

PIN-AAK-491

Nicaragua

A Country Profile



January 1977

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

BIBLIOGRAPHIC DATA SHEET

1. CONTROL NUMBER

2. SUBJECT CLASSIFICATION (695)

PN-AAK-491

DA00-0000-6360

3. TITLE AND SUBTITLE (240)

Nicaragua: a country profile

4. PERSONAL AUTHORS (100)

5. CORPORATE AUTHORS (101)

Evaluation Technologies, Inc.

6. DOCUMENT DATE (110)

1977

7. NUMBER OF PAGES (120)

90 p.

8. ARC NUMBER (170)

9. REFERENCE ORGANIZATION (130)

ETI

10. SUPPLEMENTARY NOTES (500)

(Prepared for AID's Office of Foreign Disaster Assistance)
(Latest edition, 1981: PN-AAK-318)

11. ABSTRACT (950)

communication
transportation
economic conditions

12. DESCRIPTORS (320)

Nicaragua
profiles
disasters
government
population

health
housing
nutrition
geography
agriculture
surveys
statistics

13. PROJECT NUMBER (150)

14. CONTRACT NO. (140)

AID/OT-C-1553

15. CONTRACT TYPE (140)

16. TYPE OF DOCUMENT (160)

Nicaragua



502479 1-76 (541408)
 Lambert Conformal Projection
 Standard parallels 9°20' and 14°10'
 Scale 1:3,200,000
 Boundary representation is
 not necessarily authoritative

- Railroad
- Road
- ✈ Airport

NICARAGUA: 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-otr-C-1553

The profile on Nicaragua is one in a series designed to provide base-line 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.

August 1979

ÔFDÁ COUNTRY PROFILES: APRIL 1979

AFRICA

Angola**
Cape Verde
Chad
Djibouti
Ethiopia
Madagascar
Mali
Mauritania
Niger*
Sahel Transportation Survey
Senegal
Somalia
Upper Volta
Zaire

ASIA

Afghanistan
Bangladesh
Burma
India
Indonesia
Malaysia
Nepal
Pakistan
Philippines

CARIBBEAN

CARICOM Regional Profile
Dominican Republic
Haiti

LATIN AMERICA

Bolivia
Brazil
Chile
Ecuador
Guatemala
Honduras
Nicaragua
Peru

NEAR EAST

Lebanon**
Turkey

SOUTH PACIFIC

Fiji
Tonga
Western Samoa

* in preparation
** out of print

**MISSING PAGE
NO. _____**

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GEOGRAPHIC CODES

AID STANDARD	524
STATE REGION	ARA
FIPS	NU

COUNTRY NAMES

OFFICIAL	REPUBLIC OF NICARAGUA
LOCAL	REPUBLICA DE NICARAGUA
SHORT	NICARAGUA

ETHNIC AND SOCIOCULTURAL GROUPS

70% MESTIZO (EUROPEAN AND INDIAN ANCESTRY), 17% WHITE, 9% BLACK, 4% INDIAN. SOCIOCULTURAL DISTINCTIONS MORE SIGNIFICANT THAN GENETIC ONES: LADINOS, TOTALLY HISPANICIZED MESTIZOS AND WHITES, PREDOMINATE; INDIAN POPULATION, SPANISH SPEAKING IN WEST, MISKITO OR ENGLISH SPEAKING IN EAST, MAY BE ASSIMILATED INTO LADINO MAJORITY; BLACK AND MIXED BLACK-INDIAN POPULATIONS ON ATLANTIC COAST, SEPARATED FROM MAJORITY BY ENGLISH LANGUAGE AND CARIBBEAN CULTURAL TRADITIONS, INTERACT LITTLE WITH LADINOS.

LANGUAGES

SPANISH IS THE OFFICIAL LANGUAGE. ENGLISH AND MISKITO INDIAN LANGUAGES, THOUGH SPOKEN BY LESS THAN 10% OF POPULATION, PREVAIL ON EAST COAST, WHERE KNOWLEDGE OF SPANISH IS OFTEN RUDIMENTARY.

EDUCATION

FREE AND COMPULSORY FOR CHILDREN BETWEEN THE AGES OF 6-13. PRIMARY SCHOOL ENROLLMENT: 65%; ADULT LITERACY RATE: 57%.

RELIGIONS

ROMAN CATHOLIC (95%); ALL RELIGIONS ARE TOLERATED.

OFFICIAL HOLIDAYS

1978

LABOR DAY.....MAY 1
ARMY DAY.....MAY 27
ABROGATION OF THE CHAMORRO-
BRYAN TREATY.....JULY 14
MANAGUA LOCAL HOLIDAY.....AUGUST 10
BATTLE OF SAN JACINTO.....SEPTEMBER 14
INDEPENDENCE DAY.....SEPTEMBER 15
COLUMBUS DAY.....OCTOBER 12
ALL SAINTS' DAY.....NOVEMBER 1
IMMACULATE CONCEPTION.....DECEMBER 8
CHRISTMAS.....DECEMBER 24-25

1979

NEW YEAR'S DAY.....JANUARY 1
AIR FORCE DAY.....FEBRUARY 1
HOLY WEEK.....APRIL 8-16

SEVERAL LOCAL HOLIDAYS ARE ALSO OBSERVED.

CURRENCY EXCHANGE RATES

100 CENTAVOS = 1 CORDOBA
10.0 CORDOBAS = US \$ 1 (JUNE 1979)

HOST MISSIONS AND STAFF IN US

EMBASSY:

1627 NEW HAMPSHIRE AVE, N.W.
WASHINGTON, D.C. 20009

TEL: 387-4371, 4372

STAFF:

AMBASSADOR.....DR. GUILLERMO SEVILLA-SACASA
MINISTER COUNSELOR...RAUL CHAVEZ S.
COUNSELOR.....JUAN RAFAEL ASENSIO H.
FIRST SECRETARY.....DR. DOMINGO A. SALINAS-ALVARADO
DEFENSE AND ARMED
FORCES ATTACHE.....COL. ENRIQUE BERMUDEZ

US MISSIONS TO NICARAGUA AND STAFF

EMBASSY:

KM 4-1/2 SOUTH HWY
MANAGUA
APO NY 09885
TEL: 23061-8, 23881-7

STAFF:

AMB.....LAWRENCE PEZZULLO
DCM.....FRANK M. TUCKER, JR.
ECO/COM.....JOHN H. CURRY
COM.....(VACANCY)
POL.....JOHN L. MARTIN
CON.....MARY M. DANIEL
ADM.....EDWARD T. PAUKERT
RSO.....FRANK JUNI
AGR.....JAMES W. BROCK
(RESIDENT IN SAN SALVADOR)
AID.....HARRY G. WILKINSON
PAO.....JAMES M. FITZGERALD

TREATIES AND AGREEMENTS

WITH US:

AGRICULTURAL AGREEMENTS (PLANTATION RUBBER INVESTIGATIONS,
PREVENTION OF HOOF-AND-MOUTH DISEASE AND RINDERPEST)
AIRCRAFT, FREE MOVEMENT OF MILITARY
AIR FORCE AND ARMY, US MISSIONS IN NICARAGUA, AGREEMENTS
CANAL RIGHTS, TERMINATION OF US CANAL ROUTE RIGHTS IN NICARAGUA
CUSTOMS, EXEMPTION OF DIPLOMATIC AND CONSULAR OFFICIALS

EARTHQUAKE EMERGENCY SHELTER AGREEMENT
ECONOMIC AND TECHNICAL COOPERATION AGREEMENT
EXTRADITION
HIGHWAY CONSTRUCTION
INVESTMENT GUARANTIES
MILITARY ASSISTANCE-DISPOSITION OF EQUIPMENT, ESTABLISHMENT
OF LORAN TRANSMITTING STATION, PERFORMANCE OF ADVISORY
GROUP
NATURALIZATION CONVENTION
PEACE CORPS
TELECOMMUNICATIONS
TRADE AND COMMERCE
VISAS

ORGANIZATION MEMBERSHIP

CACM, FAO, G-77, GATT, IADB, IBRD, ICAC, ICAO, ICO, IDA, IDB,
IFC, ILO, IMF, INTELSAT, IPU, ISO, ITU, NAMUCAR (CARIBBEAN MULTI-
NATIONAL SHIPPING LINE - NAVIERA NACIONAL DEL CARIBE), OAS, ODECA,
SELA, UN, UNESCO, UPEB, UPU, WHO, WMO, WTO.

TRAVEL AND VISA INFORMATION

TOURIST CARD, VALID UP TO 8 WEEKS, NO CHARGE, ISSUED ONLY BY
AIRLINES SERVICING NICARAGUA, TO CITIZENS BORN IN THE US OR PUERTO
RICO; NOT VALID FOR TRAVEL BY LAND/SEA; PROOF OF CITIZENSHIP REQUIRED.
PASSPORT AND VISA, 2 PHOTOS, REQUIRED FOR TRAVEL BY LAND/SEA FOR
VISITS OVER 8 WEEKS, & FOR NATURALIZED CITIZEN.

SMALLPOX CERTIFICATES ARE REQUIRED. A YELLOW FEVER CERTIFICATE
IS RECOMMENDED BY THE US HEALTH SERVICE.

TIME ZONES

EST - 1; GMT + 4

NATIONAL GOVERNMENT

AS OF JULY 1979, A NEW "REVOLUTIONARY" GOVERNMENT INSTALLED AFTER OUSTER OF SOMOZA REGIME BY SANDINISTA GUERRILLAS. TOP SANDINISTA LEADERS APPOINTED 5 MEMBER JUNTA (CIVILIAN AND MILITARY) TO RESTORE CIVIL ORDER AND ESTABLISH A TRANSITIONAL GOVERNMENT. A 33 MEMBER LEGISLATURE, OR COUNCIL OF STATE, REPRESENTATIVE OF THE VARIOUS SECTIONS OF SOCIETY (BUSINESS, MILITARY, POLITICAL ETC.), IS TO BE APPOINTED BY THE JUNTA. A PROVISIONAL BILL OF RIGHTS, PROVIDING BASIC RIGHTS AND PROMISING MAJOR SOCIAL PROGRAMS WILL SERVE AS CONSTITUTION UNTIL IT IS REVIEWED BY COUNCIL OF STATE. COUNCIL WILL REMAIN LEGISLATIVE BODY UNTIL ELECTIONS ARE HELD, PROJECTED FOR 2-4 YEARS HENCE.

1979 STATUS

LOCAL GOVERNMENTS ARE IN STATE OF DISARRAY; REORGANIZATION IN PROGRESS. SANDINISTA DEFENSE COMMITTEES (SDC) AT CITY OR NEIGHBORHOOD LEVEL ARE BEING FORMED TO ORGANIZE LOCAL ACTIVITIES. MEMBERS ELECT COORDINATORS FOR EACH SPHERE OF ACTIVITY (POLITICAL, ECONOMIC, SOCIAL) AND ALSO A SECRETARY AND REPRESENTATIVE OR HEAD OF THE COMMITTEE.

THESE COMMITTEES ARE CURRENTLY ENGAGED IN TAKING A CENSUS TO IDENTIFY PEOPLE IN NEED OF EMERGENCY RELIEF; RESULTS OF THE CENSUS WILL BE REGISTERED AT THE NATIONAL SDC HEADQUARTERS. THE MINISTRY OF SOCIAL WELFARE IS IN CHARGE OF PROVIDING SOCIAL AND MATERIAL ASSISTANCE TO THE COMMITTEES.

CHECK WITH EMBASSY/CONSULATE FOR CURRENT STATUS OF LOCAL AND/OR NATIONAL GOVERNMENT ORGANIZATION.

REGIONAL ORGANIZATION

COUNTRY DIVIDED INTO 16 DEPARTMENTS AND 1 DISTRICT; EACH IS HEADED BY POLITICAL APPOINTEE OF PRESIDENT. DEPARTMENTS SUB-DIVIDED INTO 123 MUNICIPALITIES, UNDER MAYORS.

KEY LEADERS
(AS OF AUGUST 1979)

MEMBER, PROVISIONAL JUNTA.....DE CHAMORRO, VIOLETA BARRIOS
MEMBER, PROVISIONAL JUNTA.....HASSAN MORALES, MOISES
MEMBER, PROVISIONAL JUNTA.....ORTEGA SAAVEDRA, (JOSE)
DANIEL
MEMBER, PROVISIONAL JUNTA.....RAMIREZ MERCADO, SERGIO
MEMBER, PROVISIONAL JUNTA.....ROBELO CALLEJAS, ALFONSO
MIN. OF AGRARIAN REFORM.....WHEELOCK ROMAN, JAIME
MIN. OF CULTURE & SPORTS.....CARDENAL MARINTEZ, ERNESTO,
FATHER
MIN. OF DEFENSE.....LARIOS MONTIEL, BERNARDINO
MIN. OF EDUCATION.....TUNNERMAN BERNHEIM, CARLOS
MIN. OF FINANCE.....CUADRA CHAMORRO, JOAQUIN
MIN. OF FOREIGN AFFAIRS.....D'ESCOTO BROCKMAN, MIGUEL,
FATHER
MIN. OF HEALTH.....AMADOR KUHL, CESAR, DR.
MIN. OF INDUSTRY & COMMERCE.....RIVAS GASTEAZORO, NOEL
MIN. OF INTERIOR.....BORGE MARTINEZ, TOMAS
MIN. OF LABOR.....GJDOY REYES, VIRGILIO
MIN. OF PLANNING.....MAYORGA CORTES, ROBERTO
MIN. OF SOCIAL WELFARE.....DE LOPEZ, LEA GUIDO
PRES., CENTRAL BANK.....CRUZ, ARTURO JOSE
PRES., NATL. DEVELOPMENT BANK.....ARGUELLO RAMIREZ, LEONEL

HOST DISASTER PLAN

HOST DISASTER PLAN OUTLINED BELOW WAS IN FORCE UNDER THE SOMOZA REGIME. FOR UP-TO-DATE INFORMATION ON THE STATUS OF DISASTER PREPAREDNESS CHECK WITH NICARAGUAN DESK/MISSION.

LIMITED CAPACITY TO RESPOND TO DISASTER HAS IMPROVED SINCE 1972 EARTHQUAKE. NATIONAL GUARD (GN), 6,000 MEMBER POLICE AND MILITARY ARM, HAS DEVELOPED CIVIL DEFENSE PLAN FOR USE IN EMERGENCIES, BUT ENABLING LEGISLATION NOT YET PASSED. NATIONAL EMERGENCY COMMITTEE, ORGANIZED BY JUNTA NACIONAL DEL GOBIERNO AFTER 1972 EARTHQUAKE, COMPRISES ALL MINISTERS, CHIEFS OF GOVERNMENT AGENCIES, DIRECTORS OF SEMI-AUTONOMOUS ORGANIZATIONS; PRESIDED OVER BY PRESIDENT. EXISTS ON PERMANENT STANDBY BASIS.

NATIONAL SOCIAL ASSISTANCE AND PREVENTION GROUP (JNAPS) AND LOCAL AFFILIATES (JLAPS) ARE RESPONSIBLE FOR PUBLIC HOSPITAL SYSTEMS.

NICARAGUA RED CROSS CLOSELY TIED TO AMERICAN AND INTERNATIONAL RED CROSS; CADRE OF PERMANENT VOLUNTEERS EXPERIENCED IN DISASTER RELIEF.

CENTRAL AMERICAN GRADUATE SCHOOL OF BUSINESS ADMINISTRATION (INCAE) HAS POST-DISASTER ECONOMIC RESEARCH AND SURVEY CAPABILITY.

US PLAN

CHIEF OF MISSION (CM) INITIATES, COORDINATES US ASSISTANCE, DETERMINES WHETHER NEED FOR US AID EXISTS AND IF ACCEPTABLE TO GON.

MDRO, APPOINTED BY AND RESPONSIBLE TO CM, DEVELOPED DISASTER PLAN; RESPONSIBLE FOR ITS REVISION AND IMPLEMENTATION.

CM WITH STAFF AID ANALYZES DISASTER INFORMATION, ALERTS STATE/AID WASHINGTON (COPY TO CINCSOUTH), OFFERS GON SURVEY AND ASSESSMENT ASSISTANCE; REQUESTS US SOUTHCOM-DAST ASSISTANCE (REIMBURSABLE COST BASIS ONLY) IF NEEDED. ESTABLISHES COMMUNICATIONS WITH GON AND VOLAGS.

SPECIAL MISSION DISASTER RELIEF COMMITTEE (SELECTED BY CM AND MDRO) INCLUDES:

EMBASSY - ECONOMIC OFFICER, DEFENSE ATTACHE AND POLITICAL OFFICER.

USAID - ASSISTANT DIRECTOR/MDRO INFORMS AID/W; DIRECTS RELIEF OPERATIONS.
FFP OFFICER HANDLES VOLAG CONTACTS AND FFP COMMODITIES.
CONTROLLER MONITORS US EXPENDITURES.
CHIEF ENGINEER AND PUBLIC HEALTH OFFICER SURVEY EFFECT OF DISASTER ON HEALTH, WATER, SANITATION, SHELTER, INFRASTRUCTURE.

USIS - PUBLIC AFFAIRS OFFICER HANDLES NEWS COVERAGE.

JAS - ADMINISTRATIVE OFFICER PROVIDES FACILITIES, TRANSPORTATION, CLERICAL SUPPORT, SECURITY GUARDS, LOCALLY AVAILABLE COMMODITIES.

USMILGP - COMMANDER ARRANGES FOR SEA AND/OR AIRCRAFT AS REQUIRED.

PEACE CORPS - DIRECTOR TRANSFERS VOLUNTEERS FROM NORMAL ASSIGNMENTS IN OR OUT OF COUNTRY.
OPERATIONS OFFICER OVERSEES TRANSPORTATION AND MAINTENANCE OF VOLUNTEERS.

COMMAND POST

EMBASSY/AID-LOCATED OPERATIONS CENTER HEADED BY MDRO, DIVIDED INTO SECTIONS, UNDER CHIEFS, AS FOLLOWS: LOGISTICS AND SUPPLIES, COMMUNICATIONS, RECORDS AND LIAISON.

FOR DETAILS SEE NICARAGUA MISSION DISASTER PLAN ON FILE AT OFDA.

SURVEY TEAMS

SEE US ASSESSMENT

CONTACT LIST*

NO CONTACT LIST AVAILABLE AT PRESENT. FOLLOWING LIST INDICATES CONTACTS OF SOME US AGENCIES:

MISSION PERSONNEL HAVE EXTENSIVE AND DAILY CONTACT WITH KEY MINISTRIES INVOLVED IN DISASTER OPERATIONS: HEALTH/JNAPS; PUBLIC WORKS/NATIONAL DISTRICT; AGRICULTURE; AGUADORA; ENALUF; MINISTRY FINANCE; AND CONTINUING LIAISON WITH ALI. VOLAGS AND INTERNATIONAL AGENCIES.

THE USMILGP HAS EXTENSIVE CONTACT WITH THE NICARAGUAN NATIONAL ARMY (GN) BUT VERY LIMITED CONTACT WITH LOCAL INTERNATIONAL AGENCIES SUCH AS THE RED CROSS. HOWEVER, IN THE EVENT OF AN EMERGENCY, CONTACT COULD BE MADE WITH SUCH REPRESENTATIVES FOR COORDINATION OF PLANS AND OPERATIONS.

PC/N:

OLIVIA MIRANDA	MSP, MOE, JNAPS, PRODESAR, CEPA, SEDOC, MAG,
FRANKLIN SALVESON	MAG, BNN, INCEI
ALEXANDER GRAY	BNN, MOE, VMUP, INFONAC, CATASTRO, UCA, INDE, FUNDE
PETER SZYDLOWSKI	IAN, CONODER, CARE, MCE

US CONTACTS

US EMBASSY:

LAWRENCE PEZZULLO
AMBASSADOR
RESIDENCE: KM 5-1/2 CARRETERA SUR, LAS PEIDRECITAS
[REDACTED]

IRWIN RUBENSTEIN
COUNSELOR OF EMBASSY
RESIDENCE: KM 5-1/2 CARRETERA SUR, LAS PEIDRECITAS
[REDACTED]

LT. COL. JAMES L. MCCOY, U.S. ARMY
DEFENSE AND ARMY ATTACHE
RESIDENCE: REPARTO LAS COLINAS
HOME PHONE: NO PHONE

JOHN CURRY
CHIEF, ECONOMIC AND COMMERCIAL AFFAIRS
RESIDENCE: KM 13-1/2 CARRETERA SUR, COLONIA WHEELLOCK

EDWARD T. PAUKERT
CHIEF, ADMINISTRATIVE AFFAIRS
RESIDENCE: KM 13 CARRETERA SUR, COLONIA BECKLIN #5

JOHN L. MARTIN
CHIEF, POLITICAL AFFAIRS
RESIDENCE: REPARTO LOS ROBLES
[REDACTED]

MARY M. DANIEL
CHIEF, CONSULAR AFFAIRS
RESIDENCE: KM 14-1/2 CARRETERA VIEJA A LEON
[REDACTED]

USIS:

JAMES M. FITZGERALD
CHIEF, INFORMATION AND CULTURAL AFFAIRS
RESIDENCE: AVENIDA LAS COLINAS, LAS COLINAS
[REDACTED]

USAID:

HARRY G. WILKINSON
DIRECTOR, USAID
RESIDENCE: CALLE VISTA ALEGRE #217, LAS COLINAS

USMILGP:

FRANCIS W. MATTHEWS; U.S. ARMY
CHIEF, USMILGP
RESIDENCE: KM 14 CARRETERA SUR
[REDACTED]

US PEACE CORPS:

ARMANDO GONZALES
DIRECTOR, PEACE CORPS
RESIDENCE: DEL ARZOBISPADO DE SANTO DOMINGO, 50 YDS. ABAJO A
LA IZQUIERDA, VILLA SAN FRANCISQUITO
[REDACTED]

*NOTE: DUE TO PERSONNEL CHANGES AND CURRENT STATE OF FLUX, IT IS
ADVISABLE TO CHECK WITH NICARAGUAN DESK OR US MISSION FOR UP-
TO-DATE INFORMATION.

FUNDING

AMBASSADOR'S CONTINGENCY FUND, AID/WASHINGTON APPROVED FAA
CONTINGENCY FUND, TITLE II FOOD FOR PEACE.

US ASSESSMENT

DUTIES: PREPARE GRID MAP OF DISASTER ZONE; REQUEST INFOR-
MATION FROM GON'S CDC LIAISON OFFICER ON CONDITIONS IN EACH
GRID; DETERMINE BEST METHODS FOR REACHING DISASTER ZONE.

SURVEY PERSONNEL MUST NOT BECOME INVOLVED IN RELIEF ACTION.

TEAM TYPES: GENERAL - AMDRO, ENG; MASS FEEDING - FFP, ENG;

CIVIL STRIFE: HUD, ENG; AGRICULTURAL DISASTER - AGR, ENG,
AMDRO. SKILLED PERSONNEL - FFP, ENGR, HOUSING, RD, CAP, HEALTH.

HOST RESOURCES

ESSO OWNS, OPERATES 20,000 BBLs./DAY REFINERY IN MANAGUA: GASO-
LINE, DIESEL, JET FUEL, KEROSENE, LP GAS. REFINERY SUPPLIED BY PIPE-
LINE FROM PUERTO SOMAYA ON PACIFIC COAST. TANK TRUCKS, SERVICE STA-
TIONS CONCENTRATED IN CENTRAL, WESTERN NICARAGUA. BOTTLED LP (COOKING
GAS) AVAILABLE FROM ESSO AND FROM TROPIGAS LABELS.

PEACE CORPS: APPROX. 100 VOLUNTEERS; 60 IN AGRICULTURE AND HEALTH, 40 IN EDUCATION, SOCIAL SERVICES.

CARE: GLENN PORTER, DIRECTOR, APARTADO 3084, MANAUGA. TEL: 80386. MAINTAINS A 7-VEHICLE FLEET: ONE SEDAN, 2 GMC AND 4 TOYOTA 4 WD VEHICLES.

CEPAD: DR. GUSTAVO A. PARAYON D., PRESIDENT. APARTADO 3091, MANAGUA. TEL: 24330. STAFF OF 50 EMPLOYEES (40 IN MANAGUA); GON GRANTED THEM CITY-FREE PRIVILEGES FOR FOOD, OTHER AID MATERIAL. RELIEF CAPABILITIES ALL OVER NICARAGUA.

RED CROSS: SR. DON ISMAEL REYES, PRESIDENT NRC, APARTADO 3279, MANAGUA. TEL: 5307. DURING 1972 QUAKE, NRC ESPECIALLY EFFECTIVE WITH AMBULANCE SERVICE, FIRST AID, VICTIM CENSUS, REFUGEE CAMPS, AND BLOOD TRANSFUSIONS. WITH 300 EMPLOYEES, A KEY VOLAG IN NICARAGUA; OWN DISASTER PLAN AND BRIGADE-ZONE ORGANIZATION.

UNDP: MR. ROBERTO MAC EACHEN, RESIDENT REPRESENTATIVE, APARTADO 3260, MANAGUA. TEL: 22558. 22 FOREIGN TECHNICIANS, 9 LOCAL STAFF, OTHER SPECIALISTS AT UNDP/PR OFFICE. RADIO COMMUNICATION WITH NUEVA SEGOVIA, CHINANDEGA, LEON. PASSENGER AND 4 WD VEHICLES.

US RESOURCES

MDRCT MEMBERS MAINTAIN INVENTORIES OF MATERIAL RESOURCES, THEIR LOCATIONS AND AVAILABILITY. MDRO REVIEWS AND UPDATES LIST ANNUALLY.

PEACE CORPS HAS TECHNICAL MANPOWER IN AREAS OF FOOD, WATER, ENGINEERING, AGRICULTURE, SANITATION, ELECTRIC POWER, BUILDING INSPECTION, ROAD AND BRIDGE INSPECTION. RADIO COMMUNICATIONS EXPERT IN WASPAM-PUERTO CABEZAS AREA.

7 TRUCKS (SCOUTS AND PICKUPS).

USMILGP CAN OBTAIN FOOD B&C RATIONS, WATER TREATMENT PLANTS, HEALTH SERVICES, SHELTER AND SURVIVAL SUPPLIES, ENGINEERING SERVICES THROUGH MILITARY CHANNELS FROM OUTSIDE COUNTRY. ALSO TWO 5KW GENERATORS AND ONE 1.5KW GENERATOR IN COUNTRY (USMILGP RADIO FACILITIES), OTHERS THROUGH CHANNELS. 4 COLLINS KWM 2-A AND ONE S-LINE (WORLD WIDE SSB). INTERNAL COMMUNICATIONS: MOTOROLA FM, 10 CONSOLETES, 6 MOBILE AND 3 HANDI-TALKIES. 4 HALF TON PICKUP TRUCKS, 3 CARRY-ALLS, 5 SEDANS,

ONE 14' OUTBOARD MOTOR BOAT-ALL AT HEADQUARTERS. ONE 500 GAL TANK OF GAS AT HEADQUARTERS WITH NO DISTRIBUTION CAPABILITY.

COMMUNICATIONS. DIRECTOR AND DEPUTY DIRECTOR TIED TO LOCAL COUNTRY TEAM NET. EXPANSION SLATED TO INCLUDE OTHER KEY DISASTER OFFICERS. HAM OPERATORS.

TRANSPORTATION. 13 SEDANS, 2 4-WHEEL DRIVE VEHICLES, 1 MEDIUM TRUCK-ALL IN JAS MOTOR POOL.

ALSO: ADMINISTRATION, CLERICAL SERVICES, BILINGUAL SUPPORT PERSONNEL.

USIS-COMMUNICATIONS. PAO HAS FOX 1 WALKIE TALKIE, RANGE 10KM. CALL SIGN ECHO 7.

TRANSPORTATION - 6 PASSENGER SEDANS, 6 PASSENGER CARRY-ALL TRUCKS
INFORMATION - 2 LOCAL WRITERS, RADIO MEN, 1 TELETYPE OPERATOR,
1 PHOTOGRAPHER, 2 LOCAL SECRETARIES, 5 BILINGUAL
PERSONNEL.

EMBASSY - COMMUNICATIONS UNIT

USAID - FOOD STOCKS INCLUDE PL480 DONATIONS PROVIDED ON ANNUAL BASIS THROUGH AGREEMENTS WITH GON AND CRS/CARITAS. ITEMS: CSB, WHEAT FLOUR, ROLLED OATS, VEGETABLE OIL. STOCK LEVELS VARY; ON HAND STOCKS CAN BE DIVERTED FOR EMERGENCY USE. CONUS AND AID/W STOCKS ARE OTHER POSSIBLE SOURCES.

MEDICINE. PUBLIC HEALTH DIVISION USAID AVAILABLE FOR SURVEY AND ASSESSMENT. NO SUPPLIES STOCKED; REQUESTED THROUGH AID/W.

SHELTER AND SURVIVAL SUPPLIES REQUESTED FROM PANAMA AND CONUS. ENGINEERING ALSO HANDLES SANITATION, SEWERAGE. 4 ENGINEERS WITH ASSESSMENT CAPABILITY.

ELECTRICAL ASSESSMENT; SMALL GENERATORS AVAILABLE THROUGH CHANNELS.

HOST STORAGE

GON VIA INCEI OPERATES 100-SILO REGIONAL GRAIN STORAGE FACILITIES. TOTAL CAPACITY: 12,200 TONS. TERMINAL FACILITIES IN CHINANDEGA, SAN ISIDRO, MANAGUA; TOTAL CAPACITY 52,500 TONS. ALL THE ABOVE HAVE SHELLING, DRYING, FUMIGATION CAPABILITIES. INCEI ALSO

CONTROLS PRICE OF GRAIN; IN EMERGENCY, COULD STABILIZE PRICES. COLD CHAIN STORAGE UNRELIABLE.

SEE HEALTH FACILITIES DATA.

VOLAGS

CRS/CARITAS:

WELL-ORGANIZED. FLEET OF 6 TRUCKS, SEVERAL SMALL CARS AND JEEPS; STORAGE FOR FOOD AND SUPPLIES; SUPERVISORY PERSONNEL IN CENTRAL AND WESTERN AREAS; CAPACITY TO DISTRIBUTE SUPPLIES AND ORGANIZE/EXECUTE FOOD DISTRIBUTION PROGRAMS.

CEPAD - MANAGING AND EXECUTING FEEDING PROGRAMS THROUGH COMMUNITY KITCHENS AND FOOD FOR WORK.

CARE - TECHNICAL ASSISTANCE, MEDICAL AND NURSING CARE, POTABLE WATER AND SEWAGE SYSTEMS; FOOD FOR WORK PROJECTS.

OTHER DONORS

OAS- TECHNICAL AND MATERIAL ASSISTANCE. LIMITED FUNDS AND STAFF AT OAS NICARAGUA OFFICE.

UN - EMERGENCY AND RECONSTRUCTION ASSISTANCE.

IRC - EMERGENCY ASSISTANCE.

WORLD BANK/INTERAMERICAN DEVELOPMENT BANK - MAJOR LOANS FOR RECONSTRUCTION.

BILATERAL DONORS - EMERGENCY AND RECONSTRUCTION ASSISTANCE. 31 COUNTRIES CONTRIBUTED AFTER 1972 EARTHQUAKE.

STORAGE

USAID WAREHOUSE HAS VERY LIMITED SPACE. MANAGEMENT CAPABILITY IN CONT, FFP AND CONTRACTING AND SUPPLY.

CRS/CARITAS - STORAGE FOR FOOD AND SUPPLIES.

EARLY WARNING

FOR EARTHQUAKES: 14 RADIO-RELAYED SEISMIC STATIONS IN WEST SINCE 1975. STRONG MOTION ACCELEROGRAPHS AND 25 SEISMOSCOPES IN W.

DISASTER TYPES

EARTHQUAKE
EPIDEMIC
HURRICANE
FLOOD
DROUGHT
VOLCANIC ERUPTION

2.3 MILLION (90% OF POP.) LIVE IN PACIFIC AREA; GEOLOGICALLY UNSTABLE. QUAKE OF 12/72 DESTROYED CENTER OF MANAGUA. 22 VOLCANIC CENTERS ON PACIFIC SLOPE. FLASH FLOODS RARE BUT HAVE OCCURRED IN CHINANDEGA, LEON, MASAYA, GRANADA, RIVAS; ATLANTIC COAST VULNERABLE TO HURRICANES. DROUGHT FROM 1969-73: CROP LOSSES RANGING FROM 15-40% OF NORMAL PRODUCTION. SEE SEISMICITY.

US VOLAGS

AFL-CIO	1/0	ED, IND DEV
SISTERS OF ST. AGNES	10/12	CD, ED, MED&PH, NUTR, SW
AMERICAN BAPTIST CHURCH IN US	1/1	ED, MED&PH, SW

AMERICAN FOUNDATION FOR OVER-SEAS BLIND	N/A	ED, EQUIP&MAT AID
AMERICAN NATIONAL RED CROSS	N/A	ED, EQUIP&MAT AID, MED&PH
BAPTIST WORLD RELIEF	N/A	MED&PH, EQUIP&MAT AID
BRETHREN IN CHRIST MISSIONS	6/0	ED, MED&PH
BROTHER'S BROTHER FOUNDATION	TEMP	ED, EQUIP&MAT AID, MED&PH
CAPUCHIN FATHERS	39/139	NUTR, SW, C,H,P, CREDIT, ED FOOD&AGR, MED&PH
CARE	6/9	C,H,P,EQUIP&MAT AID, MED&PH
CATHOLIC MEDICAL MISSION BOARD	N/A	MED&PH
CATHOLIC RELIEF SERVICES	2/3	CD, C,H,P, CREDIT, ED, EQUIP, MAT AID, FOOD&AGR MED & PH, NUTR, SW
CENTRAL AMERICAN MISSION	6/6	ED
CHRISTIAN BROTHERS	10/52	ED
CHRISTIAN REFORMED WORLD RELIEF COMMITTEE	6/1	C,H,P, ED, MED&PH, SW
CHURCH OF THE NAZARENE	1/15	ED, MED&PH
CHURCH WORLD SERVICE	1/0	CD. CHP, ED, POP&FAM,SW
CREDIT UNION NAT'L SERVICE	N/A	CREDIT, ED
EPISCOPAL CHURCH OF US	0/33	ED, MED&PH, SW
FCH SERVICES	2/0	CD, C,H,P
FORD FOUNDATION	N/A	PUBLIC&BUS ADMIN
INTERMEDIA	N/A	CD, CREDIT, ED FOOD (AGR, MED&PH)
INT'L EXECUTIVE SERVICE CORPS	2/0	PUBLIC&BUS ADMIN
W.K. KELLOG FOUNDATION	N/A	ED, MED&PH

LUTHERAN WORLD RELIEF	1/0	SOCIAL WELFARE
MARYKNOLL SISTERS OF ST DOMINIC	11/SEVERAL	CD,C,H,P,ED, MED&PH, SW
MEALS FOR MILLIONS FOUNDATION	N/A	EQUIP&MAT AID, NUTR
MENNONITE CENTRAL COMMITTEE	17/0	CD, C,H,P
MENNONITE ECON DEV ASSOCIATES	N/A	IND DEV
MORAVIAN CHURCH IN AMERICA	7/50	ED, MED&PH
NAT'L ASSOC OF PARTNERS OF ALLIANCE	TEMP	C,H,P, EQUIP&MAT AID, FOOD & AGR, IND DEV, PH, SW
NAT'L COUNCIL OF CATHOLIC LAIETY	N/A	MED&PH, SW
NAT'L 4-H CLUB FOUNDATION	LOCAL	COMMUNICATION, CD, ED, FOOD & AGR
NAT'L RURAL ELECTRIC COOPERATIVE ASSOCIATION	1/0	CREDIT
PAN-AMERICAN DEVELOPMENT FOUNDATION	4/17	MED&PH, CREDIT, ECO&DEV PLANNING, ED, FOOD&AGR
PUBLIC WELFARE FOUNDATION	N/A	MED&PH
ROCKEFELLER FOUNDATION	N/A	PUBLIC&BUS ADMIN
SALESIANS OF ST JOHN BOSCO	11/11	ED & SW
UNITED METHODIST COMMITTEE ON RELIEF	16/0	C,H,P
VITA	N/A	ED
WORLD NEIGHBORS	2/4	COMMUNITY DEVELOPMENT, ED
WORLD REHABILITATION FUND	N/A	EQUIP&MAT AID, SW
WORLD RELIEF COMMISSION	N/A	EQUIP&MAT AID
WORLD UNIVERSITY SERVICE	N/A	ED, IND DEV

KEY:

CD.....COMMUNITY DEVELOPMENT
C.H.P.....CONSTRUCTION, HOUSING & PLANNING
COOPS & LOANS.....COOPERATIVES, CREDIT UNIONS & LOANS
EC & DEV PL.....ECONOMIC AND DEVELOPMENT PLANNING
ED.....EDUCATION
EQUIP & MAT AID.....EQUIPMENT AND MATERIAL AID
FOOD PROD & AGR.....FOOD PRODUCTION AND AGRICULTURE
IND DEV.....INDUSTRIAL DEVELOPMENT
MED & PH.....MEDICINE AND PUBLIC HEALTH
NUTR.....NUTRITION
POP AND FAM SERV.....POPULATION AND FAMILY SERVICES
P AND BUS ADMIN.....PUBLIC AND BUSINESS ADMINISTRATION
SW.....SOCIAL WELFARE
Y.....YOUTH

NATIONAL POPULATION

MID-1977 ESTIMATED TOTAL POPULATION WAS 2.4 MILLION. ANNUAL GROWTH RATE AVERAGES 3.3%, COMPARED TO 2.9% FOR ALL LATIN AMERICA. RATE'S ACCELERATION FROM 2.6% IN 1950'S IS DUE TO RISING BIRTH RATE AND DRASTIC DECLINE IN INFANT MORTALITY.

POPULATION DISTRIBUTION UNEVEN: OVER 60% OF PEOPLE LIVE IN PACIFIC REGION (15% OF LAND AREA; DENSITY 68/KM), WHILE ATLANTIC REGION, HALF THE TOTAL AREA, IS VIRTUALLY EMPTY EXCEPT FOR SMALL COASTAL TOWNS AND MINING SETTLEMENTS. CENTRAL REGION IS TRANSITIONAL WITH HIGHEST DENSITIES IN NW VALLEYS.

BY 1977 URBAN POPULATIONS CONSTITUTED 48% OF TOTAL. MANAGUA GREW AT ANNUAL RATE OF 6% DURING 1970-1975 PERIOD, WHILE OTHER CITIES' ANNUAL INCREASE AVERAGED 4.5%. GROWTH RATE FOR TOTAL POPULATION IS 3.3%. ECONOMIC INCENTIVE IS MOTIVATING FACTOR FOR RURAL-URBAN MIGRATION (URBAN INCOMES ARE 3.5 TIMES HIGHER THAN RURAL SUBSISTENCE ONES). MIGRATION TO MANAGUA SLOWED TEMPORARILY AFTER THE 1972 EARTHQUAKE, BUT HAS PICKED UP AGAIN WITH 1 OUT OF EVERY 4 MIGRANTS GOING TO MANAGUA. MIGRANTS ARE GENERALLY YOUNG SINGLE MALES AGED 10-24 ENTERING THE WORK FORCE FOR FIRST TIME.

FAMILY PLANNING HAS BEEN GOVERNMENT SPONSORED SINCE 1967 AND INCLUDES 62 MINISTRY OF HEALTH CLINICS AND 7 SOCIAL SECURITY CLINICS. ACTIVE USERS OF CONTRACEPTIVES ARE FEW (ONLY 6% OF WOMEN OF CHILD-BEARING AGE).

*CENSUS PROBABLY UNDERSTATES POPULATION BY ABOUT 10%.

POPULATION BY DEPARTMENT*

DEPARTMENT/ MUNICIPALITY	6/3/73 EST POP	AREA (KM2)	DENSITY
TOTAL	2,014,658	118,358	17.02
ZONA DEL PACIFICO	1,178,321	18,219	64.68
DEPARTAMENTO DE CHINANDEGA	180,783	4,662	38.78

DEPARTMENT/ MUNICIPALITY	6/3/73 EST POP	AREA (KM2)	DENSITY
CHINANDEGA	57,332	625	91.73
CHICHIGALPA	26,306	253	103.98
CINCO PINOS	4,763	59	80.73
CORINTO	16,013	10	1,601.30
MORAZAN	4,361	224	19.47
POSOLTEGA	7,981	144	55.42
EL REALEJO	2,326	100	23.26
SAN FRANCISCO	5,219	144	36.24
SAN PEDRO	3,691	76	48.57
SANTO TOMAS	3,451	34	101.50
SOMOTILLO	12,869	928	13.87
EL VIEJO	27,297	1,271	21.48
VILLA NUEVA	9,174	794	11.55
DEPARTMENT DE LEON	202,564	5,234	38.70
LEON	99,530	852	116.82
ACHUAPA	10,375	342	30.34
EL JICARAL	3,366	206	16.35
LARREYNAGA	18,317	834	21.96
NAGAROTE	15,250	602	25.33
LA PAZ CENTRAL	15,594	872	17.88
QUEZALGUAQUE	3,960	48	82.50
EL SAUCE	14,690	700	20.99
SAN NICOLAS	4,191	210	19.96
SANTA ROSA DEL PENON	4,747	204	23.27
TELICA	12,544	364	34.46
DEPARTAMENTO DE MANAGUA	394,414	3,635	108.50
MANAGUA	312,338	816	382.77
EL CARMEN	11,826	414	28.57
MATEARE	5,946	248	23.98
SAN FRANCISCO DEL CARNICERO	12,078	771	15.67
SAN RAFAEL DEL SUR	26,099	386	67.61
TIPITAPA	26,127	1,000	26.13

DEPARTMENT/ MUNICIPALITY	6/3/73 EST POP	AREA (KM2)	DENSITY
DEPARTAMENTO DE MASAYA	114,461	543	210.79
MASAYA	61,279	160	382.99
CATARINA	3,354	17	197.29
LA CONCEPCION	12,656	57	222.04
MASATEPE	14,363	54	265.98
NANDASMO	3,868	10	386.80
NINDIRI	9,702	121	80.18
NIQUINOHOMO	4,721	39	121.05
SAN JUAN DE ORIENTE	1,212	12	101.00
TISMA	3,306	73	45.29
DEPARTAMENTO DE GRANADA	106,268	964	110.24
GRANADA	74,980	509	147.31
DIRIA	3,764	30	125.47
DIRIOMO	10,045	40	251.13
NANDAIME	17,479	385	45.40
DEPARTAMENTO DE CARAZO	93,852	1,032	90.94
JINOTEPE	26,847	281	95.54
LA CONQUISTA	3,288	89	36.94
DIRIAMBIA	34,495	341	101.16
DOLORES	1,926	2	963.00
LA PAZ DE ORIENTE	2,192	13	168.62
EL ROSARIO	2,036	9	226.22
SAN MARCOS	11,798	113	104.41
SANTA TERESA	11,270	184	61.25
DEPARTAMENTO DE RIVAS	85,979	2,149	40.01
RIVAS	26,482	360	73.56
ALTAGRACIA	8,062	220	36.65
BELEN	9,989	284	35.17
BUENOS AIRES	3,509	96	36.55
CARDENAS	2,172	260	8.35
MOYOGALPA	6,614	53	124.79
POTOSI	5,392	96	56.16
SAN JORGE	4,833	30	161.10
SAN JUAN DEL SUR	8,165	296	27.58
TOLA	10,762	454	23.71

DEPARTMENT/ MUNICIPALITY	6/3/73 EST POP	AREA (KM2)	DENSITY
ZONA CENTRAL Y NORTE	656,505	33,597	19.54
DEPARTAMENTO DE CHONTALES	76,363	4,947	15.44
JUIGALPA	20,884	1,065	19.61
ACOYAPA	7,342	1,020	7.20
COMALAPA	5,616	461	12.18
LA LIBERTAD	10,156	184	55.20
SAN PEDRO DE LOVAGO	5,377	428	12.56
SANTO DOMINGO	8,395	603	13.92
SANTO TOMAS	7,448	389	19.15
VILLA SOMOZA	11,145	797	13.98
DEPARTAMENTO DE BOACO	75,319	4,982	15.12
BOACO	21,441	1,202	17.84
CAMOAPA	16,868	2,252	7.49
SAN JOSE	5,147	208	24.74
SAN LORENZO	12,780	617	20.71
SANTA LUCIA	5,587	118	47.35
TEUSTEPE	13,496	585	23.07
DEPARTAMENTO DE MATAGALPA	186,462	6,794	27.44
MATAGALPA	72,602	1,880	38.62
CIUDAD DARIO	24,375	736	33.12
ESQUIPULAS	7,439	222	33.15
MATIGUAS	31,317	1,910	16.40
MUY MUY	5,869	378	15.53
SEBACO	9,990	317	31.51
SAN DIONISIO	3,375	101	33.42
SAN ISIDRO	7,195	192	37.47
SAN RAMON	15,133	768	19.70
TERRABONA	9,167	290	31.61
DEPARTAMENTO DE JINOTEGA	99,066	9,576	10.34
JINOTEGA	75,546	8,600	8.78
LA CONCORDIA	4,439	176	25.22
SAN RAFAEL DEL NORTE	8,044	448	27.96
SAN SEBASTIAN DE YALI	11,037	352	31.36

DEPARTMENT/ MUNICIPALITY	6/3/73 EST POP	AREA (KM2)	DENSITY
DEPARTAMENTO DE ESTELI	88,446	2,199	40.22
ESTELI	40,893	826	49.51
CONDEGA	14,087	474	29.72
PUEBLO NUEVO	10,972	176	62.34
SAN JUAN DE LIMAY	9,327	478	19.51
LA TRINIDAD	13,167	245	53.74
DEPARTAMENTO DE MADRIZ	58,255	1,758	33.14
SOMOTO	16,153	455	35.50
PALACAGUINA	6,234	78	79.92
LAS SABANAS	1,877	192	9.78
SAN JOSE DE CUSMAPA	4,444	96	46.29
SAN LUCAS	7,362	160	46.01
SAN JUAN DE RIO COCO	5,057	205	24.67
TELPANECA	8,902	337	26.42
TOTOGALPA	4,680	155	30.19
YALAGUINA	3,546	80	44.32
DEPARTAMENTO DE NUEVA SEGOVIA	72,594	3,341	21.73
OCOTAL	10,373	140	74.09
CIUDAD ANTIGUA	1,502	248	6.06
DIPILTO	1,903	96	19.82
JALAPA	17,579	595	29.54
MACUELIZO	2,747	216	12.72
EL JICARO	10,472	340	30.80
MOZONTE	2,605	222	11.73
MURRA	9,080	668	13.59
QUILALI	4,522	N.D.	N.D.
SAN FERNANDO	2,599	228	11.40
SANTA MARIA	3,297	160	20.61
WIWILI	5,915	N.D.	N.D.
ZONA DEL ATLANTICO	179,832	66,542	2.70
DEPARTAMENTO DE RIO SAN JUAN	22,343	7,488	3.00
SAN CARLOS	7,959	N.D.	N.D.
MORRITO	6,025	1,464	4.12
SAN JUAN DEL NORTE	788	2,216	0.36
SAN MIGUELITO	5,334	1,368	3.90
EL CASTILLO	2,237	N.D.	N.D.

DEPARTMENT/ MUNICIPALITY	6/3/73 EST POP	AREA (KM2)	DENSITY
DEPARTAMENTO DE ZELAYA	157,489	59,094	2.66
BLUEFIELDS	28,503	11,704	2.44
CORN ISLAND	2,127	12	177.25
LA CRUZ DE RIO GRANDE	13,138	11,719	1.12
PRINZAPOLKA	17,070	N.D.	N.D.
PUERTO CABEZAS	14,815	6,963	2.13
RAMA	34,115	N.D.	N.D.
CABO GRACIAS A DIOS	3,938	3,756	1.05
WASPAN	14,399	4,308	3.34
SIUNA	10,689	N.D.	N.D.
MUELLE DE LOS BUEYES	18,695	N.D.	N.D.

*NOTE POPULATION INCREASES BETWEEN 1973 AND 1976 (SEE FOLLOWING CHART). PARTICULARLY DRAMATIC ARE INCREASES IN THE NATIONAL DISTRICT OF MANAGUA AND THE PACIFIC ZONE.

POPULATION OF DEPARTMENTS JUNE 30, 1976*

BOACO	78,026
CARAZO	91,887
CHINANDEGA	187,798
CHONTALES	83,391
ESTELI	93,005
GRANADA	93,216
JINOTEGA	107,090
LEON	208,814
MADRIZ	62,152
MANAGUA	558,029
MASAYA	116,033
MATAGALPA	190,717
NUEVA SEGOVIA	80,709
RIO SAN JUAN	24,146
RIVAS	90,993
ZELAYA	169,689
ZONA DEL ATLANTICO	193,835
ZONA CENTRAL Y NORTE	695,090
ZONA DEL PACIFICO	1,346,770

* PROVISIONAL

HEALTH AND NUTRITION

MORTALITY

FIRST 5 PRINCIPAL CAUSES OF DEATH (1969) WERE: ENTERITIS AND OTHER DIARRHEAL DISEASES (17.3% OF ALL DEATHS), DISEASES OF THE HEART (6.4%), ACCIDENTS (5.7%), INFLUENZA AND PNEUMONIA (4.6%), HOMICIDE, LEGAL INTERVENTIONS AND OPERATIONS OF WAR (3.9%) AND CEREBROVASCULAR DISEASE (3.4%); OTHERS WITHIN FIRST 10 CAUSES WERE: OTHER DISEASES OF THE DIGESTIVE APPARATUS, TETANUS, MALIGNANT TUMORS AND MEASLES. THOUGH 1969 DEATH RATE WAS REPORTED AS 8.2/1000, SURVEY TAKEN THAT YEAR FOUND THAT REAL RATE WAS 16/1000 AND THAT HALF OF ALL THE DEATHS WERE NEVER REPORTED. OF REPORTED DEATHS, ONLY 48% WERE MEDICALLY CERTIFIED; OTHERS CERTIFIED BY HEALTH AUXILIARIES OR NON-PROFESSIONAL PERSONNEL. OVER 26% OF ALL REPORTED DEATHS WERE ATTRIBUTED TO ILL-DEFINED AND UNKNOWN CAUSES AND IT IS PROBABLE THAT THOSE CAUSES WHICH ARE FAMILIAR OR PRODUCE UNIQUE SYMPTOMS ARE OVER-REPORTED. POOR SANITATION, INADEQUATE NUTRITION AND LACK OF APPROPRIATE HEALTH CARE INDICATED BY THE 40% OF REPORTED DEATHS OCCURRING BEFORE AGE 5 AS THE RESULT OF ENTERIC DISEASES (OFTEN CHRONIC), PNEUMONIA, TETANUS AND MEASLES.

MORBIDITY

1970 NOTIFIABLE DISEASES INCLUDE MALARIA (1348.8*), AMOEBIC DYSENTERY (189.8*), GONOCOCCAL INFECTION (121.6*), TUBERCULOSIS (97.5*), SYPHILIS (73.1*), BACILLARY DYSENTERY (63.9*), MEASLES (60.5*), WHOOPING COUGH (19.6*). HOWEVER, GROSS UNDER-REPORTING OF PRIMARY CHILDHOOD DISEASES LIKE MEASLES AND TETANUS (FOR WHICH REPORTED CASES WERE FEWER THAN REPORTED DEATHS) AND POLIO, WHICH IS ENDEMIC IN NICARAGUA, MAKES INACCURACY OF RATES OBVIOUS. COMPLICATIONS OF HIGH RATES OF CHRONIC DISEASES LIKE MALARIA AND GONORRHEA INCLUDE HIGH VECTOR RESISTANCE TO PESTICIDES (MALARIA) AND INCREASED MOBILITY OF POPULATION AND AVAILABILITY OF ANTIBIOTICS WITHOUT PRESCRIPTION. CROWDED LIVING CONDITIONS IN URBAN AND RURAL SLUMS FACILITATE SPREAD OF RESPIRATORY DISEASES, ESPECIALLY TB.

UNDERLYING, AND INCREASING SUSCEPTIBILITY TO, NOTIFIABLE DISEASES IS WIDESPREAD INFECTION WITH INTESTINAL PARASITES; IT IS ESTIMATED THAT 80% OF POPULATION ARE HOSTS TO SUCH PARASITES, DUE PRIMARILY TO CONTAMINATED WATER SUPPLIES.

*MORBIDITY RATES/100,000

VITAL STATISTICS (1977)

BIRTH RATE: 45/1,000 POPULATION
 DEATH RATE: 13/1,000 POPULATION
 INFANT MORTALITY: 46/1,000 LIVE BIRTHS
 MORTALITY RATE AGE 1-4: 17/1,000
 LIFE EXPECTANCY: 55 YEARS

HEALTH-RELATED DATA BY REGION

INDEX	TOTAL	REGION	REGION	REGION	REGION
		1	2	3	4
POPULATION	2,113,600	344,500	824,900	83,400	145,000
% OF TOTAL POPULATION	100	16.3	39.0	4.0	6.9
% RURAL POPULATION	52.2	51.4	26.6	65.5	76.7
DENSITY PER KM ²	17.8	37.9	121.7	38.8	26.6
POPULATION UNDER 5 YEARS OF AGE	436,880	70,280	159,680	16,380	31,280
FEMALE POP. (15-44 YEARS OF AGE)	473,330	75,240	198,590	17,340	31,110
% PCM IN 0-5 YEARS	56.6	56.5	63.6	63.4	61.4
% CHILD MORTALITY (5 YEARS)	32.3	37.6	31.5	26.4	45.6
% POP. WITH LOW OR DEF. HGB.	9.56	6.8	14.2	2.6	5.3
% POP. WITH LOW OR DEF. VIT. A PLASMA	9.96	8.09	16.6	4.1	8.4
% PREVALENCE ENDEMIC GOITER	32	32-48	31-42	45	34
% POP. WITH RDA FOR CALORIES	96	66	33	50	100
AVG. PER CAPITA RURAL INCOME		\$225.00	112.70	181.80	131.17
% RURAL LITERACY	30.3	34.6	42.2	44.3	25
% MOTHERS WHO BREAST-FEED	79	84.2	72.2	83.3	100
% URBAN POP. WITH POTABLE WATER	71.9	52.8	83.0	42.0	55.9
% RURAL POP. WITH POTABLE WATER	5.52	5.5	15.3	3.7	1.4

% URBAN POP. WITH SANITARY DISPOSAL EXCRETA	92.01	90.8	96.3	94.2	76.1
% RURAL POP. WITH SANITARY DISPOSAL EXCRETA	39.1	30.6	45.4	55.9	17.1
NO. PHYSICIANS	1,292	269	792	25	31
NO. HOSPITAL BEDS	4,610	925	2,324	129	156
NO. OUTPAT. AMB. SERVICES*	187	26	59	12	20

	REGION	REGION	REGION	REGION
INDEX	5	6	7	8
POPULATION	333,500	217,700	70,100	88,500
% OF TOTAL POP- ULATION	15.8	10.3	3.6	4.0
% RURAL POPULATION	77.4	77.4	77.5	76.4
DENSITY PER KM ²	20.7	12.5	1.9	4.1
POPULATION UNDER 5 YEARS OF AGE	73,560	48,320	17,030	19,850
FEMALE POP. (15-44 YEARS OF AGE)	71,030	45,330	16,000	18,640
% PCM IN 0-5 YEARS	46.7	42.5	31.8	59.5
% CHILD MORTALITY (5 YEARS)	25.6	15.4	28.3	30.7
% POP. WITH LOW OR DEF. HGB.	8.8	12.6	2.5	21.8
% POP. WITH LOW OR DEF. VIT. A PLASMA	9.1	5.6	23.1	3.0
% PREVALENCE ENDEMIC GOITER	22-34	14-34	13	13
% POP. WITH RDA FOR CALORIES	100	33	0	0
AVG. PER CAPITA RURAL INCOME	89.86	222.86	N.I.	N.I.
% RURAL LITERACY	23.1	23.3	24.1	24.1
% MOTHERS WHO BREAST- FEED	91.5	74.6	57.1	73.9
% URBAN POP. WITH POTABLE WATER	70.4	54.1	35.3	35.3
% RURAL POP. WITH POTABLE WATER	3.8	1.6	1.9	1.9

	REGION	REGION	REGION	REGION
INDEX	5	6	7	8
% URBAN POP. WITH SANITARY DISPOSAL EXCRETA	82.7	75.3	83.1	83.1
% RURAL POP. WITH SANITARY DISPOSAL EXCRETA	19.7	21.7	27.1	27.1
NO. PHYSICIANS	91	45	39	39
NO. HOSPITAL BEDS	575	181	162	158
NO. OUTPAT. AMB. SERVICES*	19	24	16	-

*INCLUDES: OUTPATIENT FACILITIES OF INSS, JLAS, HEALTH CENTERS,
MOH, PUMAR, ADN CLINICS.

SOURCE: UASS, EVALUACION DEL COMPONENTE NUTRICIONAL DEL SECTOR SALUD,
CON ASESORIA INCAP, DECEMBER 1975.

REGION 1 - PACIFIC NORTH
 REGION 2 - PACIFIC CENTRAL
 REGION 3 - PACIFIC SOUTH
 REGION 4 - INTERIOR NORTH
 REGION 5 - INTERIOR CENTRAL
 REGION 6 - INTERIOR SOUTH
 REGION 7 - ATLANTIC NORTH
 REGION 8 - ATLANTIC SOUTH

HEALTH FACILITIES

1973 LOCATION	CENTERS	DOC- TORS	DEN- TISTS	NUR- SES	AUX- NURS	BEDS
MANAGUA	VELEZ PAIZ	201	4	84	200	
MANAGUA	CONSULTORIO CENTRAL	38	14	5	84	
MANAGUA	CONSULTORIO ORIENTAL	39	10	2	26	

1973 LOCATION	CENTERS	DOC-	DEN-	NUR-	AUX-	BEDS
MANAGUA	CONSULTORIO OCCIDENTAL	21	6	2	22	
SAN RAFAEL DEL SUR	CONSULTORIO	1	1			
TIPITAPA	CONSULTORIO	2	1	1	6	
LEON	HOSP LUIS A SOMOZA	24	4	6	39	145
CHINANDEGA	HOSPITAL SAN VINCENTE	1				
CORINTO	UNIDAD DE CORINTO	2	2	1	8	
SIUNA	HOSP LA LUZ	1	1	1	6	12
ROSITA	HOSP ROSITA	2	1	1	7	14
BONANZA	HOSP NEPTUNE	2	1	1	10	14

MANAGUA FACILITIES

HOSPITALS	MD'S	DENTISTS	NURSES	NURSES AUXILIARY	BEDS
EL RETIRO	20	3	4	30	
VELEZ PAIZ	243	5	95	259	295
BAUTISTA	4	1	6	10	18
MILITAR	45	6	18	93	145
PISQUATRICO	10	1	13	103	451
SAN LAZARO	2	1	--	2	90
LA BUENA ESPERANZA	2	-	8	42	56

HEALTH FACILITIES DATA

1) NAME: HOSPITAL SAN PABLO

LOCATION: BLUEFIELDS

SPONSOR: JNAPS (JUNTA NACIONAL DE ASISTENCIA Y PREVISION
SOCIAL)

CAPACITY AND CAPABILITY:

A) NO. OF BEDS: 158

B) OPERATING ROOMS: 1

C) SPECIALIZATION: SURGERY, PEDIATRICS, OBSTETRICS

D) STAFFING:

DOCTORS: 7

ANESTHETISTS: 1

NURSES: 3

AUXILIARIES: 39

X-RAYS: 1

E) DIAGNOSTIC LAB: 2

OTHER: BLOOD BANK, MORGUE, PHARMACY

F) AMBULANCE SERVICE: YES

2) NAME: JOSE NIEBOROWSKI

LOCATION: BOACU

TELEPHONE: 134

SPONSOR: JNAPS (JUNTA NACIONAL DE ASISTENCIA Y PREVISION
SOCIAL)

CAPACITY AND CAPABILITY:

- A) NO. OF BEDS: 66
- B) OPERATING ROOMS: 1
- C) SPECIALIZATION: SURGERY, GYNECOLOGY, PEDIATRICS
- D) STAFFING:
 - DOCTORS: 16
 - ANESTHETISTS: 1
 - NURSES: 2
 - AUXILIARIES: 10
 - X-RAYS: 1
- E) DIAGNOSTIC LAB: 1
 - OTHER: PHARMACY
- F) AMBULANCE SERVICE: YES

3) NAME: HOSPITAL SAN VICENTE

LOCATION: CHINANDEGA

TELEPHONE: (0341) 3523

SPONSOR: JNAPS (JUNTA NACIONAL DE ASISTENCIA Y PREVISION SOCIAL)

CAPACITY AND CAPABILITY:

- A) NO. OF BEDS: 208
- B) OPERATING ROOMS: 2
- C) SPECIALIZATION: REHABILITATION, EMERGENCY ROOM, RADIOTHERAPY
- D) STAFFING:
 - DOCTORS: 45
 - ANESTHETISTS: 3
 - NURSES: 12
 - AUXILIARIES: 53

E) DIAGNOSTIC LAB: 1

OTHER: BLOOD BANK, DELIVERY SUITE, PHARMACY, MORGUE

F) AMBULANCE SERVICE: YES

4) NAME: SAN JUAN DE DIOS

LOCATION: ESTELF

SPONSOR: JNAPS (JUNTA NACIONAL DE ASISTENCIA Y PREVISION SOCIAL)

CAPACITY AND CAPABILITY:

A) NO. OF BEDS: 137

B) OPERATING ROOMS: 1

C) SPECIALIZATION: GYNECOLOGY, PEDIATRICS, SURGERY

D) STAFFING:

DOCTORS: 13

ANESTHETISTS: 3

NURSES: 4

AUXILIARIES: 25

X-RAYS: 1

E) DIAGNOSTIC LAB: 1

OTHER: BLOOD BANK

F) AMBULANCE SERVICE: YES

5) NAME: HOSPITAL SAN JUAN DE DIOS

LOCATION: GRANADA

TELEPHONE: (072) 2209 - 2208 - 2207

SPONSOR: JNAPS (JUNTA NACIONAL DE ASISTENCIA Y PREVISION SOCIAL)

CAPACITY AND CAPABILITY:

A) NO. OF BEDS: 367

B) OPERATING ROOMS: 1

C) SPECIALIZATION: GYNECOLOGY, OBSTETRICS, PEDIATRICS,
SURGERY, T.B.

D) STAFFING:

DOCTORS: 16

ANESTHETISTS: 3

NURSES: 3

AUXILIARIES: 65

X-RAYS: 2

E) DIAGNOSTIC LAB: 1

OTHER: MORGUE, BLOOD BANK

F) AMBULANCE SERVICE: YES

6) NAME: HOSPITAL VICTORIA

LOCATION: JINOTEGA

TELEPHONE: 6

CAPACITY AND CAPABILITY:

A) NO. OF BEDS: 92

B) OPERATING ROOMS: 1

C) SPECIALIZATION: GYNECOLOGY, PEDIATRICS, SURGERY

D) STAFFING:

DOCTORS: 13

ANESTHETISTS: 1

NURSES: 2

AUXILIARIES: 27

X-RAYS: 1

E) DIAGNOSTIC LAB: 1

OTHER: PHARMACY

F) AMBULANCE SERVICE: YES

7) NAME: HOSPITAL SANTIAGO

LOCATION: JINTEPE, CARAZO

TELEPHONE: (041) 611

SPONSOR: JNAPS (JUNTA NACIONAL DE ASISTENCIA Y PREVISION
SOCIAL)

CAPACITY AND CAPABILITY:

A) NO. OF BEDS: 175

B) OPERATING ROOMS: 4

C) SPECIALIZATION: GYNECOLOGY, OBSTETRICS, PEDIATRICS,
SURGERY

D) STAFFING:

DOCTORS: 18

ANESTHETISTS: 4

NURSES: 12

X-RAYS: 5

E) DIAGNOSTIC LAB: 9

OTHER: BLOOD BANK, PHARMACY

F) AMBULANCE SERVICE: YES

8) NAME: HOSPITAL SAN VICENTE

LOCATION: LEON

TELEPHONE: (031) 2916

SPONSOR: JNAPS (JUNTA NACIONAL DE ASISTENCIA Y PROVISION SOCIAL)

CAPACITY AND CAPABILITY:

- A) NO. OF BEDS: 271
- B) OPERATING ROOMS: 4
- C) SPECIALIZATION: REHABILITATION, RADIOTHERAPY
- D) STAFFING:
 - DOCTORS: 84
 - SURGEONS: 12
 - ANESTHETISTS: 5
 - NURSES: 14
 - AUXILIARIES: 151
 - X-RAYS: 3
- E) DIAGNOSTIC LAB: 1
 - OTHER: BLOOD BANK, DELIVERY SUITE, MORGUE
- F) AMBULANCE SERVICE: YES

9) NAME: HOSPITAL BAUTISTA

LOCATION: MANAGUA, NICARAGUA

TELEPHONE: 24154 - 26913 - 23345

SPONSOR: CONVENCION BAUTISTA DE NICARAGUA

CAPACITY AND CAPABILITY:

- A) NO. OF BEDS: 52
- B) OPERATING ROOMS: 4
- C) SPECIALIZATION: GYNECOLOGY, PEDIATRICS, TRAUMATOLOGY, GENERAL SURGERY, ETC.

D) STAFFING:

DOCTORS: 60 AMBULATORY = 10 FIX
ANESTHETISTS: NO FIX - 10 AMBULATORY
NURSES: RN 20
AUXILIARIES: 50
X-RAYS: 1 RADIOLOGIST, 4 TECHNICIANS, 1 PATHOLOGIST,
4 TECHNOLOGISTS, 6 LAB. AUX.

E) DIAGNOSTIC LAB: 1

OTHER: PHARMACY, EMERGENCY SERVICE, BLOOD BANK

F) AMBULANCE SERVICE: NO

10) NAME: HOSPITAL SAN ANTONIO

LOCATION: MASAYA

TELEPHONE: (071) 2231

SPONSOR: JNAPS (JUNTA NACIONAL DE ASISTENCIA Y PROVISION
SOCIAL)

CAPACITY AND CAPABILITY:

A) NO. OF BEDS: 159

B) OPERATING ROOMS: 1

C) SPECIALIZATION: PEDIATRICS, GYNECOLOGY, SURGERY

D) STAFFING:

DOCTORS: 14
ANESTHETISTS: 2
NURSES: 6
AUXILIARIES: 59
X-RAYS: 4

E) DIAGNOSTIC LAB: 6

OTHER: PHARMACY

F) AMBULANCE SERVICE: YES

11) NAME: HOSPITAL SAN VICENTE

LOCATION: MATAGALPA

TELEPHONE: (06) 211 - 212

SPONSOR: JNAPS (JUNTA NACIONAL DE ASISTENCIA Y PREVISION SOCIAL)

CAPACITY AND CAPABILITY:

A) NO. OF BEDS: 131

B) OPERATING ROOMS: 1

C) SPECIALIZATION: PEDIATRICS, SURGERY, GYNECOLOGY

D) STAFFING:

DOCTORS: 24

ANESTHETISTS: 2

NURSES: 6

AUXILIARIES: 60

X-RAYS: 4

E) DIAGNOSTIC LAB: 4

OTHER: BLOOD BANK, PHARMACY

F) AMBULANCE SERVICE: YES

12) NAME: HOSPITAL SAN JOSE

LOCATION: RIVAS

TELEPHONE: (081) 461

SPONSOR: JNAPS (JUNTA NACIONAL DE ASISTENCIA Y PREVISION SOCIAL)

CAPACITY AND CAPABILITY:

A) NO. OF BEDS: 132

B) OPERATING ROOMS: 1

C) SPECIALIZATION: PEDIATRICS, SURGERY, GYNECOLOGY

D) STAFFING:

DOCTORS: 12
ANESTHETISTS: 1
NURSES: 5
AUXILIARIES: 29
X-RAYS: 1

E) DIAGNOSTIC LAB: 2

OTHER: BLOOD BANK, PHARMACY

F) AMBULANCE SERVICE: YES

13) NAME: HOSPITAL ADVESTISTA

LOCATION: TRINIDAD, 25 KM SOUTH OF ESTELI ON PAN AM HIGHWAY

TELEPHONE: TRINIDAD # 2

SPONSOR: SEVENTH DAY ADVENTISTS

CAPACITY AND CAPABILITY:

A) NO. OF BEDS: 60

B) OPERATING ROOMS: 2

C) SPECIALIZATION: GENERAL

D) STAFFING:

DOCTORS: 7
ANESTHETISTS: 1
NURSES: 8
AUXILIARIES: 12 to 20

E) DIAGNOSTIC LAB: YES

OTHER: BLOOD BANK, PHARMACY

F) AMBULANCE SERVICE: YES

G) FOOD: VEGETARIAN

HEALTH INSTITUTIONS

LOCATION	NUMBER OF HEALTH INSTITUTIONS	NUMBER OF BEDS
TOTAL	49	4,279
ZONA DEL PACIFICO	29	3,060
CHINANDEGA	3	220
ING SAN ANTONIO	1	56
CORINTO	1	50
LEON	7	620
MINA EL LIMON	1	12
MANAGUA	10	1,090
MASAYA	1	154
GRANADA	1	358
NANDAIME	1	74
JINOTEPE	1	234
DIRIAMBA	1	67
RIVAS	1	125
ZONA CENTRAL Y NORTE	12	873
JUIGALPA	1	76
BOACO	1	65
MATAGALPA	2	142
ARANJUEZA	1	165
MATIGUAS	1	20
JINOTEGA	1	88
ESTELI	2	134
LA TRINIDAD	1	30
SOMOTO	1	85
OCOTAL	1	68
ZONA DEL ATLANTICO	8	346
SAN CARLOS	1	21
NUEVA GUINEA	1	6
BLUEFIELDS	1	158
ROSITA	1	14
BILWASKARMA	1	94
PUERTO CABEZAS	1	27
BONANZA	1	14
SIUNA	1	12

BEDS BY DEPARTMENT

	POPULATION	BEDS	RATE/1000
TOTAL	2,048,638	4,279	2.08
ZONA DEL PACIFICO	1,205,904	3,060	2.54
CHINANDEGA	181,455	326	1.80
LEON	199,640	632	3.16
MANAGUA	434,554	1,090	2.50
MASAYA	111,861	154	1.38
GRANADA	97,491	432	4.43
CARAZO	93,767	301	3.21
RIVAS	87,136	125	1.43
ZONA CENTRAL Y NORTE	660,620	873	1.32
CHONTALES	77,006	76	0.98
BOACO	75,429	65	0.86
MATAGALPA	185,009	327	1.76
JINOTEGA	100,682	88	0.87
ESTELI	89,326	164	1.84
MADRIZ	58,890	85	1.44
NUEVA SEGOVIA	74,278	68	0.92
ZONA DEL ATLANTICO	182,114	346	1.90
RIO SAN JUAN	22,721	21	0.92
ZELAYA	159,393	325	2.04

HEALTH PERSONNEL

PHYSICIANS - 1,385 OR 0.7/1000; DENTISTS - 286 OR 0.14/1000,
GRADUATE NURSES - 469 OR 0.24/1000; NURSING AUXILIARIES - 1915
OR 0.96/1000.

FOLK MEDICINE

DISTRUST OF MODERN MEDICINE IN RURAL AREAS REFLECTED IN PREFERENCE FOR MIDWIVES AND CURANDEROS (LAY MEDICINE MEN) OVER PHYSICIANS. GON HAS MADE NO ATTEMPT TO INTEGRATE FOLK CURERS INTO ITS HEALTH PROGRAMS.

DIET: MDR/RDA

CALORIES 2248

PROTEIN	FAT	CARBOHYDR	CALCIUM	PHOSP	IRON	VIT-A NA	K
63G	112G	253G	450MG	450MG	10MG	4333IU NA	K

FOOD CONSUMPTION, NICARAGUA, 1966 (RURAL SAMPLE FINDINGS)

ITEM	% CONSUMING LESS THAN THE RDA	% CONSUMING RDA OR MORE
----	-----	-----
CALORIES	57	43
PROTEINS	40	60
CALCIUM	37	63
IRON	24	76
RETINOL (VITAMIN-A)	94	6
THIAMINE	35	65
RIBOFLAVIN	73	27
NIACIN	78	22
VITAMIN C	59	41

SOURCE: INCAP: EVALUACION NUTRICIONAL DE LA POBLACION DE NICARAGUA, 1966.

NUTRITION

MALNUTRITION IS COMMON IN CHILDREN UNDER 15 YEARS; NUTRITIONALLY BASED ANEMIAS AND AVITAMINOSIS ASSOCIATED WITH OTHER SYMPTOMS OF MALNUTRITION ARE IMPORTANT CAUSES OF DEATH IN 0-14 YEAR AGE GROUP. GOITER IS ENDEMIC, AFFLICTING NEARLY 1/3 OF POPULATION. HOWEVER, SUBCLINICAL LEVEL OF MALNUTRITION IS LARGER PROBLEM IN THAT IT

RESULTS IN APATHY, DECREASED PRODUCTIVITY, LOW RESISTANCE TO DISEASE AND MENTAL AND PHYSICAL RETARDATION IN CHILDREN.

MAJOR DEFICIENCIES INCLUDE ANIMAL PROTEIN (MOST PROTEIN DERIVED FROM BEANS), B VITAMINS (RIBOFLAVIN, THIAMINE, NIACIN) AND VITAMIN A. ANEMIA IS COMMON PROBLEM, ESPECIALLY AMONG PREGNANT AND LACTATING WOMEN. POOR NUTRITION EXACERBATED BY SEASONAL FLUCTUATIONS IN SUPPLY OF STAPLES (DIET RESTRICTED TO FOOD IN SEASON) AND GENERAL UNPOPULARITY OF FRUITS AND VEGETABLES. MANY IMPORTANT SOURCES OF PROTEIN (EGGS, POULTRY, MEAT, FISH) ARE RESERVED FOR LOCAL OR EXPORT SALE, OR ARE UNAVAILABLE BECAUSE OF INADEQUATE STORAGE FACILITIES.

DISTRIBUTION OF FOODS IN BOTH QUANTITY AND QUALITY IS NOTICEABLY UNEVEN. VARIETY OF FOODS AND TOTAL CALORIES (2,108) HIGHEST IN URBAN PACIFIC ZONE AREA; ATLANTIC COASTAL REGION MOST DEPRIVED WITH AVERAGE CONSUMPTION 20% LOWER (1,986 CALORIES) THAN IN WESTERN CITIES. APPROXIMATELY 57% OF RURAL POPULATION DO NOT HAVE ADEQUATE CALORIC INTAKE AND 40% DO NOT CONSUME PROTEIN IN ADEQUATE QUANTITY OR QUALITY. AMOUNT AND QUALITY OF FOOD CONSUMED DETERMINED BY: AVAILABILITY AND RELATIVE PRICES; FAMILY INCOME; FOOD HABITS; LEVEL OF EDUCATION AND AVAILABLE INFORMATION ON NUTRITION. STORAGE IS ALSO A PROBLEM AS MOST HOMES HAVE NO COLD STORAGE. LOSS OF STORED STAPLES ESTIMATED AT 25-49% (1972) DUE TO INSECTS AND RODENTS.

SUMMARY OF CONSUMPTION STUDIES, NICARAGUA
GRAMS/PERSON/DAY

STUDY	1966 INCAP		1974 INFONAC	1974 UNASEC NATIONAL AVERAGE	GAFICA 1970 NATIONAL APPARENT AVG. AVAILABLE
	RURAL	URBAN	URBAN		
FOOD					
MILK PRODUCTS	243	377	312	212-294	154
EGGS	12	21	20	23	15
MEAT	58	90	83	62	66
BEANS	72	50	66	69	66
VEGETABLES	27	74	18	--	37
FRUITS	41	52	43	--	104
BANANA & PLAN.	72	75	63	--	106
ROOTS	33	24	22	--	80
TORT. (CORN)	199	164	161	86	219
BREAD (WHEAT)	28	51	59	--	28
OTHER CEREALS	28	33	12	--	10
SUGAR	58	63	91	102	89

STUDY	1966 INCAP		1974 INFONAC	1974 UNASEC NATIONAL AVERAGE	GAFICA 1970 NATIONAL APPARENT AVG. AVAILABLE
	RURAL	URBAN	URBAN		
FOOD					
FATS	19	29	42	12	24
RICE	54	80	90	59	58
CALORIES	1,986	2,108	2,579	2,141	2,379
PROTEINS	64.4	72.2	74.8	73.2	64.2

SOURCES: INCAP, NICARAGUA UPDATE, 1975

1/ INCAP STUDIES IN CENTRAL AMERICA HAVE SHOWN WIDE VARIATION IN PROTEIN WHICH IN MANY CASES RESULTS IN A SIGNIFICANT LOWERING OF UTILIZABLE PROTEIN.

APPARENT CONSUMPTION OF FOODS, NICARAGUA, 1970
BY INCOME GROUP

FOOD PRODUCTS	CONSUMPTION	LOWER STRATUM (50%)	MIDDLE STRATUM (30%)	UPPER STRATUM (15%)	VERY HIGH STRATUM (5%)	TOTAL
	GRAMS PER PERSON PER DAY					
1. WHOLE MILK		81	141	196	254	125
2. SKIM MILK		6	8	10	13	8
3. CHEESE		15	23	30	38	21
4. MEAT, FISH, SHELLFISH		38	73	113	170	66
5. EGGS		6	14	29	63	15
6. BEANS		57	70	82	94	66
7. FRESH VEGETABLES		17	45	70	96	37
8. FRUITS		74	114	151	189	104
9. BANANAS AND PLANTAINS		122	100	80	59	106
10. ROOTS AND TUBERS		89	76	65	52	80
11. TORTILLAS (CORN)		164	288	272	205	219
12. RICE		42	64	85	106	58
13. BREAD (WHEAT)		14	28	53	105	28
14. OTHER CEREALS		16	6	2	1	10
15. SUGAR		66	99	129	161	89
16. FATS		14	24	41	70	24

FOOD PRODUCTS \ PER DAY	CONSUMPTION GRAMS PER PERSON				VERY HIGH STRATUM (5%)	TOTAL
	LOWER STRATUM (50%)	MIDDLE STRATUM (30%)	UPPER STRATUM (15%)			
INGESTED CALORIES	1,767	2,703	3,255	3,931	2,379	
INGESTED PROTEINS	46.6	72.5	90.5	111.9	64.2	
% ADEQUATENESS OF CALORIES*	84	128	154	186	113	
% ADEQUATENESS OF PROTEINS**	85	132	206	255	117	

* TOTAL POPULATION

** BASED ON REQUIREMENTS AND RECOMMENDATIONS

SOURCE: INCAP, UNPUBLISHED DATA ON PRODUCTION FIGURES WITH GAFICA, 1970 PROJECTIONS (13).

FOOD & DRINK

STAPLES: CORN, BEANS, RICE. CORN (MASA) AND WHEAT FLOUR, BAKED AS TORTILLAS AND BREAD RESPECTIVELY.

COOKING FAT: COTTONSEED OIL.

MEAT: FRESH BEEF, PORK, RABBIT.

POULTRY: CHICKENS, DUCKS.

MILK: SMALL AMOUNTS OF WHOLE PASTURIZED COW'S MILK AND OF HARD AND SOFT CHEESES.

FISH: FRESH, IN COASTAL AREAS ONLY.

VEGETABLES: FRESH-CARROTS, BEANS, RADISHES, CABBAGE, TOMATOES, POTATOES, YUCA, GREENS (QUEQUISQUA), CORN.

FRUITS: FRESH-MANGOES, ORANGES, "JOCOTES", BANANAS, PINEAPPLE, MANDARINS, MELONS, "GUYABA," LEMONS.

OTHER: EGGS, GAME-RABBIT, DEER, IGUANA, TURTLE, GUARDATINAJA.

BEVERAGES: COFFEE, CHOCOLATE, CORN-BASED ATOLES, SODAS. RARELY MILK.

MEALS

BREAKFAST: COFFEE OR CHOCOLATE, BREAD, RICE AND BEANS ("GALLO PINTO")

LUNCH: RICE, BEANS, PLANTAIN OR TORTILLAS; PINOLILLO (DRINK MADE OF TOASTED CORN AND CACAO).

DINNER: COFFEE, TORTILLAS, CHEESE, BEANS.

LOCAL FOODS: (CORN-BASED), GREEN EARS (CHILOTES, ELOTES); MASA-FLOUR MADE FROM DRY CORN, USED IN TORTILLAS, TAMALES, NACATAMALES (LATTER TWO W/MEAT, VEGETABLES) ROSQUILLAS-WITH CHEESE. DRINKS-ATOL, ATOLILLO, FROM MASA; PINOL; PINOLILLO, FROM TOASTED CORN; CHICHA, FERMENTED CORN AND SUGAR; CUSUSA-DISTILLATION OF CHICHA.

LUXURY ADDITIONS: EGGS (2-3 WEEKLY), MEAT AND POULTRY.

UTENSILS

FRAME OF POLES OVER HEARTH FOR STORING CHEESE, SALT, GRAINS

BUNQUES - LARGE BOARD BOXES FOR STORING CORN, SORGHUM, BEANS

GRINDING STONE FOR MASA.

MORTAR (PILON) FOR POUNDING RICE, SORGHUM, COFFEE.

BRICK, STONE, CLAY KEROSENE OR WOOD BURNING STOVES; PROPANE STOVES INSIDE HOUSE.

2-4 LITER CLAY OR METAL COOKING VESSELS.

PLASTIC, METAL, GLASS, CLAY PLATES, GLASSES AND CUPS AND HUACALES; FORKS, KNIVES, SPOONS.

HOUSING

HEAVY FLOW OF RURAL TO URBAN MIGRATION HAS CAUSED SEVERE HOUSING SHORTAGE IN URBAN AREAS. THIS, COMBINED WITH THE DELAYS IN RECONSTRUCTION AFTER THE 1972 EARTHQUAKE, HAS CREATED LARGE SLUM AREAS

OF MAKE-SHIFT DWELLINGS IN MANAGUA. IN REBUILDING MANAGUA, PLANNERS HAVE TRIED TO AVOID THE HEAVY CONCENTRATION OF BUILDINGS WHICH CONTRIBUTED TO LARGE-SCALE DAMAGE. CONSTRUCTION HAS BEEN SPREAD OUT OVER A GREATER AREA: ACTIVE URBAN LAND HAS ALMOST TRIPLED FROM 13.2 SQ MILES (1972) TO 36 SQ MILES (1976).

POST-EATHQUAKE CONSTRUCTION MATERIALS HAVE CHANGED FROM WOODEN WALLS AND BEAMS TO CEMENT OR CINDER BLOCK WITH ANGLE IRONS SET IN CONCRETE; ASBESTOS ROOFS ARE REPLACING CLAY TILES. REBUILDING PROCESS HAS BEEN SLOW AND OFTEN SUB-STANDARD: POOR DRAINAGE, INADEQUATE GARBAGE COLLECTION AND A LACK OF FIRE PROTECTION ARE AMONG THE PROBLEMS. ONLY 6 CITIES HAVE PUBLIC SEWAGE SYSTEM; 38% OF DWELLINGS HAVE ACCESS TO PIPED WATER, 41% TO ELECTRICITY (7% OF RURAL).

OVERVIEW OF ECONOMY

GNP (1977) US \$2,153 MILLION AT MARKET PRICES; GNP PER CAPITA (1976) US \$750; GDP HAS GROWN 6.3% PER YEAR FROM 1972-77 AS COMPARED TO 3.2% FOR 1970-72. SINCE 1972 EARTHQUAKE, ECONOMIC DEVELOPMENT HAS BEEN RAPID BUT UNEVEN. INCREASED POPULATION GROWTH HAS OFFSET ECONOMIC GROWTH AND THE YOUNGER URBAN POPULATION IS PLACING GREATER BURDENS ON SOCIAL SERVICES AND THE ECONOMIC SYSTEM. INCOME DISTRIBUTION IS HIGHLY SKEWED: IN MANAGUA 5% OF THE POPULATION RECEIVES 27% OF INCOME, 17% RECEIVE ABOUT 50%, WHILE THE POOREST 60% RECEIVE 28%; IN RURAL AREAS THE HIGHEST 5% OF THE POPULATION RECEIVES 42% OF INCOME WHILE LOWEST 60% GET ONLY 19%. MALES EARN 40% MORE THAN FEMALES AND UNDEREMPLOYMENT IS BETWEEN 15-29%.

AGRICULTURE CONTRIBUTES DIRECTLY 23% OF GDP (1976) AND ALMOST 3/4THS OF MERCHANDISE EXPORTS (COTTON, COFFEE AND BEEF); SUPPLIES MOST OF COUNTRY'S FOOD REQUIREMENTS AND MUCH INDIRECT INPUT TO INDUSTRY; EMPLOYS 46% OF LABOR FORCE. RECENT AGRICULTURAL DEVELOPMENT HAS CONCENTRATED ON EXPANSION OF AREA UNDER CULTIVATION AND PASTURES RATHER THAN ON INCREASED PRODUCTIVITY PER UNIT. CREDIT EXTENSION TO SMALL FARMERS (ABOUT 7,500 BY 1977) BY THE INSTITUTE OF NATIONAL RURAL WELFARE (INVIERNO) HAS IMPROVED OUTPUT AND LIVING CONDITIONS OF SOME RURAL POOR.

MANUFACTURING ACCOUNTS FOR SAME SHARE OF GDP (28% IN 1976) AS AGRICULTURE BUT EMPLOYS ONLY 15% OF LABOR FORCE AND MAKES UP ONLY 25-27% OF EXPORT EARNINGS. INDUSTRIAL DEVELOPMENT HAS BEEN SLOWER IN THE 1970'S THAN THE 1960'S MAINLY DUE TO THE SATURATION OF THE CENTRAL AMERICAN COMMON MARKET (CACM) FOR HIGHER VALUE-ADDED INDUSTRIAL EXPORTS SUCH AS TEXTILES, CLOTHING AND METAL PRODUCTS. LITTLE HAS BEEN DONE TO DEVELOP A MARKET FOR NICARAGUAN INDUSTRIAL EXPORTS OUTSIDE CACM AND THE TARIFF STRUCTURE, WHICH IS ORIENTED TOWARD DOMESTIC AND REGIONAL MARKETS, HAS ALSO DISCOURAGED THE DEVELOPMENT OF NON-TRADITIONAL EXPORT PRODUCT.

CONCENTRATION OF EXPORTS IN A FEW PRIMARY COMMODITIES (COTTON, COFFEE AND BEEF), WHICH MAKE UP 1/2 OF MERCHANDISE EXPORTS, AND THE FACT THAT EXPORTS ACCOUNT FOR 1/3 OF GDP, MAKE ECONOMY VULNERABLE TO FLUCTUATIONS IN WEATHER AND EXTERNAL MARKETS. DEVELOPMENT OF A BROADER RANGE OF INDUSTRIAL AND AGRICULTURAL COMMODITIES IS NEEDED TO REDUCE DEPENDENCY ON EXTERNAL FACTORS.

1979 STATUS

THE CIVIL WAR WHICH RESULTED IN THE OVERTHROW OF THE SOMOZA REGIME IN JULY 1979 HAS LEFT THE COUNTRY AT AN ECONOMIC STANDSTILL. FACED WITH BANKRUPTCY AND US \$1.5 BILLION IN FOREIGN DEBT, THE NEW GOVERNMENT HAS DECIDED TO ACCEPT IMF AID. A \$20 MILLION INTER-AMERICAN DEVELOPMENT BANK LOAN, HAS ALREADY BEEN RECEIVED AND APPEALS FOR FUNDS ARE BEING MADE TO THE US, FRANCE, WEST GERMANY AND THE OPEC COUNTRIES. A UN REPORT PREDICTS THE GDP FOR 1979 WILL DROP ABOUT 25%. IN ORDER TO GET AGRICULTURAL PRODUCTION MOVING AGAIN, AND ALLOW EXPORT INDUSTRIES TO PAY FOR CRUCIAL IMPORTED MATERIALS, THE NICARAGUAN CENTRAL BANK HAS BEGUN MAKING LOANS TO THE PRIVATE SECTOR.

GNP (1970)

	(US \$ MILLION)	ANNUAL GROWTH RATE OF 1970-77	(% CONSTANT PRICES)
	-----	-----	-----
GNP	2,153 (MARKET PRICES)	5.6	6.1
GROSS DOMESTIC INVESTMENT	546	9.0	42.1
GROSS NATIONAL SAVING	357	6.0	22.8
ACCOUNT BALANCE	189	-	-
EXPORTS	742	5.6	-3.0
IMPORTS	869	6.5	27.3

SOURCE: WORLD BANK

ECONOMICALLY ACTIVE POPULATION

	1974	1975	1976*
	-----	-----	-----
AGRICULTURE, HUNTING, FISHING	307,417	313,565	315,127
MINING & QUARRYING	4,144	5,021	5,146
MANUFACTURING	61,849	62,864	65,578
CONSTRUCTION	24,243	27,785	29,637
ELECTRICITY, WATER & SANITATION	3,896	4,948	5,216
COMMERCE	60,745	74,935	83,622

TRANSPORT, STORAGE & COMMUNICATIONS	21,248	22,075	28,960
OTHER SERVICES	124,216	131,945	137,458
UNPSECIFIED ACTIVITIES	16,874	11,545	12,661
TOTAL	624,632	654,683	683,405

* PROVISIONAL

SOURCE: EUROPA

BALANCE OF PAYMENTS

BALANCE OF PAYMENT DEFICITS SINCE THE 1972 EARTHQUAKE HAVE BEEN ALMOST 4 TIMES HIGHER (9.3% OF GDP 1973-77), THAN THOSE DURING 1970-72 (2.5% OF GDP), DUE MAINLY TO INCREASES IN IMPORTS NEEDED FOR RECONSTRUCTION. ECONOMIC MISMANAGEMENT UNDER THE SOMOZA REGIME, AND THE EFFECTS OF A YEAR OF CIVIL STRIFE, HAS LEFT NICARAGUA IN ECONOMIC CHAOS; DEFICIT LEVELS WILL CONTINUE TO INCREASE AS THE NEW GOVERNMENT ATTEMPTS TO STABILIZE THE ECONOMY AND BEGIN RECONSTRUCTION WORK.

BALANCE OF TRADE (US \$ MILLION)

	1970	1971	1972	1973	1974	1975	1976	1977*
MERCHANDISE EXPORTS F.O.B.	177.8	186.5	248.6	277.5	379.6	374.9	541.2	634.7
MERCHANDISE IMPORTS F.O.B.	177.7	189.5	205.0	326.2	540.2	482.2	496.2	704.0
TRADE BALANCE	0.1	-3.0	43.6	-48.7	-160.6	-107.3	45.0	-69.3

* PRELIMINARY

SOURCE: WORLD BANK

IMPORTS

IN 1976, THE SHARE OF IMPORTS IN THE GDP HAD ALMOST RETURNED TO PRE-EARTHQUAKE LEVELS, HOWEVER, IN 1977 IT ROSE AGAIN DUE TO LARGE GOVERNMENT IMPORTS OF MACHINERY AND EQUIPMENT, AND INCREASED PRIVATE SECTOR DEMAND FOR IMPORTS WHICH WENT UNCHECKED BY GOVERNMENT CONTROLS (EITHER INCREASED TAXATION OR LIMITED CREDIT).

IMPORTS 1971-77 (MILLION US \$)

	1971	1972	1973	1974	1975	1976	1977 ¹
	-----	-----	-----	-----	-----	-----	-----
CURRENT US\$							
	-----	-----	-----	-----	-----	-----	-----
FOOD	11.6	14.3	24.7	21.4	20.6	24.3	33.3
OTHER CONSUMER GOODS	52.8	55.8	66.5	104.6	101.3	118.0	144.0
PETROLEUM, OIL, LUBRICANTS	26.1	15.5	22.9	59.3	72.9	73.3	103.0
INTERMEDIATE GOODS	59.1	77.5	116.4	217.4	174.8	171.9	252.4
CAPITAL GOODS	60.8	55.4	96.5	159.0	147.3	144.4	225.3
TOTAL GOODS (C.I.F.)	210.4	218.5	327.0	561.7	516.9	531.9	758.0
-----	-----	-----	-----	-----	-----	-----	-----
NON-FACTOR SERVICES ²	30.4	49.5	98.0	103.3	86.8	95.1	110.7
TOTAL GDS AND NFS	240.8	268.0	425.0	665.0	603.7	627.0	868.7
-----	-----	-----	-----	-----	-----	-----	-----
CONSTANT 1975 US\$							
	-----	-----	-----	-----	-----	-----	-----
FOOD	13.6	16.9	26.0	18.8	20.6	21.9	27.4
OTHER CONSUMER GOODS	94.2	91.6	92.0	118.2	101.3	116.3	135.0
PETROLEUM, OIL, LUBRICANTS	73.9	43.8	51.3	65.4	72.9	69.3	88.0
INTERMEDIATE GOODS	105.4	127.0	160.8	234.1	174.8	169.3	224.2
CAPITAL GOODS	108.2	90.7	133.5	179.7	147.3	142.2	204.5
TOTAL GOODS (C.I.F.)	395.3	370.0	463.6	616.2	516.9	519.0	682.1
-----	-----	-----	-----	-----	-----	-----	-----

	1971	1972	1973	1974	1975	1976	1977 ¹
	-----	-----	-----	-----	-----	-----	-----
NON-FACTOR SERVICES ²	54.2	81.1	135.5	116.7	86.8	93.7	101.8
TOTAL GDS AND NFS	429.2	439.3	587.8	751.4	603.7	617.7	783.9
-----	-----	-----	-----	-----	-----	-----	-----

¹ PRELIMINARY ESTIMATE

² EXCLUDE FREIGHT AND INSURANCE

SOURCE: CENTRAL BANK AND MISSION ESTIMATES

EXPORTS

WEAK INTERNAL AND EXTERNAL DEMAND HAS HAD DISCOURAGING EFFECT ON INVESTMENT IN EXPORT SECTORS, PARTICULARLY INDUSTRY, WHERE NO NEW EXPORT PRODUCTS HAVE BEEN INTRODUCED. AGRICULTURAL ITEMS CONTRIBUTE LARGEST SHARE OF EXPORT EARNINGS WITH COTTON AND COFFEE ACCOUNTING FOR 55% OF EXPORT REVENUES IN 1977. DIVERSIFICATION OF EXPORTS IS NEEDED FOR GREATER ECONOMIC INDEPENDENCE; OTHER PRODUCT POSSIBILITIES FOR EXPORT OUTSIDE CACM INCLUDE CANNED AND FROZEN FRUITS AND VEGETABLES, CLOTHING, LEATHER AND LEATHER PRODUCTS.

STRUCTURE OF EXPORTS OF MANUFACTURED PRODUCTS (%)

	1970	1976 ¹
	-----	-----
FOOD PRODUCTS ²	21.4	30.3
TOBACCO	0.9	1.6
TEXTILES	11.6	10.4
CLOTHING, FOOTWEAR	5.9	3.4
LEATHER	2.3	1.1
WOOD PRODUCTS	7.6	9.0
FURNITURE	1.7	0.5
PAPER AND PRODUCTS	0.7	0.5
CHEMICAL PRODUCTS	24.3	28.0
REFINED PETROLEUM	0.4	1.2
RUBBER	1.1	0.5
NON-METALLIC MINERALS	3.3	3.2
METAL PRODUCTS	15.7	6.9
MACHINERY AND ELECTRICAL APPLIANCES	1.1	1.6

	1970 -----	1976 ¹ -----
OTHER	2.0	1.8
TOTAL	100.0	100.0
GROSS VALUE IN MILLIONS OF 1975 US\$	(92.4)	(141.4)

¹ PRELIMINARY

² EXCLUDES BEEF, SUGAR AND SHRIMP

SOURCE: WORLD BANK

SEE ALSO AGRICULTURAL EXPORTS

PRINCIPLE TRADE PARTNERS

IMPORTS: USA, JAPAN, COSTA RICA, GUATEMALA, FEDERAL REPUBLIC OF GERMANY.

EXPORTS: USA, JAPAN, COSTA RICA, FEDERAL REPUBLIC OF GERMANY.

OVERVIEW OF AGRICULTURE

COUNTRY CAN BE DIVIDED INTO 3 AGRICULTURAL ZONES ON BASIS OF SOIL TYPE AND RAINFALL AMOUNT AND DISTRIBUTION. PACIFIC ZONE HAS RICH VOLCANIC SOILS AND A WELL-DEFINED RAINY SEASON (MAY-NOVEMBER) AVERAGING 1,500-2,500 MM, WITH MARKED ANNUAL VARIATION. SMALL-SCALE FARMS GROW CORN, BEANS AND RICE FOR DOMESTIC CONSUMPTION WHILE LARGE-SCALE EXPORT-ORIENTED FARMS SPECIALIZE IN COFFEE, SUGARCANE AND LIVESTOCK FATTENING. CENTRAL ZONE HAS POORER LATERITIC SOILS WITH EXCEPTION OF ALLUVIAL VALLEYS; RAINFALL RANGES BETWEEN 500-2,000 MM ANNUALLY. MAJOR AGRICULTURAL PRODUCTS ARE COFFEE AND LIVESTOCK. ATLANTIC ZONE HAS RELATIVELY POOR SOILS AND HEAVY RAINFALL (2,500-6,000 MM) MAKING IT POORLY SUITED FOR AGRICULTURE; HOWEVER, THERE IS POTENTIAL FOR STOCKRAISING AND FORESTRY.

PRODUCTION DIVIDED INTO TWO DIFFERENT SECTORS. TRADITIONAL SECTOR COMPRISES OVER 50,000 FARMS OF 7 HECTARES OR LESS AND PROVIDES MAIN BUT OFTEN INADEQUATE SUPPORT OF ONE-THIRD OF RURAL POPULATION. CORN, BEANS, RAINFED RICE AND SORGHUM ARE MAJOR CROPS. THESE ARE SUPPLEMENTED BY COFFEE GROWING, LIVESTOCK RAISING AND WAGE LABOR AT HARVEST.

SECURITY OF TENURE IS PROBLEM FOR SMALL FARMER, ESPECIALLY IN PACIFIC ZONE. MODERN INPUTS (CREDIT, TECHNICAL ASSISTANCE, IMPROVED SEED) LACKING; THUS, YIELDS ESSENTIALLY UNCHANGED SINCE 1950. LARGE-SCALE EXPORT-ORIENTED FARMS ARE MORE EFFICIENT; BETTER LAND AND MODERN INPUTS RESULT IN YIELDS AND PRODUCTION COSTS COMPETITIVE ON WORLD COMMODITY MARKETS. PRIMARY PRODUCTS ARE COTTON, COFFEE, SUGAR CANE AND BEEF CATTLE; LESSER CROPS INCLUDE TOBACCO, SESAME, COTTONSEED AND BANANAS.

AT PRESENT MOST EXPORTS UNPROCESSED, BUT AGRICULTURAL INDUSTRIES PRODUCING BONELESS BEEF AND COTTONSEED DERIVATIVES ARE BEING DEVELOPED. SECTOR SUPPLIES ABOUT 1/3 OF INDUSTRY'S RAW MATERIALS.

AREA UNDER CULTIVATION FOR MAIN CROPS HAS INCREASED AT AVERAGE RATE OF 4.5% PER YEAR SINCE 1970, HOWEVER, MUCH FLUCTUATION IS SEEN IN GROWTH RATE, DUE TO CHANGES IN INTERNATIONAL PRICES: FOR EXAMPLE, WHEN WORLD PRICES DROPPED IN 1975 FOR RICE AND COTTON, THE LAND AREA PLANTED IN THESE CROPS FELL 10%. YIELDS WERE ALSO POOR IN 1974/75 AND 1976/77 BECAUSE OF DROUGHT. COFFEE YIELDS (85,000 HA UNDER CULTIVATION) HAVE IMPROVED, BUT THEY ARE STILL AMONG THE LOWEST IN CENTRAL AMERICA. DURING 1976/77, FAVORABLE PRICES AND EXPANSION OF CREDIT ALLOWED MORE FERTILIZER USE AND IMPROVED FARMING PRACTICES, THUS INCREASING YIELDS.

1979 STATUS

AGRICULTURAL STAGNATION DUE TO NEGLECT BY DEPOSED GOVERNMENT AND ENSUING CIVIL CONFLICT; 1979 HARVESTS EXPECTED TO BE MINIMAL. MASSIVE AIRLIFTS OF FOOD IN PROGRESS, BEING DISTRIBUTED BY THE INTERNATIONAL RED CROSS. THERE IS A SHORTAGE OF MECHANIZED EQUIPMENT AND TRACTORS TO RUN BIG FARMS AS MANY WERE TAKEN FOR MILITARY USE.

PLANTING AND HARVESTING SEASONS

COMMODITY	PLANTING SEASON	HARVESTING SEASON
BEVERAGES:		
CACAO.....	---	OCTOBER-NOVEMBER JANUARY-MARCH
COFFEE.....	---	NOVEMBER-FEBRUARY
CEREALS AND GRAINS:		
CORN:		
FIRST CROP.....	MAY	AUGUST-SEPTEMBER
SECOND CROP.....	SEPTEMBER	DECEMBER-JANUARY
RICE.....	JUNE-JULY	NOVEMBER-FEBRUARY
FEEDSTUFFS:		
SORGHUM.....	SEPTEMBER-OCTOBER	DECEMBER-JANUARY
FIBERS:		
COTTON.....	JULY-AUGUST	DECEMBER-FEBRUARY
FRUITS:		
BANANAS.....	---	THROUGHOUT YEAR
PINEAPPLES.....	JULY-AUGUST	MARCH-JUNE
OILSEEDS:		
PEANUTS.....	JUNE-AUGUST	NOVEMBER-JANUARY
SEASAME:		
EARLY CROP.....	JUNE	AUGUST
MAIN CROP.....	SEPTEMBER	DECEMBER-FEBRUARY
SUGARCANE.....	MAY-JUNE	DECEMBER-MARCH

COMMODITY	PLANTING SEASON	HARVESTING SEASON
VEGETABLES:		
BEANS:		
FIRST CROP.....	MAY-JUNE	AUGUST
SECOND CROP.....	AUGUST-SEPTEMBER	DECEMBER-JANUARY
CABBAGE.....	THROUGHOUT YEAR	THROUGHOUT YEAR
ONIONS.....	NOVEMBER	FEBRUARY
POTATOES:		
FIRST CROP.....	MAY	AUGUST
SECOND CROP.....	NOVEMBER	FEBRUARY

AREA, PRODUCTION AND YIELD OF MAJOR CROPS, 1960/61-1976/77
(CROP YEAR)

		1971/ 1972	1972/ 1973	1973/ 1974	1974/ 1975	1975/ 1976	1976/ 1977 ¹
		-----	-----	-----	-----	-----	-----
COTTON:	AREA HARVESTED	156.1	210.9	259.4	254.4	204.6	283.0
	PRODUCTION	2231.4	2303.7	3173.7	2670.0	2396.8	2557.0
	YIELD	14.3	10.9	12.2	10.5	11.7	9.0
SEASAME:	AREA HARVESTED	11.0	7.3	13.0	10.0	12.0	13.0
	PRODUCTION	101.2	48.1	104.6	84.0	120.0	-
	YIELD	9.2	6.6	8.0	8.4	10.0	-
RICE:	AREA HARVESTED	48.3	42.6	35.6	46.8	42.2	30.0
	PRODUCTION	1183.8	1060.6	1121.7	1469.3	1223.8	825.0
	YIELD	24.5	24.9	31.5	31.4	29.0	27.5
COFFEE:	AREA HARVESTED	118.4	118.6	118.9	119.0	120.0	120.0
	PRODUCTION	913.3	762.5	797.7	890.7	1068.2	1287.5
	YIELD	7.7	6.4	6.7	7.5	8.9	10.7
SUGARCANE:	AREA HARVESTED	44.0	43.1	44.6	51.5	58.7	59.6
	PRODUCTION (38650.0)	(35066.0)	39132.0	(42850.2)	58208.2	(54992.0)	
	YIELD	878.4	813.6	877.4	890.3	991.6	922.7
BEANS:	AREA HARVESTED	69.5	57.0	67.1	93.0	80.2	96.5
	PRODUCTION	819.0	622.3	742.7	1012.7	962.4	1177.3
	YIELD	11.8	10.9	11.1	10.9	12.0	12.2
CORN:	AREA HARVESTED	294.4	244.4	292.7	374.0	298.3	323.8
	PRODUCTION	4042.5	3171.0	4152.8	4414.0	4176.2	4371.3
	YIELD	13.7	13.0	14.2	11.8	14.0	13.5

SORGHUM:	AREA HARVESTED	61.7	54.0	59.8	79.3	85.4	80.0
	PRODUCTION	1004.3	820.7	961.0	1127.6	1366.4	1200.0
	YIELD	16.3	15.2	16.1	14.2	16.0	15.0
TOBACCO:	AREA HARVESTED	1678	1417	1894	2431	2600	3000
	PRODUCTION	44420	39278	52954	67700	66000	-
	YIELD	26.5	27.7	28.0	27.8	25.4	-
TOTAL AREA UNDER MAJOR TEMPORARY CROPS		686.7	660.6	774.1	911.4	784.0	888.9

¹ ESTIMATE

SOURCE: CENTRAL BANK AND MISSION ESTIMATES

LIVESTOCK - BEEF AND BEEF PRODUCTS ARE MAJOR EXPORT, 2,600 CATTLE (1976); 66,000 METRIC TONS OF BEEF AND VEAL PRODUCTS (1976).

FISHING - 18,400 METRIC TONS IN 1975.

IMPORTS

SEE IMPORTS IN ECONOMIC SECTION

EXPORTS

EXPORTS VALUE AND VOLUME, 1972-77
(VALUE IN MILLION US\$ - VOLUME IN THOUSAND UNITS)

	1972	1973	1974	1975	1976	1977 ¹
	----	----	----	----	----	----
COTTON - VALUE	62.9	63.2	135.9	95.6	130.6	150.4
VOLUME QQ	2211.0	2164.0	2868.0	2881.0	2455.0	2531.0
UNIT VALUE \$	28.4	29.2	47.4	33.2	53.2	59.4

	1972	1973	1974	1975	1976	1977 ¹
	-----	-----	-----	-----	-----	-----
COFFEE - VALUE	33.0	44.4	46.1	48.1	119.4	198.8
VOLUME QQ	714.0	811.0	703.0	880.0	1143.0	1075.0
UNIT VALUE \$	46.2	54.7	65.9	54.7	104.5	184.9
SUGAR - VALUE	15.2	13.5	12.3	42.6	52.8	27.8
VOLUME QQ	2168.0	1790.0	1461.0	1964.0	3239.0	2157.0
UNIT VALUE \$	7.0	7.5	8.4	21.7	16.3	12.9
BEEF - VALUE	38.3	44.5	21.9	27.0	37.6	35.2
VOLUME QQ	65.2	57.4	34.6	47.7	57.4	55.0
UNIT VALUE \$	0.59	0.78	0.63	0.57	0.66	0.64
SHRIMP - VALUE	8.7	7.2	9.7	14.9	19.7	22.0
VOLUME QQ	8.6	8.1	8.3	9.4	10.0	12.0
UNIT VALUE \$	1.01	0.89	1.17	1.59	1.97	1.84
OTHER - VALUE	90.5	161.7	153.7	146.7	181.1	200.5
TOTAL MERCHANDISE (F.O.B.)	248.6	277.5	379.6	374.9	541.2	634.7
NON-FACTOR SERVICES	70.4	71.3	71.3	81.2	83.5	107.3
TOTAL EXPORTS	319.0	348.8	450.9	456.1	624.7	742.0

¹PRELIMINARY ESTIMATE

SOURCE: CENTRAL BANK AND MISSION ESTIMATES



Base 503292 3-77

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CLIMATE

CLIMATE IS TROPICAL EXCEPT FOR SCATTERED HIGH ALTITUDE LOCATIONS IN CENTRAL HIGHLANDS WHICH HAVE MILD (TIERRA TEMPLADA) OR COOL (TIERRA FRIA) WEATHER. WITHIN TROPICAL CLASSIFICATION, 3 TYPES MAY BE DEFINED:

WET TROPICAL - CARIBBEAN PLAIN AND EASTERN SLOPES OF CENTRAL HIGHLANDS. HOT, HUMID WITH NO REAL COOL OR DRY SEASON. OCCASIONAL STORMS DUE TO MIDWINTER INFLUX OF POLAR AIR, LOCALLY CALLED "PAPAGAYOS." RAINFALL 130-250" ANNUALLY, AVERAGING 150".

TROPICAL WET & DRY - WEST OF CONTINENTAL DIVIDE IN CENTRAL HIGHLANDS TO PACIFIC COAST. WESTERN SLOPES OF CORDILLERA AND SIERRAS ARE DRIEST SINCE THEY ARE IN RAIN SHADOW OF TRADE WINDS, WHICH BLOW FROM NE IN WINTER. EFFECT MITIGATED ON EASTERN SLOPES OF CONES AND CORDILLERAS WHICH RECEIVE TRADES' RESIDUAL MOISTURE. IN WEST RAINFALL SOMETIMES AS LOW AS 16" YEARLY, OTHERWISE AVERAGES 60-65"/YEAR ON PACIFIC COAST, 120" IN INTERIOR. TEMPERATURES ARE WARM THROUGHOUT YEAR, AVERAGING 81F; WINTER BRINGS PERIODS OF COOLER WEATHER, LOWER HUMIDITY.

HIGHLANDS - EXTENSIVE AREAS EXIST (AT HIGH ELEVATIONS E.G., JINOTEGA, MATAGALPA,) WHERE MEAN ANNUAL TEMPERATURE IS 70F AND DAILY HIGHS SELDOM REACH 90. YEARROUND HIGH HUMIDITY, RELATIVELY LOWER IN SOUTHERN HIGHLANDS FEB-MAY. ABOVE 5,000', CONTINUOUS HUMIDITY AND COOL TEMPERATURES. RAINS GENTLE BUT PERSISTENT EXCEPT DURING RARE PAPAGAYO STORMS, IN CONTRAST TO MARKED STORMS IN OTHER REGIONS. LOCAL VARIATIONS IN CLIMATE FREQUENT AND PRONOUNCED.

TEMPERATURES*

LOCATION	JAN	MAR	MAY	JUL	OCT	DEC
PACIFIC ZONE						
CHINANDEGA	26.9	29.2	28.9	27.9	27.4	26.8
LEON	27.1	28.2	29.1	27.5	26.7	26.5
MANAGUA	27.6	29.5	29.9	28.5	26.8	26.7
MASAYA	24.1	25.8	26.7	24.9	24.9	24.2
GRANADA	25.5	26.9	28.5	26.4	25.5	25.2
RIVAS	26.0	27.0	28.0	26.4	26.6	25.6

LOCATION	JAN	MAR	MAY	JUL	OCT	DEC
CENTRAL ZONE						
CHONTALES	24.4	26.3	27.2	25.5	25.3	24.0
BOACO	23.4	25.5	26.7	25.0	23.3	23.2
MATAGALPA	23.8	25.5	26.5	25.6	24.9	23.5
JINOTEGA	19.0	20.6	22.3	21.3	21.4	19.2
ESTELI	22.2	24.8	24.5	24.8	24.5	22.2
NUEVA SEGOVIA	22.0	24.0	25.0	24.7	24.6	22.6

ATLANTIC ZONE

RIO SAN JUAN	24.1	25.5	26.5	24.7	25.6	24.3
ZELAYA	23.9	25.5	26.3	25.2	25.4	23.9

*AVERAGE CENTIGRADE TEMPERATURE FOR PERIOD 1969-73

RAINFALL

LOCATION	(IN MM)											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
PACIFIC ZONE												
CHINANDEGA	8	7	8	50	281	213	181	306	269	382	65	18
LEON	2	4	4	18	238	200	117	238	302	273	70	16
MANAGUA	7	2	2	18	179	159	149	269	272	266	67	21
MASAYA	25	7	5	18	241	450	92	323	424	385	79	20
GRANADA	15	2	10	2	164	148	152	269	311	266	99	21
CARAZO	10	3	8	26	177	221	176	116	306	310	86	21
RIVAS	60	12	20	17	170	270	184	231	378	366	149	55

CENTRAL ZONE

CHONTALES	79	27	18	29	121	241	268	258	294	270	114	83
BOACO	55	27	13	23	117	214	252	225	262	232	102	81
MATAGALPA	54	21	21	34	167	227	211	223	275	300	93	68
JINOTEGA	38	23	13	27	139	215	201	228	218	263	112	81
ESTELI	3	2	6	18	170	131	99	159	232	175	38	7
MADRIZ	39	22	18	36	142	132	155	178	233	248	80	50
NUEVA SEGOVIA	31	12	11	31	178	192	181	190	190	183	71	51

LOCATION	(IN MM)											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
ATLANTIC ZONE												
RIO SAN												
JUAN	188	66	45	83	177	313	382	278	346	288	271	200
ZELAYA	190	70	40	63	222	382	671	340	375	275	274	257

LAND FORMS

AREA: 57,000 SQ.MI., OF WHICH RIFT LAKES REPRESENT ABOUT 3,000 SQ.MI. BOUNDED ON N BY EL SALVADOR AND HONDURAS, ON S BY COSTA RICA, WITH 220 MILE PACIFIC COASTLINE AND 340 MILE ATLANTIC COAST.

FOUR SOCIOPOLITICAL REGIONS: 1) WEST, CONSISTING OF PACIFIC HIGHLANDS AND LAKES AND LOWLANDS OF RIFT VALLEY; 2) HIGHLAND FRONTIER, NEW SETTLEMENTS IN N AND W CENTRAL HIGHLANDS; 3) EMPTY LANDS OF EASTERN HIGHLANDS AND MOST OF CARIBBEAN COASTAL PLAIN; 4) EAST, SCATTERED SETTLEMENTS AT RIVER MOUTHS ALONG EAST COAST.

WESTERN COASTAL REGIONS, NORTHERN EXTENSION OF COSTA RICAN HIGHLANDS, ARE OF VOLCANIC ORIGIN. RIFT DEPRESSION, FORMED WHEN LAND SUBSIDED BETWEEN 2 FAULT ZONES, EXTENDS FROM CENTRAL GUATEMALA INTO NORTHERN PANAMA, SEPARATES PACIFIC RANGES FROM CENTRAL HIGHLANDS, THE SOUTHERN EXTENSION OF CENTRAL AMERICAN HIGHLANDS, WHICH BEGIN IN CHIAPAS, MEXICO. RIFT LOWLANDS EXTEND TO PACIFIC COAST N OF LEON. CENTRAL HIGHLANDS SLOPE TOWARD CARIBBEAN, MERGING WITH COASTAL PLAIN. MOST OF RIFT DRAINS INTO CARIBBEAN VIA SAN JUAN RIVER. SEVERAL LARGE PERMANENT RIVERS CUT THROUGH EASTERN COASTAL PLAIN FROM CENTRAL HIGHLANDS. NO SIGNIFICANT STREAMS IN WEST.

GEOLOGIC REGIONS INCLUDE ACTIVE AREA IN WEST COMPRISING NEW VOLCANICS OF COASTAL RANGES AND RIFT VALLEY. OLDER INACTIVE WEATHERED VOLCANICS OF CENTRAL HIGHLANDS RUN AS E-W RIDGES AND VALLEYS, HIGHEST IN NW, TOWARD CARIBBEAN. MISKITO COAST, ALLUVIAL PLAINS AND VALLEYS, SEPARATED BY LOW WATERSHED HILLS, WITH NUMEROUS BAYS, LAGOONS AND SALT MARSHES, HAS HIGH WATER TABLE, WHICH POSES CONSTRUCTION AND CULTIVATION PROBLEMS.

COORDINATES

DEPARTMENT	AREA (KM 2)	LATITUDE NORTH	LATITUDE WEST	ALTITUDE (METERS)
DEPARTAMENTO DE MANAGUA	3,635			
MANAGUA	6	12 09'	86 16'	49.66
EL CARMEN	.4	12 19'	86 12'	60.00
MATEARE	248	12 14'	86 25'	60.00
SAN FRANCISCO DEL CARNICERO	771	12 30'	86 18'	45.00
SAN RAFAEL DEL SUR	386	11 50'	86 50'	100.58
TIPITAPA	1,000	12 11'	86 05'	50.42

NOTE - SIMILAR FIGURES FOR ALL DEPARTMENTS ARE SHOWN IN GON'S PUBLICATION, ANUARIO ESTADISTICO 1973.

LAND USE

TOTAL AREA 41,416,000 HECTARES. 6,513,000 (15.7%) WERE UNDER ANNUAL CROPS, 4,456,000 (10.8%) WERE FALLOW, 1,466,000 (3.5%) WERE UNDER PERMANENT CROPS, 14,795,000 (35.7%) WERE ARTIFICIAL PASTURE, 5,183,000 (12.5%) WERE NATURAL PASTURE, 8,103,000 (19.6%) WERE FORESTED AND 90,000 (2.2%) WERE CLASSIFIED AS OTHER LAND.

ALMOST HALF THE AREA OF FARMS UNDER 7 HECTARES IN SIZE WAS USED FOR ANNUAL CROPS; PERMANENT CROPS AND ARTIFICIAL PASTURES REPRESENTED ABOUT 20% OF FARMS LESS THAN 0.7 HECTARES AND LESS THAN 7.0 HECTARES, RESPECTIVELY. FARMS BETWEEN 7 AND 35 HECTARES HAD 33% OF THIS AREA AS ARTIFICIAL PASTURE AND 26% UNDER ANNUAL CROPS. FARMS BETWEEN 35 AND 350 HECTARES HAD 39% OF LAND AS ARTIFICIAL PASTURES, 16% AS FOREST AND 16% UNDER ANNUAL CROPS; OF FARMS OVER 350 HECTARES, 34% OF AREA WAS UNDER ARTIFICIAL PASTURE AND 26% WAS FORESTED.

CATEGORY	SIZE IN HECTARES					TOTAL
	UNDER 0.7	0.7-7.0	7.0-35	35-350	OVER 350	
TOTAL						
NO OF FARMS	5,164	33,253	27,315	19,435	1,651	88,818
AREA (000 HA)	1.9	88.9	452.8	1,627.6	1,970.4	4,141.6

CATEGORY	SIZE IN HECTARES					TOTAL
	UNDER 0.7	0.7-7.0	7.0-35	35-350	OVER 350	
TITLED						
NO OF FARMS	2,958	14,122	14,941	11,296	1,343	44,660
AREA (000 HA)	1.5	44.0	259.9	1,082.0	1,777.5	3,164.9
UNTITLED						
NO OF FARMS	732	5,146	6,295	4,632	110	16,906
AREA (000 HA)	0.1	14.2	108.0	298.6	104.1	525.0
RENTED						
NO OF FARMS	1,240	12,451	3,663	1,806	141	19,301
AREA (000 HA)	0.3	26.2	41.4	122.0	59.0	248.9
OTHER						
NO OF FARMS	234	1,534	2,416	1,710	57	5,951
AREA (000 HA)	*	4.5	43.5	125.0	29.8	202.8

*LESS THAN 0.1

WATERWAYS

PRINCIPAL RIVERS

EAST-FLOWING, ALL PARTIALLY NAVIGABLE

SAN JUAN
 ESCONDIDO
 GRANDE
 PRINZAPOLCA
 COCO

WEST-FLOWING, INTERMITTENT

NEGRO
 VIEJO

LAKES

HISTORICALLY IMPORTANT FOR LOCAL NAVIGATION. LAKE MANAGUA IS 38 MI LONG, 10-16 MI WIDE; DRAINS VIA 10 MI LONG RIO TIPITAPA INTO LARGER NICARAGUA, 100 MI LONG AND 45 MI WIDE.

MOUNTAINS

COASTAL BLOCK WEST OF RIFT, ALTITUDES TO 3,000', MOST IMPORTANT RANGE IS DIRIAMBÁ HIGHLANDS (LOCALLY, "SIERRAS") BETWEEN MANAGUA AND PACIFIC.

CENTRAL HIGHLANDS RISE N AND E OF RIFT; HEIGHTS UP TO 7,000'; VOLCANIC RIDGES AND PLATEAU TRENDING E-W AS RIDGES ALTERNATING WITH RIVER VALLEYS AS FOLLOWS: RIO COCO, S-SHAPED CORDILLERA ISABELIA, RIO TUMA, CORDILLERA DARIENSE, RIO GRANDE, MONTANAS DE HUAPI, CORDILLERA DE YOLAINA, SAN JUAN.

SEISMICITY

CIRCUMPACIFIC BELT OF SEISMIC ACTIVITY PASSES THROUGH WESTERN NICARAGUA. THE RIFT DEPRESSION IS BOUNDED ON SW AND NE BY ACTIVE FAULT ZONES, TOTAL OFFSET ALONG WHICH HAS BEEN ESTIMATED AS IN EXCESS OF 1,000 METERS. OCCASIONAL VOLCANIC CENTERS HAVE DEVELOPED IN FAULT ZONES, BUT MOST VOLCANISM OCCURS IN NARROW ZONE, PART OF CENTRAL AMERICAN VOLCANIC CHAIN, WHICH RUNS THROUGH MANAGUA. ITS ACTIVITY HAS BEEN CONTINUOUS IN COUNTRY'S RECORDED HISTORY. BOTH LAVA AND PYROCLASTIC ERUPTIONS HAVE OCCURRED. LAST MAJOR ERUPTION WAS THAT OF CERRO NEGRO, 70KM NW OF MANAGUA, IN 1968.

EARTHQUAKES AFFECTED MANAGUA IN 1931, 1968, 1972, AND LEON IN 1898.

VOLCANOES

NAME	HEIGHT	LOCATION	ACTIVITY DATES
----	-----	-----	-----
CERRO NEGRO	3,204	50MI NW OF MANAGUA	1850-52, 1867, 1946, 1960-68, 1971
CONCEPCION	5,106	SE OF MANAGUA	1883-85, 1902-05, 1957
COSIGUINA	5,106	140MI NW OF MANAGUA	1952
EL VIEJO	5,840		1971

<u>NAME</u>	<u>HEIGHT</u>	<u>LOCATION</u>	<u>ACTIVITY DATES</u>
LAS PILAS MOMBACHO		20MI SE OF MANAGUA	1850-52
MOMOTOMBO	4,199	30MI NW OF MANAGUA	1850-52, 1883-85, 1902-05, 1952
NINDIRI		15 MI SE OF MANAGUA	1772
SANTIAGO	1,969	S OF MANAGUA	1902-05(FORMED), 1946, 1965
TELICA	3,409	S OF MANAGUA	1965, 1971

ROAD NETWORK

GOOD NETWORK OF MAIN ROADS LINK MAJOR TOWNS IN PACIFIC REGION (51% OF HIGHWAY SYSTEM IS IN PACIFIC AREA). A 384 KM NORTH-SOUTH STRETCH OF THE PAN-AMERICAN HIGHWAY LINKS MANAGUA WITH THE HONDURAN AND COSTA RICAN FRONTIERS; THE ATLANTIC AND PACIFIC HIGHWAYS CONNECT MANAUGA WITH COASTAL REGIONS. IN 1976, THERE WERE 17,564 KM OF ROADS, 1,552 KM OF WHICH ARE PAVED.

ROAD DISTRIBUTION

AREA	KM
NICARAGUA	12,902.2
PACIFIC ZONE	6,672.7
CHINANDEGA	1,450.1
LEON	1,264.6
MANAGUA	1,280.8
MASAYA	449.1
GRANADA	492.0
CARAZO	963.6
RIVAS	772.5
CENTRAL & NORTHERN ZONE	5,301.7
CHONTALES	817.9
BOACO	773.4
MATAGALPA	1,245.0
JINOTEGA	529.1
ESTELI	797.1
MADRIZ	531.3
NUEVA SEGOVIA	607.4
ATLANTIC ZONE	927.8
RIO SAN JUAN	--
ZELAYA	927.8

VEHICLES

	1973
CARS	18,112
BUSES	2,940
VANS	14,011
TRUCKS	5,075
JEEPS	6,909
MOTORCYCLES & OTHERS	6,553

SURFACE MILES

DISTANCE IN KMS.

ACOYAPA
 237 BELEM
 111 152 BOACO
 96 176 24 CAMOAPA
 292 205 207 231 CHICHIGALPA
 301 214 216 240 13 CHINANDEGA
 402 367 317 341 422 431 CHOLUTECA, HONDURAS
 188 153 103 127 208 217 214 CIUDAD DARIO
 320 233 235 259 32 19 450 236 CORINTO
 203 60 118 142 145 154 333 119 173 DIRIAMBA
 187 50 102 126 163 172 317 103 191 30 DIRIOMO
 307 220 222 246 19 6 437 223 25 160 178 EL VIEJO
 207 172 122 146 227 236 265 51 255 138 122 242 ESQUIPULAS
 249 214 164 188 269 278 153 61 297 180 164 284 ESTELI
 190 57 105 129 166 175 320 106 194 47 17 181 GRANADA
 261 226 176 200 281 290 257 73 309 192 176 296 JINOTECA
 199 56 114 138 149 158 329 115 177 4 26 164 JINOTEPI
 34 203 77 62 258 267 368 154 286 169 153 273 JUIGALPA
 43 268 142 127 323 332 433 219 351 234 218 338 LA LIBERTAD
 252 165 167 191 62 71 382 168 90 105 123 77 LA PAZ CENTRO
 225 190 140 164 245 254 177 37 273 156 140 260 LA TRINIDAD

SURFACE MILES (CONT'D)

262	175	177	201	30	39	392	178	58	115	133	45	LEON
172	93	87	111	120	129	302	88	148	43	43	135	MANAGUA
174	63	89	113	150	159	302	90	178	29	13	165	MASAYA
227	192	142	166	247	256	223	39	275	158	142	262	MATAGALPA
215	134	130	154	151	160	345	131	179	74	86	166	NAGAROTE
205	32	120	144	173	182	335	121	201	28	18	188	NANDAIME
324	289	239	263	344	353	226	236	372	255	239	359	OCOTAL
282	45	197	221	250	259	412	198	278	105	95	265	PENAS BLANCAS
296	261	211	235	316	325	116	108	344	227	211	331	PUEBLO NUEVO
243	156	158	182	69	78	373	159	97	96	114	84	PUERTO SOMOZA
247	10	162	186	215	224	377	163	243	70	60	230	RIVAS
293	258	208	232	313	322	173	105	341	224	208	328	SAN JUAN DE LIMAY
275	38	190	214	243	252	405	191	271	98	88	258	SAN JUAN DEL SUR
192	63	107	131	146	155	322	108	174	11	19	161	SAN MARCOS
219	96	134	158	135	144	349	135	163	36	56	150	SAN RAFAEL DEL SUR
61	286	160	145	341	350	451	237	369	252	236	356	STO. DOMINGO
21	246	120	105	301	310	411	197	329	212	196	316	STO. TOMAS
203	168	118	142	223	232	199	15	251	134	118	238	SEBACO
316	281	231	255	336	345	86	128	364	247	231	351	SOMOTO
489	454	404	428	509	518	140	301	537	422	404	524	TEGUCIGALPA, HONDURAS
270	183	185	209	22	31	400	186	50	123	141	37	TELICA
150	87	65	89	142	151	280	66	170	53	37	157	TIPITAPA
262	227	177	201	282	291	258	74	310	193	177	297	TUMA
305	270	220	244	325	334	97	117	353	236	220	340	YALAGUINA

ESQUIPULAS

112	ESTELI											
125	167 GRANADA											
124	104 179 JINOTEGA											
134	176 43 188 JINOTEPE											
173	215 156 227 165 JUIGALPA											
238	280 221 292 230 65 LA LIBERTAD											
187	229 126 241 109 218 283 LA PAZ CENTRO											
88	24 143 80 152 191 256 205 LA TRINIDAD											
197	239 136 251 119 228 293 32 215 LEON											
107	149 46 161 47 138 203 80 125 90 MANAGUA											
109	151 20 163 25 140 205 110 127 120 30 MASAYA											
90	70 141 34 154 193 258 207 46 217 127 129 MATAGALPA											
150	192 89 204 78 181 246 111 168 121 43 73 NAGAROTE											
140	182 25 194 24 171 236 133 158 143 61 31 NANDAIME											
187	75 242 179 251 290 355 304 99 314 224 226 OCOTAL											
217	259 102 271 101 248 313 210 235 220 138 108 PENAS BLANCAS											
159	47 214 151 223 262 327 276 71 286 196 198 PUEBLO WUEVO											
178	220 117 232 100 209 274 29 196 39 71 101 PUERTO SOMOZA											

SURFACE MILES (CONT'D)

182 224 67 236 66 213 278 175 200 185 103 73 RIVAS
 156 44 211 148 220 259 324 273 58 283 193 195 SAN JUAN DE LIMAY
 210 252 95 264 94 241 306 203 228 213 131 101 SAN JUAN DEL SUR
 127 169 36 181 7 158 223 106 145 116 44 18 SAN MARCOS
 154 196 73 208 40 185 250 95 172 105 47 55 SAN RAFAEL DEL SUR
 256 298 239 310 248 83 18 301 274 311 221 223 STO. DOMINGO
 216 258 199 270 208 43 22 261 234 271 181 183 STO. TOMAS
 66 46 121 58 130 169 234 183 22 193 103 105 SEBACO
 179 67 234 171 243 282 347 296 91 306 216 218 SOMOTO
 352 240 407 344 416 455 520 269 264 479 389 391 TEGUCIGALPA, HONDURAS
 205 247 144 259 127 236 301 40 223 8 98 128 TELICA
 85 127 40 139 49 116 181 102 103 112 22 24 TIPITAPA
 125 105 180 69 189 228 293 242 81 252 162 164 TUMA
 168 56 223 160 232 271 336 285 80 295 205 207 YALAGUINA

MATAGALPA

170 NAGAROTE
 160 102 MANDATME
 145 267 257 OCOTAL
 237 179 77 334 PENAS BLANCAS
 117 239 229 38 306 PUEBLO NUEVO
 198 102 124 295 201 267 PUERTO SOMOZA
 202 144 42 299 35 271 166 RIVAS
 114 236 226 95 303 67 264 268 SAN JUAN DE LIMAY
 230 172 70 327 43 299 194 28 296 SAN JUAN DEL SUR
 147 75 31 244 108 216 97 73 213 101 SAN MARCOS
 174 78 64 271 141 243 86 106 240 134 37 SAN RAFAEL DEL SUR
 276 264 254 373 331 345 292 296 342 324 241 268 STO. DOMINGO
 236 224 214 333 291 305 252 256 302 284 201 228 STO. TOMAS
 24 146 136 121 213 93 174 178 90 206 123 150 SEBACO
 137 259 249 30 326 30 287 291 87 319 236 263 SOMOTO
 310 432 422 165 499 203 460 464 260 492 409 436 TEGUCIGALPA, HONDURAS
 225 129 151 322 228 294 47 193 291 221 124 113 TELICA
 105 65 55 202 132 174 93 97 171 125 42 69 TIPITAPA
 35 205 195 180 272 152 233 237 149 265 182 209 TUMA
 126 248 238 19 315 19 276 280 76 308 225 252 YALAGUINA

STO. DOMINGO

40 STO. TOMAS
 252 212 SEBACO
 365 325 113 SOMOTA
 538 498 286 195 TEGUCIGALPA, HONDURAS
 319 279 201 314 487 TELICA
 199 159 81 194 367 120 TIPITAPA
 311 271 59 172 345 260 140 TUMA
 354 314 102 11 184 303 183 161 YALAGUINA

RAILROADS

ONLY RAIL CARRIER, NICARAGUAN PACIFIC RAILROAD SERVES SMALL AREA IN PACIFIC REGION. SINCE COMPLETION OF ROAD NETWORK IN ITS SERVICE AREA, RAIL TRAFFIC HAS DECLINED TO ABOUT 1/4 ITS VOLUME IN EARLY 1950'S. RAIL SYSTEM CANNOT COMPETE WITH ROAD FOR SEVERAL REASONS: 1) SHORT DISTANCES INVOLVED IN BOTH PASSENGER AND FREIGHT TRAFFIC; SMALL SIZE OF RAIL SYSTEM (317KM OF MAIN AND BRANCH LINES); 2) HIGH RAIL OPERATING COSTS DUE TO ANTIQUATED EQUIPMENT; 3) COMPETITION IN ROAD HAULAGE BUSINESS; 4) GREATER FLEXIBILITY OF ROAD TRANSPORT.

RAIL LINE RUNS APPROXIMATELY FROM CHINANDEGA THROUGH LEON AND MANAGUA TO MASAYA WHERE BRANCHES CONTINUE TO GRANADA AND JINOTEPE.

FERROCARRIL DEL PACIFICO DE NICARAGUA
ADDRESS: ANTIGUA ESCUELA DE ARTES, MANAGUA

MAIN LINE FROM MANAGUA TO THE PACIFIC PORT OF CORINTO VIA LEBANON AND CHINANDEGA AND FROM MANAGUA TO GRANADA ON LAKE NICARAGUA. 373 KM OPEN. (1.067 M GAUGE).

RAIL CARRIERS

9 DIESEL-ELECTRIC LOCOMOTIVES, 4 DIESEL PASSENGER TRAINS (26 CARS), 1 PASSENGER CAR, 163 FREIGHT CARS, 8 DUMP CARS, 33 TANK CARS, 2 PETROL RAILCARS.

	1974	1975	1976
	----	----	----
PASSENGERS	552,275	446,681	544,022
PASSENGER/KM ('000)	21,786	17,695	22,682
TON/KM ('000)	11,061	8,358	8,594

SOURCE: BANCO CENTRAL DE NICARAGUA

PORTS

PRINCIPAL PORT IS CORINTO, ON PACIFIC COAST. EXTENSIVE DEVELOPMENT SHOULD ENABLE PORT TO HANDLE EXPECTED TRAFFIC TIL MID 1980'S. PRINCIPAL PRODUCTS HANDLED INCLUDE COTTON AND ITS BY-PRODUCTS, COFFEE, LUMBER, WHEAT, AGRO-CHEMICALS, PETROLEUM PRODUCTS AND IRON AND STEEL PRODUCTS. ANOTHER IMPORTANT PACIFIC PORT, PUERTO SOMOZA, HANDLES PETROLEUM PRODUCTS THROUGH OFF-SHORE BUOY AND PIPELINE, BUT CANNOT COMPETE WITH CORINTO IN GENERAL TERMS BECAUSE IT IS NOT SUITABLE FOR DEEP WATER BERTHING FACILITIES. THREE ATLANTIC COAST PORTS, PUERTO CABEZAS, EL BLUFF AND PUERTO ISABEL, ARE LINKED WITH PACIFIC ZONE ONLY BY AIR AND BY ROAD AND WATERWAY LINK (MANAGUA-RAMA-EL BLUFF).

CORINTO

LAT 12 36'N; LONG 87 05'W

ACCOMMODATION-DEPTH AT ENTRANCE, 24FT LW: AT QUAY AND BERTH, 22 TO 24FT. SPECIAL BERTH WITH CONVEYOR BELT SYSTEM. LOADING AND UNLOADING BY SHIPS' GEAR. WATER AND SOME PROVISIONS. PIER 380M LONG WITH 30FT MLW.

DEVELOPMENT-EXPANSION PROGRAM TO REPLACE WOODEN PIER FOR CONTAINER FACILITIES, WAREHOUSE, OFFICE BUILDING, OPEN STORAGE. DREDGING OF HARBOR TO 35FT LOW TIDE.

BUNKERS-DIESEL OIL AVAILABLE.

TOWAGE-COMPULSORY.

PILOTAGE-COMPULSORY.

TRAFFIC-1974, 525 VESSELS. CARGO, 556,697 TONS INWARDS, 568,257 TONS OUTWARDS.

AIRPORT-NIA: LAS MERCEDES, MANAGUA, 100 MILES.

LOCAL HOLIDAYS-MAY 3, CORINTO PATRON'S HOLIDAY.

WORKING HOURS-0600 TO 1200 HOURS; 1300 TO 1800 HOURS; 1900 TO 2330 HOURS.

EL BLUFF

-- -----

(BLUEFIELDS) LAT 12N; LONG 83 45'W.

ACCOMMODATION-HARBOR SITUATED ABOUT 7KMS FROM THE CITY OF BLUEFIELDS, SEPARATED BY A SHALLOW LAGOON. DEPTH AT ENTRANCE TO HARBOR, 25FT. DEPTH ON BAR, 12.6FT AT HW. DEPTH ALONGSIDE WHARF, 12FT. MAX SAFE DRAFT, BEAM AND LENGTH, 11FT 6IN AND 500FT. NO CRANES OR EQUIPMENT. PROVISIONS AVAILABLE. WATER IN VERY LIMITED QUANTITIES.

DEVELOPMENT-DREDGING OF BAR AND CHANNEL UP TO THE TERMINAL AT RAMA.

CONTAINER AND RO/RO FACILITIES-LIMITED ROLL-ON/ROLL-OFF FACILITIES AVAILABLE AT LA ESPERANZA FOR VESSELS UP TO 10FT DRAFT.

BUNKERS-ONLY DIESEL FUEL AVAILABLE.

SHIPREPAIRS-MINOR REPAIRS POSSIBLE.

TOWAGE-NOT AVAILABLE.

PILOTAGE-COMPULSORY. VESSELS ANCHOR OUTSIDE BAR AND ARE BOARDED BY BAR PILOT, WHO WILL DOCK VESSEL AT CUSTOM HOUSE WHARF, WHERE CUSTOMS AND SANITARY OFFICIALS ALSO BOARD.

AIRPORT-LOCAL AIRPORT AT BLUEFIELDS WITH DAILY SERVICE TO INTERNATIONAL AIRPORT LAS MERCEDES AT MANAGUA, APPROX 5MI FROM PORT.

WORKING HOURS-0800 TO 1200 HOURS; 1300 TO 1700 HOURS.

PUERTO SOMOZA

LAT 12 10'N; LONG 86 50'W

ACCOMMODATION-DEEP WATER CHANNEL FOR UNLOADING BARGES ONTO SMALL DOCK. WAREHOUSES WITH ; TOTAL OF 2,200,000CU FT CAPS. HEAVY LIFT CRANES UP TO 15 TONS CAP; FORK LIFTS. FIVE TUGS WITH TOTAL BARGES CAP OF 2,000 TONS. ESSO OIL CO PUMPING STATION WITH TWO STORAGE TANKS OF 250,000BBLs EACH.

AIRPORT-50 MILES.

SAN JUAN

---- ----
(SAN JUAN DEL SUR)
LAT 11 15'; LONG 85 53'W.

ACCOMMODATION-ENTRY THROUGH HALF MILE WIDE OPENING IN CLIFFS, WHICH NARROWS AT ONE POINT TO 800 YARDS. BOTTOM MAINLY SAND, BUT SOME ROCKY PATCHES. FROM THE HEAD OF THE BAY, THE DEPTH GRADUALLY INCREASES TO 5 TO 6FMS AT THE NARROWS AND TO 10 TO 11FMS AT THE OUTER HEADLANDS. VESSELS ANCHOR, LOADING AND UNLOADING BY LIGHTERS OF WHICH 15 ARE AVAILABLE WITH AVERAGE CAPACITY OF 40 TONS.

AIRPORT-MANAGUA, 141KMS

WORKING HOURS-0600 TO 1200 HOURS; 1300 TO 1800 HOURS; 1900 TO 2200 HOURS. FROM 2200 TO 0600 AND HOLIDAYS ARE PAID AS PER OVERTIME RATES.

SHIPPING

MARINA MERCANTE NICARAGUENSE (MAMENIC), MANAGUA. REGULAR SERVICES BETWEEN CENTRAL AMERICA, NEW YORK, NEW ORLEANS AND EUROPE.

REGULAR STEAMSHIP SERVICES ARE PROVIDED BY GRACE, HOLLAND-AMERICA, MAMENIC, PACIFIC, ROYAL MAIL, ROYAL NETHERLANDS, STANDARD FRUIT AND UNITED FRUIT. FOLLOWING LINES ALSO CALL AT NICARAGUAN PORTS: AZTA, CIA DE NAVIGACION CHILEAN, GRAN COLOMBIANA, HAMBURG AMERICA, MEXICANA, MITSUI O.S.K, PSNC AND STATE MARINE LINES.

AIRPORTS

NB: FOR UP-TO-DATE INFO CONSULT LATEST ISSUE OF WEEKLY INTERNATIONAL NOTAMS, INTERNATIONAL FLIGHT INFORMATION MANUAL, AND/OR ICAO'S AIR NAVIGATION PLAN FOR APPROPRIATE REGION.

RUNWAY CHARACTERISTICS

LOCATION COORDINATES	ELEVA- TION M/ TEMP C	SLOPE NR/TYPE %	AIRCRAFT/ LENGTH M	CL	AIRCRAFT/ STRENGTH (1,000 KG)	FUEL/ OCTANE
MANAGUA/LAS MERCEDES						
12 08' 30" N 86 10' 24" W	59 30.9	09/27 0.04	2440	A	AUW 130/4	100,JA2

REMARKS: ALTERNATE AERODROMES: GUATEMALA/LA AURORA, SAN JOSE/JUAN SANTAMARIA INT'L, SAN PEDRO SULA/RAMON VILLEDA MORALES, TEGUCIGALPA/TONCONTIN

AIDS: RDME, RVOR, LAV 09, LR, LTX, LB, LO, MD, MC, MT, H80, L4, 5, 9. NO TELEX.

PUERTO CABEZAS/
PUERTO CABEZAS

14 03' 06" N 83 23' 06" W	15 30	08/26 0	1890	B	AUW 48/2	100
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REMARKS: ALTERNATE AERODROMES: SAN ANDRES I./SESQUICENTENARIO.

AIDS: H62. NO TELEX.

* KEY

INSTR - INSTRUMENT APPROACH RUNWAY
N-INSTR - NON-INSTRUMENT RUNWAY

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

1. PORTABLE RUNWAY LIGHTS (ELECTRICAL)
2. BOUNDARY LIGHTS
3. RUNWAY FLOOD LIGHTS
4. LOW INTENSITY RUNWAY LIGHTS
5. LOW INTENSITY APPROACH LIGHTS
6. HIGH INTENSITY RUNWAY LIGHTS
7. HIGH INTENSITY APPROACH LIGHTS
8. SEQUENCED FLASHING LIGHTS
9. VISUAL APPROACH SLOPE INDICATOR (VASI)
(AN ASTERISK (*) PRECEDING THE ELEMENT (L*4) INDICATES LIGHTING AVAILABLE ON PRIOR REQUEST BY PHONE, TELEGRAM, ETC.)

AIRCRAFT ENTRY REQUIREMENTS

PRIVATE AND NON-SCHEDULED (NON-COMMERCIAL) AIRCRAFT LANDING OR OVERFLYING NICARAGUA MUST ADVISE THE MINISTRY OF DEFENSE, CIVIL AVIATION SECTION, BY LETTER, COMMERCIAL CABLE, OR THROUGH NICARAGUAN DIPLOMATIC OR CONSULAR REPRESENTATIVES OF SUCH OPERATION AT LEAST 24 HOURS BEFORE ESTIMATED TIME OF ARRIVAL. NOTIFICATIONS SHOULD CONTAIN:

- 1) REGISTRATION AND NATIONALITY OF AIRCRAFT;
- 2) MAKE AND TYPE OF AIRCRAFT;
- 3) NAME OF PILOT AND OTHER CREW MEMBERS, IF ANY;
- 4) INTERNATIONAL AIRPORT OF ENTRY;
- 5) ESTIMATED TIME OF ARRIVAL;
- 6) NAME AND NATIONALITY OF PERSONS ABOARD.

NO REPLY WILL BE PROVIDED BY THE MINISTRY, UNLESS PERMISSION IS DENIED AND PAYMENT FOR MESSAGE IS GUARANTEED.

COMMERCIAL, CHARTER AND TRAVEL AIR CLUB FLIGHTS MUST APPLY FOR OVERFLIGHT AND LANDING PERMITS AT LEAST 24 HOURS IN ADVANCE.

A FLIGHT PLAN MUST BE FILED WITH ATC.

SPECIAL NOTICES

PILOTS ARE ADVISED TO CARRY A COPY OF THE TELEGRAPHIC REQUEST, ENDORSED BY THE TELEGRAPH COMPANY, TO PROVE THAT THE REQUEST WAS TRANSMITTED IF THE RESPONSE IS NOT AVAILABLE.

AIRFIELDS

426 TOTAL (404 USABLE); 8 WITH PERMANENT-SURFACE RUNWAYS; 10 WITH RUNWAYS 1,220 - 2,439 METERS. 2 SEAPLANE STATIONS.

AIRLINES

DOMESTIC:

LINEAS AEREAS DE NICARAGUA S.A. (LANICA):
APDO 753, MANAGUA; INTERNATIONAL SERVICES MANAGUA - SAN
SALVADOR - MEXICO, MANAGUA - SAN PEDRO SULA - MIAMI; INTERNAL
SERVICES LINKING MANAGUA WITH ALL MAIN TOWNS. FLEET: 2 CV-880
4 DC-6, 3 C-46.

NICARAGUA IS ALSO SERVED BY COMPANIA PANAMENA, PAN AMERICAN,
SAHSA (HONDURAS) AND TACA (EL SALVADOR).

AIR DISTANCES

MANAGUA TO:

MARACAIBO.....	990
MERIDA, MEXICO.....	652
MERIDA, VENEZUELA.....	1,049
MEXICO CITY.....	995
MIAMI.....	1,021
NEW ORLEANS.....	1,262
NEW YORK.....	2,110
PANAMA CITY.....	508
SAN JOSE.....	200
SAN PEDRO SULA.....	264
SAN SALVADOR.....	226
SIUNA.....	159
TAPACHULA.....	451
TEGUCIGALPA.....	151
VERA CRUZ.....	824

PUERTO CABEZAS TO:

WASPAN.....	60
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ELECTRIC POWER

NATIONAL POWER AND LIGHT COMPANY (ENALUF) HAS PRIMARY RESPONSIBILITY FOR GENERATION AND DISTRIBUTION OF ELECTRIC POWER. CAPTIVE INDUSTRIAL PLANTS AND ABOUT 30 SMALL PRIVATE COMPANIES AND MUNICIPAL ENTITIES PROVIDE SIGNIFICANT SHARE OF TOTAL CAPACITY. TWO LATTER ARE EXPECTED TO BE ABSORBED BY ENALUF OR MERGED INTO DISTRIBUTION COOPERATIVES BY MID-1970'S. A SINGLE COUNTRY-WIDE GRID WAS ESTABLISHED BY 1958, BUT AVAILABILITY OF POWER TO CONSUMER IS MUCH GREATER IN PACIFIC ZONE THAN IN OTHERS. BY 1975, 41% OF DWELLINGS HAD ACCESS TO ELECTRICITY; 7% OF RURAL DWELLINGS. MAJOR CITIES CONSUMED 85.5% OF ELECTRIC ENERGY; MANAGUA ALONE ACCOUNTED FOR 56.3%. ANNUAL GROWTH RATE OF PRODUCTION 1974-76 AS 4.8%, HOWEVER, CONSUMPTION FOR SAME PERIOD ROSE 5.6%. MAJOR PROJECTS INCLUDE A GEOTHERMAL PLANT AT MOMOTOMBO AND THE SAN JUAN RIVER PROJECT.

1977 - 358,000 KW CAPACITY; 1.2 BILLION KWH PRODUCED; 520 KWH/CAPITA.

ELECTRICITY SUPPLY: 110 VOLTS, 60 CYCLES.

RADIO NETWORK

DIRECCION NACIONAL DE RADIO Y TELEVISION (ADDRESS: APDO. 209, MANAGUA) IS GOVERNMENT SUPERVISORY BODY; RADIODIFUSORA NACIONAL, APDO. 1731, MANAGUA, IS GOVERNMENT RADIO STATION. RADIO ONDAS DE LUZ, APDO. 607, IS RELIGIOUS AND CULTURAL STATION (820KHZ. LONG-WAVE.) RADIO MUNDIAL, LAS BRISAS, Q-23, MANAGUA, IS A MAJOR COMMERCIAL STATION. OTHER STATIONS: 85 AM, 30 FM; 700,000 RECEIVING SETS IN 1976. A 1966 SURVEY OF INFORMATION SOURCES FOR RURAL FAMILIES INDICATED THAT IN NICARAGUA 48% OF FAMILIES SURVEYED WERE FREQUENT USERS OF RADIO (63% MADE SOME USE OF IT). IN COMPARISON, 9% WERE FREQUENT USERS OF NEWSPAPERS, 13% OF BOOKS, 7% OF MAGAZINES, 12% OF MOTION PICTURES AND 1% OF TELEVISION.

RADIO FACILITIES OF THE US EMBASSY AVAILABLE IN EMERGENCIES FOR COMMUNICATIONS WITH US, USSOUTHCOM AND IN-COUNTRY. THE NICARAGUAN RED CROSS HAS SHORTWAVE RADIO CAPABILITY FOR BOTH IN-COUNTRY AND INTERNATIONAL COMMUNICATIONS; ALSO 2 BASE STATIONS, 3 MOBILE UNITS AND INDIVIDUAL "WALKIE TALKIE" SETS. ADDITIONAL COMMUNICATIONS EQUIPMENT CAN BE REQUESTED FROM USSOUTHCOM.

OTHER SOURCES INCLUDE MANY LOCAL HAM RADIO OPERATORS.

SEE ALSO DISASTER PREPAREDNESS.

TELEPHONE SYSTEM

POST AND TELECOMMUNICATIONS DIRECTORATE (TELCOR), AN AUTONOMOUS PUBLIC ENTERPRISE, SUPERVISES TELECOMMUNICATIONS SYSTEM. EVEN BEFORE 1972 EARTHQUAKE, NICARAGUA'S SYSTEM WAS RELATIVELY UNDERDEVELOPED IN COMPARISON WITH OTHERS IN CENTRAL AMERICA. CONSIDERABLE RECONSTRUCTIVE ACTIVITY ADDED TO ITS DIFFICULTIES. PRESENT SYSTEM INCLUDES LOW CAPACITY WIRE AND RADIO-RELAY NETWORK, CONNECTION INTO CENTRAL AMERICAN MICROWAVE NET, SATELLITE GROUND STATION. 1,800 TELEPHONES IN 1974 REPRESENTED 10% INCREASE OVER PREVIOUS YEAR, WHEN TOTAL CAPACITY WAS 24,786 AND TOTAL LINES WERE 15,082. 1973 DISTRIBUTION OF INSTALLED TELEPHONES: PACIFIC ZONE - 13,969, CENTRAL ZONE - 2,436, ATLANTIC ZONE - 285.

TELEVISION

TELEVISION DE NICARAGUA, SA, 1505M MANAGUA (YNSA-TV) IS A COMMERCIAL STATION BROADCASTING 12 HRS DAILY; OTHER COMMERCIAL STATIONS ARE TELEVICENTRO DE NICARAGUA, LAS NUBES, EL CRUCERO, MANAGUA, AND TELECADENA NICARAGUENSE, OLEODUCTOS NICARAGUENSES, MANAGUA. IN 1976, TV STATIONS TOTALLED 7, TV SETS, 70,000. BECAUSE OF HIGH COST OF TELEVISION SETS, USE IS CONCENTRATED IN LARGE URBAN CENTERS AND UPPER INCOME GROUPS.

CHECKLIST

THE CIVIL CONFLICT THAT ENDED IN JULY 1979 HAS LEFT COUNTRY IN DISARRAY: PROBLEMS OF ORGANIZING NEW GOVERNMENT STRUCTURES EXACERBATED BY ECONOMIC DISRUPTION, LACK OF MONETARY RESERVES AND HIGH UNEMPLOYMENT; ECONOMIC CRISIS HAS CAUSED SEVERE DISRUPTION OF THIS YEAR'S AGRICULTURAL PRODUCTION. TO RELIEVE THREAT OF STARVATION OF THOUSANDS OF REFUGEES, MASSIVE AIRLIFTS OF FOOD ARE IN PROGRESS THROUGH THE NICARAGUAN RED CROSS.

CHECK WITH US MISSION FOR UP-TO-DATE STATUS.

BIBLIOGRAPHY

- AMERICAN COUNCIL OF VOLUNTARY AGENCIES FOR FOREIGN SERVICE, INC.
TECHNICAL ASSISTANCE INFORMATION CLEARING HOUSE. TAICH COUNTRY
REPORT: NICARAGUA. NEW YORK: TAICH, SEPTEMBER 1974.
- EUROPA PUBLICATIONS, EUROPA YEARBOOK 1978: A WORLD SURVEY, VOL. II.
LONDON: EUROPA PUBLICATIONS, 1978.
- HOLLAND, B.J., DAVIS, J. GANGLOFF, L. SYNCRISIS: THE DYNAMICS OF
HEALTH. NICARAGUA. WASHINGTON, D.C.: DEPARTMENT OF HEALTH,
EDUCATION AND WELFARE, 1972.
- INTERNATIONAL AIR TRANSPORT ASSOCIATION. AIR DISTANCES MANUAL. 3RD.
ED. LONDON: IATA/INTERNATIONAL AERADIO, LTD. APRIL 1976.
- INTERNATIONAL CIVIL AVIATION ORGANIZATION, AIR NAVIGATION PLAN:
CARIBBEAN AND SOUTH AMERICAN REGIONS. 10TH ED. DOC. 8733/10.
MONTREAL: ICAO, JUNE 1977.
- INTERNATIONAL MONETARY FUND. INTERNATIONAL FINANCIAL STATISTICS.
VOL. XXXII NO. 8. WASHINGTON, D.C.: IMF, AUGUST 1979.
- INSTITUTE OF NUTRITION OF CENTRAL AMERICA AND PANAMA. NUTRITIONAL
EDUCATION OF THE POPULATION OF CENTRAL AMERICA AND PANAMA.
REGIONAL SUMMARY. WASHINGTON, D.C.: DEPARTMENT OF HEALTH,
EDUCATION, AND WELFARE, 1971.
- NICARAGUAN GOVERNMENT. DIRECCION DE ESTADISTICA. ANUARIO
ESTADISTICO 1973. MANAGUA: GON, 1973.
- ORGANIZATION DE LOS ESTADOS AMERICANOS. INSTITUTO INTERAMERICANO
DE ESTADISTICA. AMERICA EN CIFRAS 1974. WASHINGTON, D.C.: OAS,
1974.
- PAN AMERICAN HEALTH ORGANIZATION. HEALTH CONDITIONS IN THE AMERICAS:
1969-72. WASHINGTON, D.C.: PAHO, 1974.
- RIETHMULLER, JOHN, ED. PORTS OF THE WORLD 1979, LONDON: BENN
BROTHERS, 1979.
- RYAN, JOHN M., ET. AL. AREA HANDBOOK FOR NICARAGUA. WASHINGTON,
D.C.: GPO, 1970.
- USG MISSION TO NICARGUA. DISASTER RELIEF PLAN: USG COUNTRY TEAM.
FEBRUARY 1978.
- US GOVERNMENT
- AGENCY FOR INTERNATIONAL DEVELOPMENT. ANNUAL BUDGET SUBMISSION
FY 1979: NICARAGUA. WASHINGTON, D.C.: AID, MAY 1977.
-AID FOOD HABITS QUESTIONNAIRE. MANAGUA: AID, 1971.
-NUTRITION SECTOR ASSESSMENT FOR NICARAGUA. MANAGUA: AID,
1976.
- CENTRAL INTELLIGENCE AGENCY. NATIONAL BASIC INTELLIGENCE FACTBOOK.
WASHINGTON, D.C.: CIA, JANUARY, 1979.
-CHIEFS OF STATE AND CABINET MEMBERS OF FOREIGN GOVERNMENTS.
WASHINGTON, D.C.: CIA, AUGUST 1979.
- GENERAL ACCOUNTING OFFICE. CONGRESSIONAL REPORT. NICARAGUA --
AN ASSESSMENT OF EARTHQUAKE RELIEF AND RECONSTRUCTION
ASSISTANCE. WASHINGTON, D.C., MARCH 1977.

STATE DEPARTMENT. BACKGROUND NOTES. WASHINGTON, D.C.: GPO,
FEBRUARY 1979.

-COUNTRY FACT SHEETS. WASHINGTON, D.C.: FADRC, 1976.
-DIPLOMATIC LIST. WASHINGTON, D.C.: GPO, JANUARY 1979.
-KEY OFFICERS OF FOREIGN GOVERNMENT POSTS. WASHINGTON, D.C.:
JULY 1979.
-TREATIES IN FORCE. WASHINGTON, D.C.: GPO, JANUARY 1978.
-US MISSION, NICARAGUA. MISSION DISASTER RELIEF PLAN.
MANAGUA: US MISSION, 1975.
-VISA REQUIREMENTS OF FOREIGN GOVERNMENTS. WASHINGTON, D.C.:
GPO, 1978.

TRANSPORTATION DEPARTMENT. FEDERAL AVIATION ADMINISTRATION.
INTERNATIONAL FLIGHT INFORMATION MANUAL. WASHINGTON, D.C.:
FAA, APRIL 1978.

WORLD BANK. MEMORANDUM ON RECENT ECONOMIC DEVELOPMENT AND PROSPECTS
OF NICARAGUA. WASHINGTON, D.C.: WORLD BANK, JUNE 1978.

-WORLD DEVELOPMENT REPORT 1979. ANNEX: WORLD DEVELOPMENT
INDICATORS. WASHINGTON, D.C.: WORLD BANK, AUGUST 1979.

NAME UPDATING: SEPTEMBER 1979