lives in villages, small market towns. In 1961 census, 29,210 villages averaging 335 people per village. In Tarai, many villages of 500 houses or more; in Hill region (especially at higher elevations), 25 houses common. Compact settlements mainly in Tarai; dispersed in upper Hills and Mountains (9,000 - 10,000 ft). Clustered settlements limited to narrow valleys, gorges above 10,000 ft. (See Population).

6. Economy

6.1 Overview of Economy

Since opening borders to "modern" world in 1950's, Nepal has made little concrete progress in resource development/mobilization. Serious constraints to economic growth include: severe population pressures forcing rapid occupation/exhaustion of agricultural lands (especially in Hills where 60% of population lives) resulting in massive soil erosion, deforestation of marginal food growing areas; a topography so varied (mostly rugged) as to prevent adequate development of transport/communication/power infrastructure, leading to dependence on India for most trade (70%) and outlets to sea; illiteracy rate of 80% as of 1975; and a host of other constraints such as shortages of raw material, few markets, and acute shortages of managerial, technical and skilled personnel.

Despite attempts to diversify trade, agriculture still mainstay of economy: 65% of GDP, employs 90% of population. Recent stagnation of agricultural production accounts for negligible growth of economy since 1975; GDP growth in 1977/78 was 2%, well below 4-5% envisioned by fifth Five-Year Plan; adverse weather will probably limit 1978/79 growth to 2%. Per capita annual income $120 but for many in Hills and Mountains only $30. As a result, Five-Year Plan elevates agriculture to highest priority with sizeable cutbacks in transportation outlays. However, outlook for export staples, rice and jute, unfavorable. Rice exports dropping steadily since 1960's; prospects dim for forestalling Nepal's transformation to a net importer of food in very near future.

Manufacturing sector limited to cottage, other small scale industries; employs over 1,000,000 people in approximately 400,000 mostly rural households; accounted for 7% of GDP in 1971. Main activity is processing raw material (wool, fiber, wood, food) for local markets; 15% of production exported, mainly metal handicrafts, wool products, readymade garments. However, of 8,000 cottage industries registered with Cottage/Rural Industries Dept., 1/3 not in operation; few markets, shortage of raw materials. Private plant facilites (selected) are for jute, sugarcane, wool, cotton, synthetic textiles, and ghee.

In 1976/77, industrial sector boosted by opening of new cement, soap, and polythene pipe factories; latter two in Dharan and Balaju; also jute, sugar mill capacities improved. Other sectors: minerals

barely developed, with current production limited to marble, limestone, copper. Exploration shows commercial deposits of magnetite, zinc, lead, iron ore. Tourism only exception to economic trends; increasing rapidly, but support services not keeping pace, limiting impact to a few localities. Virtually no private foreign investment in Nepal. (See Agriculture).

Though inflation rate only 3.7% in 1975/76, and 0.9% in 1976/77, inflation increasing; actual inflation rate at 13% for 12 months ending Sept 1977. Use of bank financing to cover GON deficits, and continuing rise in foreign assets contributing to inflationary pressures; inflation rate increases likely to continue. 1976/77 budget deficit at 458.1 million rupees; 300 million met through internal loans, 158 million from cash reserves.

Performance of external sector good; foreign exchange reserves as of Sept 1977 at $144 million (about 10 months of imports), 16% higher than Sept 1976 despite large increases in trade deficit with India in 1976/77; improvement of latter essential in face of steadily rising imports of development goods, raw materials. Revenues from tourist industry (may soon displace rice exports as largest source of foreign exchange) will not be enough to offset rising import costs.

6.2 Trade with India

Heavy dependence on trade with India problematic; frequently a source of conflict. Theoretical benefits to Nepal: 1) vast Indian markets for Nepalese goods; 2) special advantage for Nepalese imports: low tariffs and remission of Indian excise taxes (provided value added in Nepal exceeds a certain proportion; 3) Indian consumer and capital goods exports more appropriate to Nepalese conditions, less costly than similar products from other countries. Since most imports/exports to other countries go through Calcutta (400 mi from Kathmandu) problems center on delays, both in shipping and transloading at border, pilferage, shipment damage, and warehousing shortage in Calcutta. Effects of recent trade agreements to control smuggling, trade deflection across traditionally open border not yet measurable. However, given pervasive economic links in form of tariffs, quotas, and other agreements, as well as difficulty of controlling border crossings, even slight policy changes have mercurial effects on all aspects of currency/trade/economy in Nepal.

6.3 1978 Trade Status

Overall trade position poor. Huge trade gap with India continues and, in first 2 months of FY 1977/78, even widened; exports off 40% due to decline in rice demand. Revenue shortfalls likely; caused in part by now suspended issuance of import licenses against export bonus vouchers which lead to widespread over-invoicing.

6.4 GNP/GDP

GDP: $1.3 billion (FY 1977, at current prices).

Gross Domestic Product of Nepal
At Current Market Prices

(in Rs. million)

Sector	1972/73	1973/74	1974/75
Agriculture	6,578	8,851	9,949
Mining	3	3	3
Manufacturing	312	397	463
Construction	153	163	172
Transport and Communications	347	422	453
Cottage Industry	659	885	995
Financial Institutions	163	183	306
Ownership of Dwelling	779	796	813
Public Admin. and Defense	228	250	332

Sector	1972/73	1973/74	1974/75
Electricity	29	28	34
Wholesale and Retail Trade	336	374	738
Services	382	456	544
Total:	9,969	12,808	14,802

Note: The National Planning Commission discontinued publication of National Income Accounts after 1974/75.

Source: National Planning Commission

6.5 Production

Production of Principal Industries

Product	Units (1,000)	1974/75	1975/76	1975/76 1/	1976/77 1/
Sugar	Metric tons	11	11	11	16
Matches	Gross	649	679	491	488
Jute Manuf.	Metric tons	12	16	11	14
Soaps	Maunds	24	26	17	45
Leather Goods					
(a) Shoes	Pairs	70	59	46	35
(b) Leather	Kg	55	665 2/	435 2/	739 2/
Agriculture Implements	Kg	300	12,141 3/	68,117 3/	-
Tea	Kg	47	328	168	200

Product	Units (1,000)	1974/75	1975/76	1975/76 1/	1976/77 1/
Stainless Steel Utnls.	Kg	156	175	110	130
Straw board	Kg	1,022	900	693	N.A.
Textiles	Metric tons	-	3,896	2,938	3,100

1/ First nine months only
2/ Thousand pieces
3/ Pieces

Source: Economic Survey , Min. of Finance

6.6 Imports

Total imports, mainly from India, were $170.6 million in the first 9 months of 1978; up from a total of $170 million in 1977. Increase due to cash import program of cement, fertilizer, other basic commodities, as well as sharp price increases for petroleum and fertilizer from India. Other import items include: construction material, metal products, cotton, textiles, and salt.

Composition of Total Imports
(in Rs million)

Foodstuffs & Raw Material	1974/75 1/	1975/76	1976/77 2/
Foodgrains & live animals	241.3	291.1	183.2
Beverages & tobacco	18.9	42.4	15.7
Inedible crude materials except fuel	63.8	88.7	28.6
Mineral fuels & lubrication	182.7	211.7	234.7
Animal & vegetable oil and fats	7.0	7.4	6.8
Sub-total	513.7	641.3	469.0

Manufactured Products			
Chemicals & drugs	179.5	190.1	180.6
Semi-processed raw materials	509.5	545.9	600.8
Machinery & transport equipment	270.0	413.4	366.1
Other manufactures	198.1	168.6	134.9
Sub-total	1,157.1	1,317.8	1,282.4
Other Products	29.9	22.7	235.8 3/
Total Imports	1,700.7	1,981.8	1,987.2

Note: Compiled on customs basis

1/ Eleven months only
2/ Provisional only
3/ Including recorded but unclassified imports

Source: Nepal Rastra Bank

6.7 Exports

Indian trade restrictions caused export setbacks in 1977. Increased domestic consumption/lower production of rice also contributed to export declines, approx. 11% below 1976 rice export levels. Other export items to India include: wheat, jute, and jute products, ghee (butterfat), oilseeds and timber.

Composition of Total Exports
(in Rs million)

Foodstuffs & Raw Materials	1974/75 1/	1975/76	1976/77 2/
Foodgrains & live animals	517.5	804.0	516.0
Beverages & tobacco	0.5	4.0	11.8

Inedible crude materials except fuel	213.3	226.3	308.5
Mineral fuels & lubrication	1.5	1.7	-
Animal & vegetable oil and fats	2.4	1.8	5.2
Sub-total	735.2	1,037.8	841.5
Manufacturing Products			
Chemicals & drugs	0.9	9.3	10.4
Semi-processed raw materials	28.1	104.7	118.5
Machinery & transport equipment	2.1	3.7	1.6
Other manufacturers	58.3	23.0	27.2
Sub-total	89.4	140.7	157.7
Other Products	12.1	7.3	169.7 3/
Total Exports	836.7	1,158.8	1,168.9

Note: Compiled on customs basis

1/ Eleven months only
2/ Provisional only
3/ Including recorded but unclassified exports

Source: Nepal Rastra Bank.

7. Agriculture

7.1 Overview of Agriculture

Agricultural growth stagnant for a decade; from 1969-73, 1.2% rise per year for food production, 2% for population. Labor efficiency very low because of small farms, hand methods, seasonal work, under-employment much of year, and high "man-productive" labor time (trekking to fields, carrying water, and fuel). As a result, productivity extremely low, compounded by lack of irrigation, inadequate transportation, few improved seeds, fertilizers and other inputs; and declining land/labor ratios. Apart from Kathmandu Valley, virtually no productivity per surface unit increases for any crop. Opening up new lands accounted for sporadic production increases, but new land mostly exhausted, non-existent in Hills. Almost all arable land in use.

Problem in Hill region acute; there, 2/3 of 13 million population live on 1/3 of total arable land; timber losses, soil erosion at crisis stage. One-third of Hill population in agriculturally marginal areas; heavy migration to Tarai in off-season; 400,000 in last decade moved there permanently, accelerating destruction of unsuitable growing lands, creating ethnic/religious conflicts. Crowning irony of agricultural sector is present imbalance between Tarai surpluses that go to India (legally and illegally) and, despite higher yields than Tarai, chronic shortages of food grains in Hill region.

Current Five-Year Plan emphasizes quick-yield agricultural development with irrigation, water management projects. Objectives are to develop horticulture, animal husbandry and vegetable production in Hills, and expand food grains, cash crops in Tarai by multiple cropping, crop diversification, better inputs. Research Stations/Farms established at Khumaltar, Rampur, Parwanipur, Bhairawa, Nepalgunj, and Tarahara. Branch stations begun at Jumla, Kakani, and Jiri. However, short of major breakthroughs in production, food position in Hill region will worsen; still most urgent problem of agricultural sector.

7.2 Production by Region

Regions:

Mountains - unsuitable for agriculture. Livestock main source of livelihood; farmers move south for pastures/fodder in lower forests. Sheep and yaks principal animals with ghee and wool main source of cash income. Other crops include: potatoes, barley, some vegetables.

Hills - fertile but farmed intensively. Main crops are maize and paddy but wheat, barley, millet, rape seed also grown. Livestock important: cattle, buffaloes, goats; ghee principal export product. Numerous production problems: farms isolated and small (average less than 0.6 ha/family), food deficits, seasonal labor surpluses, subsistence incomes, wide array of micro-climates. Also, institutional sources account for only 10% of Hill farmer's loans.

Tarai - agricultural backbone of economy with greatest potential for increased productivity. Paddy major crop. Others: maize, wheat, barley, millet. Major cash crops are jute, tobacco, sugarcane, oil seeds. Generally a surplus area with average land holdings of 1.6 ha/family. Bullocks and buffaloes main source of agricultural power/transport.

Livestock in 1969-70: 3.5 million buffaloes, 2.2 million goats, 2.1 million sheep, and 320,000 pigs. Religion restricts use of cattle to milk, draught only (milk use mainly in Kathmandu Valley).

7.3 Agricultural Production

Area, Production and Yields of Major Crops

Foodgrains:	1973/74	1974/75	1975/76	1976/77	% Change 1975/76-1976/77 +/
Paddy					
Area	1,227	1,240	1,256	1,261	
Production	2,416	2,452	2,605	2,385	- 8.4
Maize					
Area	453	458	452	452	
Production	814	827	748	787	45.3
Wheat					
Area	274	291	329	348	
Production	308	331	387	362	- 6.5
Barley					
Area	28	28	26	25	
Production	26	26	25	21	
Millet					
Area	125	125	126	123	
Production	142	143	143	138	- 3.2
Cash Crops:					
Sugarcane					
Area	16	15	15	18	
Production	267	251	253	311	23.1
Jute					
Area	33	N.A.	N.A.	N.A.	
Production	40	40	42	45	7.1
Oilseed					
Area	114	112	113	108	
Production	65	65	68	61	- 10.4
Tobacco					
Area	5	7	7	7	
Production	4	5	5	5	6.3

Foodgrains:	1973/74	1974/75	1975/76	1976/77	% Change 1975/76-1976/77 1/
Potato					
Area	53	54	53	52	
Production	306	307	304	269	- 14.2

1/ Provisional

Note: Area in '000 ha. Production in '000 m ton. Yield in m ton/ha.

Source: Ministry of Finance, Economic Survey, various issues.

Food Grain Production By Regions In Nepal, 1972/73
In (000) Metric Tons

	Paddy	Maize	Wheat	Barley	Millet	Total	% of Food-grain Production	
Eastern Tarai	956	65	104	4	10	1,139	34)	
Western Tarai	473	89	74	1	6	643	19)	61
Inner Tarai	130	109	16	1	5	261	8)	
Eastern Hills	207	243	53	3	39	545	17)	39
Western Hills	244	316	65	16	74	715	22)	

7.4 1979 Status

Rains in January/February 1979 benefited the wheat crop particularly in Tarai area/ Wheat crop conditions generally good except in Nuwakot and Ramechap districts where dry weather prevails. If dry weather continues during spring planting, rice and corn production may be down.

Base 57616 7-68

8. Physical Geography

8.1 Climate/Regions

Climate highly varied; great differences in altitude within a small area, along with monsoonal alternation of wet and dry seasons accounts for sharp contrasts between neighboring regions. Within space of 100 mi from north to south, most of world's climatic zones approximated; from Arctic tundra in mountains, to deserts in extreme northwest, to tropical jungles in lowlands. In general, average annual rainfall decreases from east to west. Violent thunderstorms, and destructive hailstorms common, especially in foothills and mountains. From north to south, 4 climatic zones:

Mountains

Includes upper part of Himalayan range from altitudes of 10,000-29,000 feet; winters long and severe, summers short and cool; permanent frost prevails. Snowline at 12,000-14,000 feet but higher in dry regions; tree line at same altitude but lower in dry areas. Precipitation varies widely but averages 20 inches annually.

Foothills

Includes the Mahabharat Lekh range and high-lying valleys from 4,000 to 10,000 feet. Rainfall/temperature data scarce; climate classified as temperate with warm, rainy summers and cool to severe winters.

Kathmandu Valley

A distinctive micro-climate with rough correspondence to 3 seasons: rainy, hot and cold -- the latter two relatively dry. Rain from June through September with 60" the annual average. Cold season from mid-October to mid-April; January the coldest month with range of average daily minima from 36 degrees F to 64 degrees; snow and freezing rare. May and June the hot months; temperatures seldom exceed 90 degrees F at noon.

Tarai

Includes plains along Indian border and lower hills to 4,000 feet. Usually hot and humid during heaviest rainfall from June to mid-October; 80% of precipitation from mid-June to mid-September.

March through June the drv season: vegetation turns brown under scorching sun. Average temperatures in summer and winter from east to west: 80 degrees F and 90 degrees F, 60 degrees F and 55 degrees F respectively.

8.2 Temperature

(Degrees in Fahrenheit)

City	Range	Jan	Apr	Jul	Oct	Extreme
Kathmandu	Max	65	84	84	80	99
	Min	36	53	69	56	27

8.3 Precipitation for Kathmandu*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rainfall	0.6	1.6	0.9	2.3	4.8	9.7	14.7	13.6	6.1	1.5	0.3	0.1

* In inches

8.4 Landforms

Nepal a heavily mountainous, landlocked rectangle averaging 90 to 150 mi in width; about 500 mi long; total area of 54,400 sq mi. Bounded on north by Tibet, on east by Sikkim, and on south and west by India. Three major geographic regions: Mountain Region with 3/4 of total land area; Kathmandu Valley (also Nepal Valley) enclosed in east-central Mountain Region; Tarai Region along Gangetic Plain of India.

Mountain Region

Part of Himalayan Range, marked by parallel north-south ridges, flanking deep, narrow, south-sloping valleys. Valleys, hills and

slopes densely populated wherever soil is tillable; otherwise sparsely settled. Can be divided into three areas:

a) Eastern Mountains (10,114 sq mi) containing 4 of 6 highest peaks in world, all of which situated on a 30 mi segment of Tibetan boundary; forms massive white, saw-toothed range accessible by 4 well-traveled passes leading to Tibet: Khangala Deorali, Rakha La to east of peaks, and Nangpa La, Kodari (Kuti) to west of peaks.

b) Western Mountains (11,076 sq mi) a jumble of ridges and deep valleys projecting from main Himalayan range; heavy precipitation supports lush vegetation. Principal pass into Tibet is Rasua Garhi.

c) Far Western Mountains (18,879 sq mi) or 35% of total country area. Driest, most sparsely settled of 3 mountain regions; scattered settlements in river valleys; southward drainage interrupted by east-west ranges as streams zigzag toward Ganges.

Kathmandu Valley

A 218 sq mi circular basin just south of Eastern and Western Mountain Region junction. Contains Nepal's 3 largest towns and considered heart of country. Valley floor 4,000-5,000' above sea level with ample rainfall, continuous growing season, intensely cultivated soils. Protected from icy winter winds by Himalayan heights to north, and shielded from extreme summer monsoon by Mahabharat Lekh range in south.

Tarai

A belt of narrow, alluvial land along border with India: total area 8,969 sq mi. Tarai a northern extension of Gangetic plain; varies from 100-600 ft in altitude, 5-55 mi in width. Contains parallel ranges of Siwalik (Churia) and Mahabharat Lek; former to 5,000', latter to 10,000'. Especially in east, Tarai crossed by many streams, which carry tons of silt, sand, gravel, and huge boulders from mountainous north. Divided into six regions:

a) Eastern Tarai, second only to Kathmandu Valley in favorable conditions for human habitation: generally level, well drained, fertile soil, ample and dependable rainfall. Also benefits from commercial road/rail links to Indian population centers.

b) Eastern Inner Tarai, the narrow eastern section of Mahabharat Lekh range. Cultivation limited to scattered patches of grain on hillsides; covered with dense forest while deep, narrow and wet valleys infested with malaria carrying mosquitos; population virtually isolated.

c) Center Inner Tarai, a transition zone between Eastern Tarai and Kathmandu Valley; severely eroded hill slopes and forested mountains; alluvial soils in river valleys. Despite oppressive humidity, high incidence of malaria, many agricultural development and settlement expansion projects underway.

d) Western Tarai, a narrow strip of flat, fertile land producing vegetables and grains. Villages dot landscape; most connected by cart roads. Third in population density after Kathmandu Valley, Eastern Tarai.

e) Midwestern Tarai characterized by rounded hills covered with open forests. Most slopes severely eroded by monsoon rains; valley bottoms generally strewn with boulders, driftwood, other debris carried down by runoff,

f) Far Western Tarai is driest region of country but rainfall ample for vegetation. Monsoon occassionally torrential, leaving deep mud, vast swampy areas. Forests denuded in some accessible places to meet timber demand in Indian markets; forests also cleared for farming by burning. Population densities comparable to sparsely settled mountainous areas to the north.

8.5 Soils

In the Tarai, fertile, alluvial soils; occassional pockets of sand and gravel; with dependable water supply, well suited to intensive agriculture. Soil in Mahabharat Lekh and Siwalik ranges less fertile than Tarai, but contain the Bhabar, a belt of sand, gravel and boulders deposited during monsoon; averages 8 mi in width and supports a forest cover which collects detritus from mountain slopes, protecting Tarai lowlands from infertile sand and gravel. Soil of Mountain Region thin and stony; soil in valley beds suitable for meadows and forests.

Erosion

Soil erosion widespread. Annual monsoon floods damage vast areas of cropland in Tarai. In eastern Nepal, especially in valleys of the Tamur, Arun and Sun Kodi Rivers, forests cleared for farming; indiscriminate cutting/burning, and overgrazing also accelerating erosion.

8.6 Land Use

Of total land area in 1977: 14% under cultivation, 32% forest, 15% under perpetual snow, 26% unreclaimable waste land, 13% potentially reclaimable.

Note: In Hill region, 0.1 ha of cultivated land available per capita; 0.3 to 0.4 ha per household.

	Area in Hectares (A)	Cultivated Land in Hectares (B)
Western Mountain and Hills	4,418,540	217,215
Central Mountain and Hills	3,365,964	179,635
Eastern Mountain and Hills	3,082,518	206,300
Western Tarai	792,202	208,987
Central Tarai	1,002,330	288,500
Eastern Tarai	1,466,458	914,600
Kathmandu Valley	76,405	74,882
Nepal	14,209,417	2,090,113

Source: Adapted from Economic Data Paper, Vol. XII, U.S. Aid.

Region	No. of Districts	Percent of Total: Population	Land Area	Cultivated Area
Mountain	16	9.6	33.0	4.8
Hill	36	47.2	43.5	27.3
Tarai	20	38.0	23.0	65.5
Kathmandu Valley	3	5.2	0.5	2.4

Howard W. Hjort, Assisting Agricultural Development in Nepal . FDD Field Report 33, USDA cooperating with USAID, June, 1973, p.3.

Density of Population Per Cultivated Land, 1971

	Area under Cultivation (Sq Km)	Density per Unit arable land (person per sq km)
1. Western Mountain and Hills	2,172	924
2. Central Mountain and Hills	1,796	1,254
3. Eastern Mountain and Hills	2,063	1,077
4. Western Tarai	2,105	197
5. Central Tarai	2,885	314
6. Eastern Tarai	9,146	317
7. Kathmandu Valley	749	783
Nepal	20,916	540
Mountain and Hills	6,031	1,075
Tarai	14,136	299

Note: 1. Population in 1971.

2. Areas under cultivation are for fiscal year 1969-70.

Source: 1. Central Bureau of Statistics, His Majesty's Government of Nepal.

2. Economic Analysis and Planning Section, Ministry of Food & Agriculture, H.M.G. Nepal.

8.7 Land Distribution

Despite land reform legislation, current rental agreements appear to favor absentee landlords with little incentive for tenant to increase production. 1971 study of 20 Tarai districts showed skewed land distribution; 3.5% of owners control 30% of land while 54% of owners control 13%. 50% of major crop output kept by tenant, but latter also pays for all inputs; hired labor employed on 70% of lands owned by absentee landlord.

8.8 Resource Conservation

Part of King Birendra's 1977 New Year's speech emphasized serious problem of natural resource degradation. Between 1964-76, of 640,200 ha of forests, 180,500 ha destroyed by landslides, soil erosion; latter a nationwide problem. Of 1977/78 budget, 135.8 million rupees allocated for soil erosion control. (See Erosion).

8.9 Landslides

Daraundi River in Gorkha Valley, Sarada River in Sallayan Valley good examples of raging monsoon season river beds which cause numerous landslides.

8.10 River Systems

Three river systems, each with its headwaters on Tibetan plateau, that drain nearly all Nepal: Kasi River drains Eastern Mountains, Narayani the Western Mountains, and Karnal, the Far Western Mountains. After plunging through deep gorges, waters drop huge quantities of sediment and debris on plains. Most Tarai rivers overflow their banks onto wide floodplains during rainy season; many change course. Receding waters leave vast, stagnant pools in former streambed sections.

Heavy water flow through maze of narrow river channels provides fertile, alluvial soil and great potential for hydroelectric power. However, deep gorges inhibit development of communications network, isolate many upstream settlements.

The Kosi

Seven major affluents with Arun the principal one; rises almost 100 mi inside Tibetan plateau. Sun Kosi and Tamur two other major tributaries; flow eastward and westward respectively; join Arun north of eastern section of Mahabharat Lekh range to form south-flowing Sapt Kosi. Floodwaters of latter move slowly across Tarai from June to September, leaving very heavy deposits of alluvium; no defined banks.

The Narayani

Cuts through Western Mountains; gorges of some of its tributaries the deepest in the world. Northwest of Pokhara, Kali Gandaki tributary (streambed elevation 3,630 feet) flows between Dhaulagiri and Annapurna, highest peaks in region. High altitudes and shallow basins with intervening rapid descents present great hydroelectric potential. Lower Narayani navigable in winter and when not in flood stage by small steamers, timber barges.

The Karnali

Noted for deep gorges but generally too wide for spanning by locally built suspension bridges. Currents also too rapid for safety in local dugout canoes. Thus, river tends to isolate settlements, hinder travel to other parts of country.

8.11 Mountains - see Landforms, Climate

8.12 Seismicity - see Disaster Types

9. Transportation and Logistics

9.1 Road Network

4,200 km of roads as of April 1977: 1,750 km paved, 556 km gravel, 1,830 km fair weather. Two main roads:

a) North-South road from Indian border at Birganj (Raxaul in India) to Kathmandu, and then on to Mainland Chinese (Tibet) border via Kodari.

b) East-West road primarily in Tarai region totaling 518 km. When completed (1985) will traverse length of country (1,040 km). Important links on East-West road: Kathmandu to Pokhara, Kathmandu to Trisuli, Mechi to Pathalaya via Inarwa and Lahan, Butwal to approximately Narayanghat, and a ring road connecting Kathmandu to satellite towns Patan and Bhaktapur.

The National Highway Network and Estimated Growth
(Kilometers)

Year	Total Length	Department of Roads		Earth[1/]
		Bitumen	Gravel	
1974	3,900	1,456	150	2,294
1975	4,179	1,540	219	2,420
1976	4,199	1,568	160	2.471

1/ Many earth roads are only tracks.

Source: Department of Roads and Mission Estimates. June 1977.

9.2 Transport Agencies

All modern transportation regulated by Ministry of Public Works and Transport. Present emphasis upon building/improving feeder roads, maintaining existing ones.*

* Note: unintentional but ironic benefit of asphalt road construction; peasants discovered that asphalt burns, reducing need to gather firewood.

9.3 Vehicles

Registered Motor Vehicles (1964-1975)

Year	Jeeps and Cars	Trucks	Buses	Total
1973	8,768	4,109	919	13,796
1974	9,611	4,612	1,021	15,244
1975	9,684	4,651	1,223	15,558
Average Annual Growth Rates in %				
1970-75	7.8	8.6	17.4	8.7
1975-76	.8	1.8	19.8	2.1

1/ The number of vehicles registered in a given year is obtained by taking the total in the previous year and adding the new vehicles registered during the given year. No account is taken of scrapped vehicles.

Source: Department of Roads
June 1977

9.4 Road Projects

Second Highway Project funded by IBRD upgrading Thankot-Naubise road, a vital section of Kathmandu-India border road; former runs over a mountain range and is subject to frequent landslides, washouts. IBRD project also providing all weather access to Dang Valley in west by constructing 50 km feeder road connecting Tulsipur-Ghorahi-Lamahi; at present only accessible in dry season by two truckable tracks: Amile-Tulsipur (35 km), Lamahi-Ghorahi (25 km).

9.5 Traditional Modes

Ropeways, trails, porters and track animals traditional modes of transportation in Nepal. For years ropeways only means of freight transport (other than by porter) in Kathmandu Valley. One 42 km ropeway presently in use between Kathmandu and Hetauda (also Hetaura); design capacity of 22 tons per operation hr. Competitive only for bulk shipments; private sector prefers trucks. Traffic revenues declining since 1972.

An estimated 15,000-20,000 km of hill trails; many impassable in rainy season; otherwise connected by network of porter trail supension bridges. 640 m bridge on Kamala river on Mahendra highway now open; makes connections possible between Kathmandu and 4 zones of eastern Nepal.

9.6 Railroads

Three short, separate, narrow gauge railroad lines: Janakpur line (53 km), Nepal line (8 km), Kosi line (35 km). Janakpur line an extension of Indian railroad network from Jaynagar; caters mainly to shrines in Nepal. Nepal line also an extension of Indian railroad; runs from Raxaul to Birganj carrying mainly bulk cargoes. Total traffic 1975/76 only 5,000 tons p.a. Kosi line not in service.

9.7 Railroad Agencies

Janakpur and Nepal lines run by Nepal Transport Corporation, a GON entity. Both lines barely breaking even; GON considering purchase of more secondhand equipment, conversion of Nepal line to meter gauge to avoid cumbersome transshipment of goods at Raxaul, India.

9.8 Waterways

Limited use or practicality. Negligible movement of Tarai grain to India via small craft; occassional transport of logs from Hill region to Tarai. However, 2 private shipping companies established; so far, only one ship chartered for one journey.

9.9 Port

Port of Calcutta the "window" to Nepal; latter depends on port for all imports and exports (except to and from India).

Calcutta

Latitude 22'33° N, Longitude 88'20° E

Accomodation: Size of vessel able to enter the river Hooghly is controlled by available draft which fluctuates daily. A forecast of monthly drafts is published by the port authorities about two months ahead; owners advised to obtain prior information before arrival. Maximum draft is about 26 feet but this only occurs at odd times during the monsoon season, and then usually between July and September. Inward and outward drafts divided into four speed categories: over 12 knots, 10.5/12, 8.5/10 and under 8.5 respectively. Bore tides of varying severity occur throughout the year; equinoctial tides the most dangerous. Ships

frequently held at sandheads at the mouth of the river (128 miles from port) during these tides. Consequently, drafts of vessels lying in the river restricted to 18 ft. for vessels of 400 ft. and 500 ft., and 16 ft. for shorter vessels (both freshwater draft); vessels over 500 ft. usually not allowed to remain in the river during bore tides. Stream moorings for 42 ocean-going vessels. Two wet docks at Kindderpore, 33.8 and 50 acres respectively, with 10 acre turning basin and 30 ft. draft; lock entrance 580 by 80 ft. 25 berths at Kindderpore docks, including six coal berths; Netaji Subhes Dock has nine berths. King George Dock has two graving docks; lock entrance 700 by 90 ft. 5 import jetties on Calcutta side of river Hooghly and 4 jetties at Garden Reach; three of latter with double-story transit sheds with combined floor area of 445,000 sq.ft., and accomodation for about 44,500 tons of merchandise. Explosives discharged at Diamond Harbor, 40 mi. below port proper.

Working Hours: 1st shift: 0630 to 1030, 1130 to 1530. 2nd shift: 1530 to 1900, 1930 to 2230. 3rd shift: 2230 to 0200, 0230 to 0630.

Bunkers: Fuel, diesel and gas oil at eight berths at budge and budge. Length of berths: 250-710 ft.

Pilotage: Commences at eastern channel light vessel. Owing to the state of the bars in the upper reaches during neap tides, deeply-laden, inward vessels may be neaped at sandheads at any time of year. This takes place most frequently during December to May inclusive. Drafts vary from 16 to 20 ft. depending on season.

Airport: Dum Dum Airport 12 miles.

Local Holidays: (charter party holidays) Republic Day (January 26*), May Day (May 1), Independence Day (August 15*), Durga Puja (September 30),

Gandhi's Birthday (October 2*), Kali Puja (October 18), and Christmas Day (December 25). * On these holidays no work is undertaken. Work can be arranged on the remaining holidays and Sundays. Saturday is an ordinary working day.

9.10 Airports

Total of 53 airfields; 52 usable and only 5 with hard-surface runways. For up-to-date information consult latest issue of weekly International Notams, International Flight Information Manual, and/or ICAO's Air Navigation Plan for appropriate region.

Location Coordinates	Elevation M/ Temp C	Runway Characteristics NR/Type	Slope %	Aircraft Length M	CL	Aircraft Strength (1000 kg)	Fuel Octane
Biratnagar 26°29'N 87°16'E	72 28	09/27	0	1524		LCN 28	JX

Remarks: Alternate Aerodromes: Dacca/Dacca, Dacca/Kurmitola, Kathmandu/ Intl, Patna/Patna.

Aids: L, D, C, T, TX, O, F, R, TX. O planned for 1977.

Kathmandu/Intl 27°42' 02"N 85°21' 47"E	1337 26	20/20	0.51	2012		LCN55h68	100, JX

Remarks: Alternate Aerodromes: Biratnagar/Biratnagar, Calcutta/ Calcutta, Dacca/Dacca, Dacca/Kurmitola, Delhi/Delhi, Lucknow/ Lucknow, Patna/Patna.

Aids: DME, VOR, VA(02+), R, L9, B, D, C, T, FD, TX, O. Stopway 02-610. No telex.

Key

Radio Aids

ILS - Instrument Landing System
DME - Distance Measuring Equipment
VOR - VHF Omni-Directional Range

Lighting Aids

PA - Precision Approach Lighting System
SA - Simple Approach Lighting System
VA - Visual Approach Slope Indicator System
AV - Abbreviated Approach Slope Indicator System
R - Runway Edge, Threshold & Runway End Lighting
C - Runway Center Line Lighting
TD - Runway Touchdown Zone Lighting
TX - Taxiway Lighting
B - Aerodrome or Identification Beacon
O - Obstruction Lighting

Marking Aids

D - Runway Designation Markings
C - Runway Center Line Markings
T - Runway Threshold Markings
TD - Runway Touchdown Markings
S - Runway Sidestripe Markings
FD - Fixed Distance Markings
TX - Taxiway Center Line & Holding Position Markings
O - Obstruction Markings

Additional Lighting Aids

1. Portable Runway Lights (Electrical)
2. Boundary Lights
3. Runway Flood Lights
4. Low Intensity Runway Lights
5. Low Intensity Approach Lights
5. High Intensity Runway Lights
7. High Intensity Approach Lights
8. Sequenced Flashing Lights
9. Visual Approach Slope Indicator (VASI)
   (an asterisk (*) preceeding the element (*L4) indicates lighting available on prior request by phone, telegram, etc.)

9.11 Personal Entry Requirements

Passport: required

Visa: required

Vaccination: smallpox. Yellow fever for arivals from infected areas. Cholera and typhoid recommended by US Public Health Service.

9.12 Aircraft Entry Requirements

All private and non-scheduled commercial aircraft overflying or landing for commercial or non-commercial purposes must obtain prior permission from the Director, Department of Civil Aviation, Ministry of Public Works and Transport, Babar Mahal, Kathmandu (telegraphic address: AIRCIVIL KATHMANDU/Telex: None) at least 72 hours prior to departure. All requests must include:

(a) name of operator
(b) type of aircraft and registration marks
(c) radio frequencies
(d) name and nationality of pilot and crew plus passengers
(e) reasons for wishing to enter Nepal
(f) time and date of entry and departure
(g) fuel required
(h) weight of aircraft and tire pressure
(i) airports to be used

9.13 Airlines

Nepalese

Royal Nepal Airlines Corporation links Kathmandu with interior towns and with important cities in India, Pakistan, Sri Lanka and Thailand. Fleet: 1 Boeing 727, 2 Avro HS-748, 4 DC-3, 5 Twin Otters, 2 Pilatus Porters, 2 Jet Rangers.

Foreign

Nepal served by the following foreign airlines: Air France, Air India, British Airways, Burma Airways, Indian Airlines Corporation, KLM, Lufthansa, Pakistan International Airways, Pan American Airways, SAS, Thai International, TWA.

9.14 Air Distances*

Kathmandu to:

Bombay (via New Delhi)	1,214
Calcutta	400
Chittagong (via Dacca)	554
Dacca	415
Karachi (via New Delhi)	1,171
Miami (via New Delhi, Teheran, Rome, Madrid)	9,462
New Delhi	506
New York (via New Delhi, Teheran, Rome)	8,489
Patna, India	148
Rangoon (via Dacca, Chittagong)	1,020
Rome (via New Delhi, Cairo)	4,573
Rourkela, India (via Calcutta, Aurangabod)	641

* Statute Miles

10. Power and Communications

10.1 Electric Power

Vast hydro-electric potential but exploitation barely begun. Installed capacity in 1977, 33.4 MW, not including 21 MW of diesel generation; per capita consumption one of lowest in world. 85% of total energy consumption in form of fuelwood (95% in rural areas) leading to imminent shortage of accessible forest reserves.

In short run, electric production/consumption focus will remain in Central region; faces power shortages until 1981, when Kulekhani scheme (60 MW) begins operations; Gandaki project (14 MW) scheduled to begin 1978/79 only temporary relief. Devighat (15 MW), Kanaki (48 MW), and Kulekhani II (30 MW) projects needed by mid-1980's to avert major shortages. Huge Karnali project (3,600 MW) still faces crucial technical/organizational problems before construction can begin; estimated cost of $1.5 billion.

10.2 Radio

In the face of high illiteracy rate, radio appears to be most effective form of mass communication. GON controlled Radio Nepal broadcasts in Nepali and English, but number/availability/distribution of radios unknown; official estimates (80,000 in 1977) probably low because radios subject to annual tax. 1967-68 sample survey in Tarai showed 63% of villages in Kailali district had radios; 79% in Mahottari-Dhanusha district, 80% in Bara district, and 90% in Jhapa district also had radios. Survey also revealed most villages listened to All India Radio via regional stations at Patna, Lucknow, and Calcutta. Popularity of latter station due in part to GON termination of its 10-minute news broadcasts in Hindi and Newari.

10.3 Telephone System

Local exchange facilities (4 automatic, 9 manual) and long distance service available in Kathmandu, Pokhara, Patan, Biratnagar,

Birgunj and eight other smaller towns; 11,000 total phones as of Oct. 1977. Quality of local/long distance calls reasonably satisfactory. However, international telephone/telex/telegraph quality poor; only 53% of international calls booked in first 5 months of 1977 were completed. Also, Kathmandu telex links to India, Pakistan, Bangladesh, Hong Kong and Japan; operating since Sept. 1971.

Nepal
Nepal Telecommunications Corporation

Basic Data as at October 1977

I. Local Telephone	Capacity	Subscribers' Connections	Waiting List
Kathmandu	5,000 A	4,564	5,000
Patan	1,000 A	913	1,000
Birgunj	1,000 A	695	375
Pokhara	300 M	294	400
Bhairawa	200 M	180	225
Nepalgunj	200 M	180	200
Hetauda	200 M	194	225
Melangwa	50 M	49	50
Janakpur	200 M	198	250
Rajbiraj	100 M	95	150
Dharan	400 M	374	250
Biratnagar	2,000 A	955	400
Bhadrapur	100 M	98	400
Simra	10 M x	10	-
Kalaiya	10 M x	2	60

Installed Capacity

Total	10,770
Automatic	9,000
Manual	1,770
Exchange Fill	82%
Percentage Automatic	84%
Subscribers' Connections	8,801
Waiting List for above Exchanges	8,985

Total Demand for above Exchanges	17,786
Unfilled as % of Total Demand	51%

II. Long Distance Telephone (Circuits)

A. Land Line	System Installed Capacity	Used for Service
1. Kathmandu - Birgunj	7	7
2. Kathmandu - Hetauda	3	2
B. Microwave		
1. Kathmandu - Pokhara	11	3
2. Kathmandu - Birgunj	23	3
3. Kathmandu - Janakpur	11	1
4. Janakpur - Malangwa	3	1
5. Biratnagar - Rajbiraj	6	2
6. Kathmandu - Biratnagar	23	9
7. Biratnagar - Dharan	24	3
8. Biratnagar - Bhadrapur	12	2

x - These are concentrators and do not provide full exchange service.

	System Installed Capacity	Used for Service
C. H. F. Using Lincompex		
1. Kathmandu - Bhairawa	1	1
2. Kathmandu - Nepalgunj	1	1
III. Telegraph and Telex		
A. H. F. Radio Stations	78	78
	Capacity	In Service
B. Public Teleprinter		
1. Kathmandu - Pokhara	6	2
2. Kathmandu - Birgunj	6	2
3. Kathmandu - Janakpur	6	-

4. Kathmandu - Biratnagar	6	2
5. Kathmandu - Bhairawa	1	-
6. Kathmandu - Nepalgunj	1	-
7. Biratnagar - Dharan	1	-
8. Biratnagar - Rajbiraj	1	-
9. Biratnagar - Bhadrapur	1	-

C. Telex Exchange

Line Concentrator	60	34

IV. International Telephone Circuits	No. of Circuits	Operation Hrs.
A. H. F. Radio		
1. Kathmandu - Hong Kong	1	0700-1000 and 1200-1600 (7 hrs.)
2. Kathmandu - Tokyo	1	1000-1600 (6 hrs.)
3. Kathmandu - Rawalpindi	1	1000-1300 (3 hrs.)
4. Kathmandu - Dacca	1	1400-1500 (1 hrs.)
5. Kathmandu - Calcutta	1	1000-1700 (7 hrs.)
B. Land Line		
1. Kathmandu - Patna	2	
2. Kathmandu - Bombay	2	

International Telephone Circuits	No. of Circuits	Operation Hrs.
B. Land Line (con't)		
3. Kathmandu - Delhi	2	
4. Kathmandu - Calcutta	2	

Telegraph Circuits

A. H. F. Radio		
1. Kathmandu - Tokyo	1	0740-1840
2. Kathmandu - Bombay	1	0800-2200
3. Kathmandu - Rawalpindi	1	1000-1300
4. kahtmandu - Dacca	1	1400-1500

B. Land Line

Kathmandu - Delhi	2	

Telex Circuits

A. H. F. Radio

1. Kathmandu - Hong Kong	3	24 hours
2. Kathmandu - Bombay	1	24 hours

V. Leased Circuits

A. Voice Channel

1. Kathmandu - Pokhara	1	24 hours

B. Teleprinters

1. Kathmandu - Birgunj (SITA)	1	24 hours
2. Kathmandu - Pokhara (SITA)	1	24 hours
3. Kathmandu - Biratnagar (RSS)	1	24 hours
4. Kathmandu - Hong Kong	1	088-2000

10.4 Television

No television in Nepal.

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