MEDICO-NUTRITIONAL INFORMATION

39. Diet: Main staple foods are cereals as millet, sorghum and sometimes rice and fonio. Sweet potatoes, yams, cassava and beans complete the diet. Sauce is made up of oil seeds, karite butter, soumbala, dried fish, and vegetable leavrs and greens. Meat and fish (Niger delta) consumed when available and as ceremonial dish. Pastoral population in the North (Peuhls, Maures and Touareg) base their diet on milk and its products, meat, dates and tea. In urban areas, some imported products as bread, milk and canned products.

40. Nutritional deficiencies: PEM; major problem, maximum in dry season March to June. Marasmus and kwashiorkor more important in urban and suburban areas. Vitamin A deficiency in Sahara regions (Mopti, Tombouctou Gao). Deficiency suspected in calcium intake riboflavin (B2) and vitamin C. Anaemia, major problem, widespread. Goiter: foci in Bougouni, Tominian, Koutiala, Bandiagara, Koro.

41. Medical supplies: List of standard medicines available from Ministry of Health. Central government pharmaceutical depot (Pharmacie Populaire d'Approvisionnement), with warehouses, in Bamako, is responsible for import, storage and distribution of supplies. One-year supply are supposed to be stocked. Labelling: French.

42. Health Services: Health structure divided in 6 regions each headed by a Director of regional health. In-patient facilities: 10 general hospitals (3 in Bamako) 2,162 beds; 35 rural hospitals 679 beds; 42 health centres 707 beds; 152 maternity centres 1,161 beds. Outpatient facilities: available in hospitals and 51 dispensaries.in urban areas, 281 dispensaries in rural areas, 11 mobile health units, 37 private dispensaries. Special services: 78 dispensaries leprosy hospitals and centres and 52 PMI centres (PMI= protection maternelle et infantile= Maternal and Child Health). Most of the doctors are grouped in Bamako or in the 5 other regional towns. Medical assistants and midwives in charg of health centres and maternity clinics. Specialists (and dentists) in Bamako only.

43. Capacity for handling refrigerated drugs: Very limited
Small refrigerated room in Bamako at the "Pharmacie Populaire"

44. Common illnesses: Malaria, measles, diarrhea in decreasing order of importance apparently the first registered causes of deaths in infants below 1. Tetanus most frequent and lethal, especially in new-born children. High maternal mortality from post-partum complications. Enteric diseases highly prevalent, with amoebiasis extremely frequent, also bacillary dysentery. Transmission of poliomyelitis on large scale. Typhoid reported. Tuberculosis probably largely undetected. Still significant number of cases of diphtheria. Endemic syphilis (Gao). Cerebro-spinal meningisitis maximum incidence February-April. Trachoma. Some brucellosis, more frequent in grazing areas, North (Gao, Mopti).
Malaria widespread, entire population at risk, including in cities; transmission year round; no significant control measures. Schistosomiasis (mainly vesical) widespread. Onchocerciasis in S.W., control measures established. Foci of trypanosomiasis near Bamako and in the S.E. Cholera reported in 1974.

MEDICO-NUTRITIONAL INFORMATION

39. Diet: Staple food is wheat eaten as bread and couscous, barley, maize and potatoes, eaten to lesser extent. Sauce prepared with dried beans, check peas, tomatoes, onions and carrots; cooked with olive and soja oils. Large amounts of fruit in season. Much sugar eaten (in mint tea); also honey (in cakes). Chicken and beef consumption depends on economic level. Fish not much consumed. Pork not admissible.

40. Nutritional deficiencies: PEM present, essentially maresmus. Anaemia: (iron deficiency); in children and pregnant women.

41. Medical supplies: Importations of drugs through Ministry of Public Health, Rabat. List of medicaments in common use available at the Ministry and in hospitals. Many private pharmacies in towns. Directions should be written in French.

42. Health Services: In each of the 25 provinces a Chief Medical Officer is responsible for all health services. Provinces are divided into areas, in each of which, there is a health centre providing general and specialized medical consultation services where the chief physician of the area works. Each area is divided into 3 sectors each of which has a dispensary. In these dispensaries paramedical personnel carriers out care, vaccination, maternal and child health.
In 1973, there were 66 urban health centres, 119 rural centres, 165 urban dispensaries and 504 rural dispensaries.
The hospital network has been divided administratively into national university hospital centres, regional hospitals centres, provincial hospital centres and area hospitals.
In 1973 there were 24,500 general hospital beds, to which should be added about 500 beds in the hospitals belonging to mining companies and 3,000 mental hospital beds (without counting about 50 small private clinics and 2 foreign hospitals at Tanger).
In addition to the public health service, there is a social security system for wage-earners which is covered by the private medical sector.

43. Capacity for handling refrigerated drugs: Some refrigerators in hospital and health centres but not reliable. Cold boxes available to transport vaccines in rural areas.

MEDICO-NUTRITIONAL INFORMATION (Cont'd)

44. Common illnesses:

Tuberculosis persists as the major health problem, in spite of BCG vaccination. Enteric diseases widespread, including amoebiasis, bacillary dysentery, hepatitis, typhoid endemic with limited outbreaks. Poliomyelitis seemingly on the increase, especially in cities. Tetanos frequent, including in newborn. Occurence of large outbreaks of cerebrospinal meningitis. Epidemics of measles with high mortality in rural areas. Trachoma widespread in Southern part of the country; seasonal outbreaks of hemorrhagic conjunctivitis. Rare cases of exanthematic typhus. Foci of leprosy. Very large incidence of streptococcal infections with rheumatic fever involving heart complications, a major problem. Diphteria still transmitted. Hydatidosis most prevalent in sheep raising areas. Rabies a persistent risk. Sexually transmitted diseases prevalent. Scabies widespread. Malaria, transmission May to October, decreasing, but risk of resurgence if control measures relaxed; areas without risk include Agadir, Casablanca, Rabat-Salé, Tanger; no risk in centers of towns. Vesical schistosomiasis most prevalent in South and spreading North, on the increase. Cholera recently introduced.
Fatal scorpion bites in hazard especially in children, mainly during hot season, in middle and South of the country.

SOCIO-NUTRITIONAL INFORMATION

39. Diet — For sedentary population (mostly confined to South of country) as well as nomads, staple foods are wheat, millet, sorghum, fonio, prepared as bread, pancakes, or couscous. Maize (limited) and rice increasingly consumed in South. Sweet potatoes and potatoes South only (African population). Nomads usual meat. Pulse and vegetables prepared in sauce with groundnut oil. Nomads use milk, fresh or sour.

40. Nutritional deficiencies: — PEM ** widespread (marasmus) more among nomadic children than in sedentary groups, no kwashiorkor reported. Deficiencies also reported in vitamins A and C (vitamin A distributed in principle in PMI centres). Deficiency of vitamin B1 + among nomads outside Nouakchott. Anaemia + pregnant women.

41. Medical supplies: — "Pharmarim" responsible for importation and storage. Private pharmacies not allowed. No private channels authorized except for some special assistance programme. Directions in French and Arabic.

42. Health Services: — Health under "Ministère de la Protection de la Famille et des Affaires Sociales". Country is divided in 13 health districts (circonscription médicale) under health general directorate (Directeur Général de la Santé). Facilities include: in Nouakchott district, 1 national Hospital (245 beds), 4 health centres (consultations) and 3 specialized centres. In regions: 6 regional hospitals (in principle with surgery, maternity, X-ray, laboratory facilities, 25 to 150 beds), 19 health centres, 15 mobile teams for preventive medicine and primary care amongst the nomads, 20 MCH centres (mothers and child care), 48 other out-stations. Most physicians (around 70) are in government service; all in rural areas are expatriate; all non-expatriate physicians (8) in Nouakchott Laboratory facilities minimal. Private companies maintain medical services for their work forces with hospitals in Nouakchott, Nouadhibou, Adjoujt, Zouerate, physicians and eventually other staff.

43. Capacity for handling refrigerated drugs: — Positively no refrigerated storage facilities in Pharmarim. Cold storage facilities in Pharmarim and Pharmapro (pharmacie d'approvisionnement) and in some private businesses. Cold storage facilities in regional hospitals (refrigerators and freezers), and possibly in rural health centres. No dry ice available. Cold chain in health mobile teams and in cattle breeding services (Service de l'Elevage).

44. Common illnesses: — Amoebiasis: especially high prevalence notified from Nouadhibou, Nouakchott and Selibali, but present everywhere. Notified number of typhoid cases has increased over recent years. Large numbers of viral hepatitis reported over recent years. Still a significant number of cases of poliomyelitis reported in recent years. Measles highly fatal; January-May; importance probably underestimated. Tuberculosis +. Syphilis +; also endemic syphilis. Trachoma present. Malaria, hyperendemic in Kaedi but widespread everywhere including Nouakchott district, rare in Atar, Nouadhibou and F'Derick districts; transmission year round. Vesical schistosomiasis: Selibaki, Kiffy, also and due to increase in Gorgol area (M'Bout). No intestinal schistosomiasis indentified. Dracuntiasis (Kaedi). Cerebro-spinal meningitis; some 10 to 300 cases reported per year. Occasional cases of relapsing fever.

MEDICO-NUTRITIONAL INFORMATION

39. **Diet**

The staple food is mainly rice and wheat (as bread or "fahrattas", a form of unleavened bread). Potatoes are important and eaten as a vegetable. Grain legumes (black lentils and "dholl") and, to a lesser extent, beans are consumed with the staple. The oil used is almost wholly vegetable. Butter-oil would be acceptable for cooking purposes if vegetable oil were not available. Meat (beef, mutton and poultry) is commonly eaten. Fish is also commonly eaten, mostly as frozen fish. Salted and tinned fish would be acceptable in an emergency situation. Milk (fresh liquid and dried full-cream) is consumed in substantial amounts by all sections of the population. There is moderate consumption of vegetables (especially onions and green vegetables) and fruits (especially tomatoes and bananas).

Foods which are not acceptable include beef and pork among Hindus, and pork among Muslims. Sub-groups of Hindus are strictly lacto-vegetarian.

Spices include garlic, curry powder and chillies. White, refined sugar consumed.

On Rodrigues Island, maize is the traditional staple food but rice and wheat flour are now becoming substitutes.

40. **Common nutritional deficiencies:**

PEM important: especially in pregnant and lactating women, pre-school and primary school children and female industrial workers; little seasonal variation.

Anaemia (iron deficiency or connected with hookworm infestation) ++ : especially in women of reproductive age, pre-school and primary school children and secondary school girls.

41. **Medical supplies:**

The Ministry of Health, Edith Cavell Street, Port Louis, tel.: 08-3211, telex: 4249 Extern IW, is responsible for importing medical supplies. There is no restriction on the private importation of medical supplies except on those products that are produced locally.
A list of essential drugs has been prepared for use in the public sector (available at the Ministry of Health.)
Private distribution of medicaments is through 44 pharmacies (39 in towns and 5 in large villages).
Directions should be written in English or French.

MEDICO-NUTRITIONAL INFORMATION (cont'd)

42. Health services:

The activities of the Ministry of Health are coordinated by the Permanent Secretary assisted by a Principal Assistant Secretary on the administrative side and a Chief Medical Officer on the technical side.
Hospitals facilities are as follow: 4 regional hospitals with surgery, X-ray and limited laboratory facilities are situated at Port Louis (378 beds), Quatre Bornes (618 beds), Pamplemousse (400 beds) and Port Mathurin, Rodriguez Island (72 beds); 4 specialized hospitals are situated at Beau Bassin (809 psychiatric beds), Poudre d'Or (146 beds for TB and chest diseases), Moka (57 beds for eye cases) and Vacoas (39 beds for E.N.T. patients); 3 district hospitals are situated at Mahebourg (116 beds), Centre de Flack (107 beds) and Souillac (94 beds).

Laboratory facilities include the Central Health Laboratory in Quatre Bornes, Sir Edgar Laurent Tuberculosis Laboratory in Port Louis and the Government Analytical Laboratory also in Port Louis.
About 50 dispensaries, each staffed by one or two nursing officers and regularly supervised by doctors, provide primary health care. There are 71 maternal and child health clinics, each staffed by midwives and regularly visited by public health nurses and a doctor.
Some non-governmental services exist: Sugar Estates have 17 health centres (207 beds) and 4 dispensaries.
The private sector has 6 private clinics (176 beds) in the urban area. Most of the private practitioners have their surgeries in urban areas.

43. Capacity for handling refrigerated drugs:

There is no cold storage facility at the airport.
Cold storage facilities in the capital city include New Cold Storage Co Ltd, (capacity 1,500 m3), Port Louis, tel.: 2-6131, (capacity 180 m3) and ABC Cold Storage, 49 Queen Street, Port Louis, tel.: 2-1686 (capacity 80 m3). Soreefan Brothers, Deschartes Street, Port Louis, tel.: 2-1056.

Dry ice is produced by Gaz Carbonique, Phoenix, tel.: 6-4778. Refrigerators are available in some dispensaries and in many shops in villages. Refrigerators as well as freezers are available in the hospitals as well as in shops in towns. Refrigerated vans are available for transport of dairy products and frozen foods at Panagora Marketing Pont-Fer, Phoenix, tel.: 6-3034 and at Mauritius Farm, Happy World Building, Port Louis, tel.:2-5001.

44. Common illnesses:

Gastro-enteritis still an important cause of morbidity and mortality; mostly in summer, but decreasing due to improvements in environmental sanitation. Some typhoid. Respiratory ailments widespread and frequent during winter months. Tuberculosis mostly in urban areas and in adults; immunization programmes for children. Diphteria, tetanus and poliomyelitis controlled through vaccination programmes. Sexually-transmitted diseases mostly in urban areas; said to be increasing.
Malaria eradicated but high risk of reintroduction by travellers.
Limited foci of vesical schistosomiasis.

MEDICO-NUTRITIONAL INFORMATION

39. Diet: Staple foods are basically maize (eaten in many forms including tortillas), wheat (increasingly used as bread, and pasta) and rice.
Starchy foods: mainly potatoes; also sweet potatoes and cassava (in the Gulf area).
Additional foods eaten daily include many varieties of pulses (dried beans, chick peas, dried peas and lentils).
For cooking, vegetable oil is more generally used than animal fats.
Vegetables include particularly tomatoes, chile and green leafy vegetables.
High consumption of sugar cane (in beverages and as alcoholic drink).

40. Nutritional deficiencies: PEM ++ : especially in preschool children in the South East and South.
Vitamin A deficiency is reported. Anaemia occurs in pre-school children, especially in semi-rural and rural areas, and in school children, especially in coastal areas.
Goiter: foci in Guerrero, Chiapas, Mexico and Tlaxcala, salt iodinization.
Pellagra reported in Yucatan (maximum April to June).

41. Medical supplies: Importation of medical supplies is through "Secretaria de Salubridad y Asistencia" Lieja No. 8 esq. Paseo de la Reforma, telex: 72543. Private channels are also authorized. Ministry of Health has a list of medicaments for common use in the country. Available at Direccion General de Control de Alimentos, Bebidas y Medicamentos, Liverpool No. 80 esq. Havre Col. Roma, Mexico 7, D.F. Private companies are authorized to distribute medicaments throughout the country. Directions written in Spanish.

42. Health services: Health care is under the responsibility of the Secretariat for Health and Welfare (SSA) but other institutions are also responsible for health sector, namely: Social Security Institute (IMSS) and Social Services for State Employees (ISSSTE) as well as other autonomous and private agencies. Health activities are carried out through the Coordinated Public Health Services which operate under agreements between the Secretariat and the Government of the States.
It is estimated that 20 million inhabitants in rural areas have no permanent medical care.
The availability of hospitals beds per 1,000 inhabitants is as follows: private sector, 4.5 beds; Social Security, 2.2 beds; Secretariat of State, 1.2 beds. For the all countries about 90,000 beds.

MEDICO-NUTRITIONAL INFORMATION (cont'd)

Outpatient facilities are divided into health centres (about 3,000), clinics (about 1,100), health posts (about 1,500) and dispensaries (about 1,200).

Health manpower mainly concentrated in the urban areas.

Folk medicine is practised especially in rural areas.

43. Capacity for handling refrigerated drugs: Cold storage facilities available at the international airport and in the capital city. Dry ice is readily available. In the countryside there are refrigerators. The in-country shipment of refrigerated biological products is through the Ministry of Health, the Social Security Institute (IMSS) and the Social Services for State Em loyees (ISSSTE).

44. Common Illnesses: Communicable diseases the first cause of death, with enteric and respiratory diseases playing the major role.

Amoebic disentery highly prevalent. Foci of typhoid fever. Tuberculosis a major problem. Occasional outbreaks of poliomyelitis (Nuevo Leon and Potosi).
Sporadic cases of hydatidosis.
Rabies still endemic both in urban and rural areas with numerous human cases.
Brucellosis widespread in the Northern states; a probably underestimated problem.

Malaria still affects large part of the country: transmission year round; no risk below 1,800 m; no risk in major urban areas.
Foci of onchocerciasis in Chiapas and Oaxaca states.
Isolated foci of Chagas diseases in Southern part of the country.

MEDICO-NUTRITIONAL INFORMATION

39. Diet: Staple foods differ in the two main regions: in the South millet and maize flour, in the North cassava. Rice is eaten particularly in the coastal plain. Bread is an additional staple food in towns, groundnuts are consumed particularly South of the Zambezi; also potatoes when available. Pounded leaves (cassava, beans, pumpkin etc.) and beans are boiled and served with the staple. Onions and spices widely used. Fish (fresh when available, dried inland) widely consumed. Meat only occasionally available Mangoes eaten in a large quantities, uncooked, about January. Fat: peanut oil, coconut oil. Pork not acceptable among Muslims (northern coastal regions and in towns).

40. Nutritional deficiencies: PEM++, especially young children, frequently as kwashiorkor (June-July). Rickets is reported North of the Zambezi valley. Women and children vulnerable to iron deficiency anaemia in whole country.

41. Medical supplies: Imports strictly centralized through: Empresa Estatal Medimoc, Avenida dos Martires de Inhaminga Maputo. Simplified médecines being developed. Drug distribution strictly regulated. No pribate pharmacies. Reference lists of medicaments for common use by qualified doctors, by medical technicians and by nurses and auxiliary workers are available at Ministerio Da Saude e Acçao Social, Avenida Eduardo Mondlane, Maputo. Directions written is portuguese but other languages also used.

42. Health Services: Health care is provided free of charge and is being decentralized to provincial and district levels. Primary health care is based on the health worker (agents polivalente element APE). Care at the primary level is delivered through health centres (some 300 in whole country) responsible for environmental sanitation, preventive measures, and medical care including pediatrics, obstetrics, and emergency health care. Some of these health centres may have laboratory and X-ray facilities, Health centres have inpatient facilities (20 or 40 beds) in rural areas, none in urban areas. At the secondary levels some 75 rural hospitals are providing more extensive and specialized care, including general surgery, dentistry, blood transfusions, laboratory services and X-rays. There are central hospitals at Maputo, Beira and Nampula. Private health facilities and personnel: nil.

43. Capacity for handling refrigerated drugs: Cold storage facilities in Maputo and Beira, available at Empresa Estatal Medimoc or at Ministry of Health. Refrigerated storage facilities exist in all 10 provincial capitals with capacity of at least 2 cubic metres. This cold chain has been extended to a few district centres and it si planned to cover all districts as part of the Extended Vaccination Programme.

MEDICO-NUTRITIONAL INFORMATION (Cont'd)

44. Common illnesses: Enteric diseases most prevalent with apparently higher incidence during the summer in the Southern part of the country; amebiasis mainly in South, almost non-existent North of Zambezi River. Infectious respiratory diseases and skin diseases (including tropical ulcers) are major problem. VD, tuberculosis widespread. Leprosy highly prevalent, especially in Nampula, Zambezia and Cabo Delgado Provinces. Neonatal tetanus. Cerebro-spinal meningitis cases occur over whole of the country. Immunization programs include PCG, measles and (for women) tetanus, also poliomyelitis.
Malaria hyperendemic. Schistosomiasis both vesical and intestinal, the last one being more common in South than in North. Filariasis transmitted along the rivers. Foci of trypanosomiasis. Occasional cases of plague.

MEDICO-NUTRITIONAL INFORMATION

39. Diet: Staple food is rice, wheat (as bread), corn (roasted), millet (as bread) and barley. There are accompanied usually by pulses, soybean, potatoes, green and yellow vegetables, dried vegetables, gram seeds and pickles. In less amounts others beans (Simi. Bodi, Keran or Peas).

Fish and meat are eaten occasionally. Fruits also. Religiously, beef is not acceptable. High and mid-mountain people consume more corn, millet (as bread) and gundrunk (dried and fermented leafy vegetables).

40. Nutritional deficiencies: PEM + widespread, especially children under 5 years old (distribution of powder milk and protein flour for children throughout the country). Vitamin A deficiency, especially children under 5 years old.
Scurvy and rickets are reported, also anaemia. Goiter: foci in high mountain region (salt iodization has been done for last few years). Beri-beri: more prevalent in Southern region and Plain Terai area.

41. Medical supplies:

42. Health Services: Health Services are decentralized. Medical facilities are provided through hospitals at regional, zonal and district levels and health posts at village level. In some districts there are health centres instead of district hospitals (provided only out patient care). Hospitals are headed by civil surgeon, health centres by a medical officer and health posts by a health assistant or a senior auxiliary health worker.

Types of services available: (1) besides the general hospital services, specialized services such as surgery, obstetrics, gynaecology, pediatrics, orthopaedics; with 50 or more beds; (2) in the district hospitals: only general medical care services; (3) in the health posts: outpatient treatment of minor ailments, referral services and preventive services.

There are special services such as malaria eradication, family planning, small-pox eradication, TB control, leprosy control.

There are few mission hospitals and dispensaries but gradually amalgamated into the National Health Service scheme.

Private practices are allowed in urban and rural areas.

Traditional healers are extensively used throughout the country.

43. Capacity for handling refrigerated drugs: No facilities at the airport. Cold storage facilities at the "Smallpox Eradication Projects, Epidemiology sector of DHS Hospital". Dry ice is not available. There are no refrigerators at the health posts level. But most of the district hospitals are provided with a refrigerator operated by electricity or kerosene.

MEDICO-NUTRITIONAL INFORMATION (Cont'd)

44. Common illnesses: Entero-parasitic diseases a major problem, also amoebiasis. Typhoid and tetanus are reported. Scabies: ++. TB. Leprosy reported.
Malaria: improvement of the situation, effective surveillance.
Cholera: large outbreak in 1977.

MEDICO-NUTRITIONAL INFORMATION

39. Diet: The common daily staple is maize eaten green ("chilotes") or in the form of "tortillas" or "tamales". It is also used as beverage ("atol") or toasted and mixed with cacao ("pinolillo"). Sorghum sometimes used as a substitute for maize. Wheat, especially in the form of bread, mainly an urban item. Small amounts of barley also consumed. Rice popular. Far smaller and more localized consumption of starchy staples: plantains, especially in cities, potatoes and cassava; also some yams and sweet potatoes. The ubiquitous accompanying food (in rural areas) is dried black and red kidney-beans. Animal fats are quite commonly used for cooking in rural areas whilst cottonseed oil is common on the Atlantic coast. Garlic is the chief cooking condiment. Generally low consumption of meat; usually beef, some pork and also wild game but chicken not popular. Fish consumption very localized. White cheese popular. Increasing consumption of milk in cities. Very low overall consumption of vegetables: mainly tomatoes and onions, some cabbages. Avocados, when in season, used as vegetable with staple. City dwellers tend to eat more vegetables than people in rural areas, and depend somewhat less on pulses. Small consumption of fruit in season: citrus, bananas, pineapples and mangoes. Sugar cane widely consumed as brown sugar.

40. Nutritional deficiencies: PEM+++ especially amongst infants and children under five years old in the rural areas; a principle cause of child mortality, associated with infectious diseases. Goiter is widespread but there is a particularly high incidence in Chinandega Department. Anaemia of uncertain aetiology is also a common problem, with severe cases amongst pregnant and lactating women. There appears to be some problem of vitamin A deficiency.

41. Medical supplies: Government agency responsible for import and distribution of medical supplies is Central de Abastecimientos Medicos (C.A.M.) J.N.A.P.S., Apartado Postal 6424, Managua, tel.: 4543. No restriction to importation through private channels. List of standard medicines available from CAM. No private pharmacies in rural areas. Instructions and labelling should be in Spanish.

42. Health Services: Health services are the shared responsibility of Ministry of Public Health, Junta Nacional de Asistencia y Prevision Social (JNAPS), local social assistance boards, Instituto Nicaraguense de Seguridad Social (INSS), and the army. Facilities include 49 institutions with approximately 4,300 beds. Ratio of beds to population varies widely (up to five-fold) between departments. Most of the doctors are concentrated in Managua, the capital city. Total facilities for medical care include 26 hospitals and 118 health centres. Numerous private institutions, mostly located in the capital and in the principal urban centres. Large use of traditional healers (curanderos) by rural population.

43. Capacity for handling refrigerated drugs: Cold chain admittedly unreliable.

MEDICO-NUTRITIONAL INFORMATION (Cont'd)

44. Common illnesses: Apparently gross underreporting of cause of death makes difficult to identify specific problems. Measles, tetanus, diphtheria: a persistent problem. Tuberculosis apparently highly prevalent. Poliomyelitis definitively still a potential threat, with recent outbreaks. Active foci of typhoid fever (Ciudad Dario). Leprosy on the Pacific Coast (Chinandega and Leon). Rabic reported in humans.
Malaria throughout the country, situation has recently worstened; insect resistance to insecticide; transmission year round; said to be no risk in urban areas. Chagas disease probably a largely underestimated problem. Leishmaniasis probably a widespread and unrecognized hazard in forest areas. Occasional cases of encephalitis.

MEDICO-NUTRITIONAL INFORMATION

39. Diet: Basically cereals: millet (also sorghum, maize and increasingly rice). Meat (poultry, mutton, goats, beef), pork not admissible (Moslem population). A number of local vegetables and leaves used fresh and dried as accompaniment to staple. Fat eaten in small amounts (peanut oil).

40. Nutritional deficiencies: PEM widespread, especially in children from 1 to 3 years; maximum April to August. Vitamin A deficiency frequently associated with PEM. Pellagra and scurvy also mentioned but precise information lacking. Important worsening of all nutritional problems during the last few years (drought) especially in nomads and whole population in Northern provinces.

41. Medical supplies: Lists of standard medicines for hospitals, medical centres and rural dispensaries available from Ministry of Health. Medicins for the most part imported from France. Supplies to be imported through ONPPC (Office National des Produits Pharmaceutiques et Chimiques, Niamey). Labelling: French only.

42. Health Services: Hospitals (with surgery, X-ray and limited laboratory facilities) in the 7 departmental towns (Centre Hospitalier Départemental); hospitalization wards in every district headquarters (34); resources of rural dispensaries quite limited. Total hospital beds: 3,000. Over 10% population is nomadic (500,000). Private health facilities and health facilities of non-governmental agencies of limited use.
Personnel: MOC (Directeur Départemental de la Santé) is the representative of the Ministry of Health in every department; physicians found in departmental towns only, none outside; medical assistants and midwives in charge in the "arrondissements" (districts). 17 maternal and child health centres, 42 rural dispensaries.

43. Capacity for handling refrigerated drugs: Several facilities for cold storage in Niamey only; these require careful selection after contact with local representatives. Facilities for transport and storage outside Niamey limited or nil.

44. Common illnesses: Very frequent and severe infections in children. Measles particularly threatening; unreliable immunization program exists. Tuberculosis widely spread; control program in progress through mobile teams and Primary Health structure. Leprosy prevalent in Southern provinces; control activities under way.

Malaria one of the main killers of children; important seasonal variations; maximum August to December. Diffused foci of schistomiasis haematobium throughout the country. Annual outbreaks of meningitis during the dry season (November to June). Onchocerciasis in East, and along, Niger river; internationally supported control program. Outbreaks of cholera during last few years. Poliomyelitis still transmitted.

MEDICO-NUTRITIONAL INFORMATION

39. Diet:

Staple food: tubers in the South: cassava; flour and yams; cereal grains in the North: sorghum and millet; Middle High Plateau: sorghum and sweet potatoes.
Rice, maize and plantains are also commonly eaten.
Staple food eaten with gravy made from local greens or dried leaves (baobab, amaranthus), cooked in vegetable oil (from groundnut, palm, coconut), peas and beans (cowpeas, locust beans), vegetables, onions, tomatoes, Always with a lot of pepper. Also beancakes.

Occasionally some meat (cattle or game) and fresh (on the coast) or dried fish.

Pork not admissible to Moslems (50 % population).
Now bread with tea used by some.
Milk: mainly in urban elites and pastoral populations in the rural areas.

40. Nutritional deficiencies:

PEM ++ spotty usually associated with other conditions or poor feeding habits (peak in dry season).
Anaemia + common in children and pregnant and lactating women.
Vitamin A deficiency mainly in the Northern part.
Occasional vitamin B1 deficiency.
Goiter + : around Jos, Pankslin, Ogoja, Obudu Nsuka, Oshun, Ekiti; higher in women. Some iodization of salt manufactured in the country, started recently.

41. Medical supplies:

All products manufactured outside Nigeria are checked at entry points.
Importation through private channels is authorized.
Directions written in English. Drugs sold at shop and markets all over the country.

42. Health services:

Health services are the joint responsibility of the Federal and State authorities. Federal Ministry of Health co-ordinates health services throughout the country. Each of the 19 States has a Ministry of Health. Structure is decentralized federally but highly centralized at State level.

Six university teaching hospitals located in Lagos, Ibadan, Benin, Zaria, Ife, Enugu.

In the State capitals and main cities, general and district hospitals. State governments run a number of health centres and clinics in rural areas which provide primary health care. Total number of health institutions is close to 5000 (over 42.000 beds).

In addition there are many hospitals, clinics, dental centres, eye clinics and other health institutions run by missions, commercial firms and private doctors.

A significant proportion of former non-government services are now run by government.

Health manpower include 3100 physicians (40 % expatriate), some 32.000 nurses and auxiliaries of various grades.

Traditional medicine widespread.

MEDICO-NUTRITIONAL INFORMATION (Cont'd)

Health facilities provided by major States include:

Borno: General hospitals in 10 cities, including Maiduguri. No private hospitals or clinics in the State. Epidemiological unit operating for control of communicable diseases.
Cross River 300 health institutions including 6 specialist hospitals and 6 private and community hospitals; specialized hospitals (mental, eye, TB, infectious diseases) in Calabar; Dunlop Group maintains 2 private hospitals (Akamkpa, Pamol, with total 75 beds).
Kaduna: 12 general hospitals; 4 specialist hospitals (private). a number of schools for training health personnel.
Lagos: Public health Department of Lagos City Council responsibl for Public Health. Infectious diseases hospital at Yaba. General hospitals in Lagos (Lagos General Hospital with most special services), Ikorodu, Epe, Badagry, Ikeja; also Lagos University Teaching Hospital. Orthopaedic Hospital in Igbobi.
Niger: 4 Governmental hospitals (Abuja, Kontagora, Minna, Bida). Epidemiological unit at Minna; onchocerciasis and yaws control units at Abuja.
Rivers: 7 general hospitals; 5 specialist hospitals (most in Port Harcourt); 5 mission and joint hospitals; 12 private and clinics (Port Harcourt).

43. Capacity for handling refrigerated drugs: Cold storage room in Capital, approximately size 10 x 15 feet. Cold storage facilities at periphery: irregular, dependant upon kerosene refrigeration. No cold chain.

44. Common illnesses: Tetanus a major problem, with high number of deaths. Measles + Tuberculosis control a high priority (screening programme in schools and BCG vaccination). Leprosy highly prevalent, but widespreed network of mobile, at times partially integrated, control units. Hepatitis (or presumed hepatitis) widespread, with high fatality. Ongoing transmission of poliomyelitis on significant scale. Yaws still existing and possibly on the increase.
Cerebro-spinal meningitis a major problem, especially Northern parts of country. Human rabies a very significant hazard, exact scale of the problem unknown.
Malaria, whole population at risk, including cities, transmission year round. Cholera, limited number of cases each year. Louse-borne typhus occasional (several States). Schistosomiasis, both vesical and intestinal, widespread and a potential threat in water development projects. Foci of onchocerciasis, control programme in development. Persisting transmission of yellow fever with human cases (possibly undernotified), occasional outbreaks, vaccination campaigns. Trypanosomiasis and important problem in Northern States (Benue, Plateau, Zaria). Some louse-borne relapsing fever. Smallpox eradicated.

MEDICO-NUTRITIONAL INFORMATION

39. Diet: Staple food is mainly rice and maize (prepared as tortillas). Some wheat is consumed in the form of bread and pasta. Also commonly eaten are plantains, cassava, yams and sweet potatoes, with the consumption of potatoes mainly confined to cities. Kidney bean is an almost daily feature of the diet, frequently cooked with rice as "guacho", a national dish. Some nuts (groundnuts, coconuts). Tomato is the most popular vegetable, also onions, garlic, cabbages and peppers. Fat is nearly all small amount of animal fat used in cities. Milk and milk products consumed in substantial amounts only in urban areas. Meat (mostly beef and pork, chicken on festive days) seldom eaten, except in areas of livestock production and in cities. Fish consumed in Panama City and Colon. Sugar cane as brown sugar (panela) or boiled syrup (raspadura). Indian Cunas (San Blas Archipelago) consume plantains and roots as basic diet; additional foods are fish, some pigs, chickens, turtles, and a variety of tropical fruits.

40. Nutritional deficiencies: PEM++ a problem amongst infants throughout the country (about 60% of children in rural areas suffer to some degree from malnutrition). Other principle problems on a national scale are anaemia and goiter, for which there is a salt iodization program in force. Vitamin A deficiency appears to be a particularly rural phenomenon.

41. Medical supplies: Most drugs and medical supplies are imported. There are drug manufacturing companies (apparently primarily drug repackaging plants). Responsibility for the import of drugs rests with the Departamento de Farmacia y Drogas, division of pharmacy, food and drugs at the Ministry of Health). Private pharmacists throughout the country apparently provide some kind of over-the-counter medical care.

42. Health Services: Health services are the shared responsibility of Ministry of Health, Caja de Seguro Social (Social Security), and Instituto de Agua y Alcantarillado Nacional (National Water supply and Sewerage Institute). Country is divided into 9 health regions under Regional Health Director responsible both to Ministry of Health and Social Security.The health institutions are grouped into 4 categories: (a) 25 integrated medical centres which carry out a high and broad range of basic activities + include the national hospitals in the metropolitan area (2 general, 1 pediatric and 1 psychiatric) (b) 20 health centres with annexed facilities (maternity and/or pediatric units) and 60 other health centres; (c) 110 health subcentres staffed by paramedical personnel, provide limited health care; (d) health posts in rural areas provide minimal health care by paramedical personnel. Three quarters of the doctors are apparently concentrated in Panama City and Colon.

MEDICO-NUTRITIONAL INFORMATION (Cont'd)

43. Capacity for handling refrigerated drugs: Cold storage facilities at Belisario Porras airport and at the Ministry of Health. Social Security hospitals have refrigeration facilities. Domestic refrigerators in health centres.

44. Common illnesses: Enteric diseases aggravated by malnutrition are major causes of death in infants. Typhoid fever endemic; sporadic outbreaks. Tuberculosis is a major problem, especially in Darien, Colon and Veraguas, but declining in country as a whole. Poliomyelitis and tetanus apparently being put under control through vaccination. Still cases of diphtheria. Gonorrhea predominant among venereal diseases; syphilis also widely prevalent. Malaria still endemic in limited areas of the Western provinces of Bocas del Toro and Chiriqui, of the Eastern provinces (San Bals Territory and Jaque in Darien province); transmission year round; no risk above 700 m.; no risk in urban areas. Occasional cases of jungle yellow fever. Possible risk of reintroduction of urban yellow fever in Panama City. Chagas disease on Western bank of Canal, throughout Cocle Province. Accidents apparently constitute a severe problem.

MEDICO-NUTRITIONAL INFORMATION

39. Diet: Basic staples are many and diverse. Sweet potatoes (kau kau) the most popular, with over 450 different kinds; sago (as starch from palm-tree) widely consumed in coastal regions and swampy areas; other staples include cassava (tapioca), yam, taro (common taro and chinese taro) in coastal areas (not in Highlands), and a large variety of bananas. Rice is consumed in towns, also produced in West Sepik, a most acceptable substitute staple. Bread is consumed in cities, but wheat is not acceptable as substitute in most areas. Irish potatoes popular in Highlands.

Pulses include a large variety of beans (wingbeans most popular in Highlands), peas, (cowpeas) and peanuts. Soya beans not popular and not well accepted. Green vegetables include a large variety of leaves: tulip, amaranth, "aibika" (most consumed), "Kangkong", tapioca leaves, pumpkin tips. Little consumption of fruits, except bananas, also coconut (not in Highlands).

Meat essentially chickens and pig (for feasts) in rural areas, wild game (mainly oppossum). Fish in coastal and riverine (Sepik) areas.

Fresh milk not usually consumed. Consumption of concentrated canned milk spreading even in rural areas, taken with tea and sugar.

40. Nutritional deficiencies: Malnutrition in children reported as widespread (PEM), but apparently not a major and general problem. Anaemia however is prominent. Goiter formerly highly prevalent and with endemic cretinism, considerably on the decrease; salt iodization enforced on national level.

41. Medical supplies: National Health Department, P.O. Box 2084, Konedobu, Port Moresby, is responsible for purchasing and distribution of pharmaceutical supplies to government services. Private import is free.
There are base medical stores at Lae, Madang, Mt. Hagen, Rabaul and Wewak.
Standard list of medicaments for use in Government facilities ("Medical Store Catalogue") available from National Health Department. There is a "Drug Dosage and Procedure Book" for Health Extension Officers" available from College of Allied Health Sciences, Madang.
Labelling should be in English.

42. Health Services: Responsibility for health is decentralized at province level (19 provinces). Policy at national level is established by National Health Department. Health services delivered concurrently by public servants and churches working in very close cooperation.

MEDICO-NUTRITIONAL INFORMATION (Cont'd)

Structure of health services is three-tiered, with Aid Posts (Aid Post Orderlies in charge with elementary training) giving primary health care and serving a couple of villages, approximately 1,000 - 2,000 people level of service rudimentary; health centres and subcentres covering 5,000 to 20,000 people (Health Extension Officers in charge with quite elaborate training); referral Provincial Hospitals (physician, surgery, X-Ray, laboratory) in the capital city of each province. Base hospitals with specialized services and consultant physicians in Port-Moresby (University of Papua New Guinea), Goroka, Lea, and Rabaul. Referral service well articulated.
Private practice allowed. A few private practitioners, in main towns only.

Traditional medicine widespread and used concurrently with primary health care in rural areas.

43. Capacity for handling refrigerated drugs:

Cold storage available at Jackson Airfield, Port-Moresby; at the Central Supply Store, Health Department, Port-Moresby; at the Base Medical Stores in Lae, Madang, Mount Hagen, Rabaul, and Wewak; in all provincial hospitals; and in health centres (domestic refrigerators).

Most in-country transportation is by air; cold chain depends on accessibility by plane.
Dry ice available in Port-Moresby and (check) in Lae.

44. Common illnesses:

Among cosmopolitan diseases, acute respiratory illnesses (pneumonia) is prominent. Entero-parasitic diseases widespread but apparently not a problem; occasional cases of typhoid fever; bacillary dysentery apparently frequent. Very high incidence of hepatitis. Tuberculosis a major problem, particularly in Port-Moresby. Leprosy more prevalent in Eastern part of the country (Sepik, Highlands, Western Gulf). Skin infections highly prevalent especially in lowlands; scabies everywhere. Sexually transmitted diseases include beyond gonorrhea (widespread) and syphilis (in Port-Moresby and on highland highways), donovanosis in Port-Moresby (a focus with an exceptionally high prevalence) and also in Law. Other peculiarities in the Highlands include sweeping epidemics of influenza with high fatality rate, and pigbel (a necrosis of the intestine) occurring as epidemics in children. Kuru now rare among the Fore people, only in adult, localized. Various forms of arthritis reported as frequest. Measles widespread but remarkably benign. Rabies does not exist.
Malaria is by far the most prominent health problem in the country, hyperendemic, severe, widespread below 1,800 meters, increasing; control largely ineffective. Less of a problem, at least for the moment, in New Britain and New Irelahd.

Venomous snakes plenty, 3 species on South Coast (polyvalent vaccine), 1 species in North.

MEDICO-NUTRITIONAL INFORMATION

38. Diet: Diet is generally inadequate and unbalanced particularly in females and preschool children. Cash-crop production, poor distribution, inadequate storage, lack of dietary education and socio-economic factors are all causes of malnutrition. Staple food is wheat, maize (hilly and Northern sub-mountaneous tracts of NWFP) and rice; to lesser extent millet (especially when there is shortage of other food). Numerous pulses (gram, rung, lentils, mash, moth). Various green vegetables used in curry and some as salad. Milk and milk products are commonly used. Fruits (fresh or dry) consumed widely in Northern areas (Gilgit and Skurdu). Meat is eaten occasionally, some fish where available. Pork not consumed. Cooking oil: vegetable, but in small amounts, and some animal fat.

40. Nutritional deficiencies: PEM : widespread and a major problem, said to effect close to 60 % of children below 5, with ⅓ of these suffering from prolonged nutrition deprivation. Anaemia, from various causes, generalized. Rickets and calcium deficiency in urban areas. Riboflavin deficiency is reported. Recent surveys have not confirmed an earlier suspicion of wide-spread deficiency of vitamin A. High prevalence of goiter in North-East (fortification of salt with iodine under way).

41. Medical supplies: Ministry of Health ultimately responsible for official import of drugs (Ministry of Health, Islamabad, tel.: 20930, telex: SEHAT). About 70 % of drugs manufactured locally from raw materials by some 250 firms. Import through private channels authorized. National Formulary of Pakistan, listing all drugs for use in the country, published by Ministry of Health. Total number of registered chemists druggists about 15,000. Medicaments distributed free of charge through Government hospitals and dispensaries. Directions be written in English (or Urdu).

42. Health services: There is a central Ministry of Health but health care is essentially a provincial concern (4 provinces) with a three-tiered structure: province, district and subdistrict. Health facilities generally are insufficient and inadequate, with poor supervision, limited equipment and supplies, and insufficient manpower, some 500 hospitals containing 29,000 beds. Rural facilities (approximately 3000 dispensaries, 700 materna) and child health centres. 170 rural health centres, 370 basic health units) run by auxiliaries are mostly understaffed and undercquipped. Referral and supervision are insufficient. 80 % of physicians live in urban areas (ratio of physicians to population in rural areas 1: 25.000). Bed/population ratio is 1: 13,000 in rural areas. There is an acute shortage of auxiliary personnel. Traditional healers (hakims and vaids) are said to outnumber doctors (40,000); they use modern medicines along with traditional methods; important role in rural areas. Semi-public and/or private sector is diverse: Institute of Social Security, Universities, Water Power Development Authority, Towns councils, Armed Forces, jails, Airlines, etc., all maintain their own health services.

MEDICO-NUTRITIONAL INFORMATION (Cont'd)

43. Capacity for handling refrigerated drugs:

No cold storage facilities for drugs at Karachi Airport, No cold chain operating within Ministry of Health. Kerosene or electric refrigerators in health facilities down to subdistrict level, capacity varies. Private pharmacies often have cold storage facilities. Wet ice available commercially for refrigeration of specimens, only during summer time. Cold chain occasionally available in other agencies, inquire at National Health Laboratories. Chack Shahzad, Islamabad. No dry ice available.

44. Common illnesses:

Enteric diseases + with high mortality: relative importance of the various types unknown since specific diagnosis seldom possible; amoebiasis and bacilary dysentery present; no tapeworms; salmonellosis including typhoid reported but extent unknown, seems to affect mainly children. Poliomyelitis: very large number of cases, over 2,000 reported in 1976; vaccination available only in large cities. Tetanus + (including newborn with high fatality). TB a massive public health problem, and said to be increasing, estimated total number of active cases over 1 million. Leprosy relatively a minor problem, foci restricted to North and along the coast. Rabies endemic.
Insufficient data to assess importance of a number of communicable diseases, such as meningitis, measles, diphteria whooping cough.
Malaria a major problem; whole country below 2,000 m at risk, including cities; 10 million cases estimated in 1974; transmission March-October, highest when monsoon rains are heaviest and in poorly-drained areas, also in riverine plains flooded due to unusual precipitation; transmission July-September only in NWFP, Baluchistan & Punjab ; resistance to some insecticides.
Dengue endemic; summer and early autumn; mild but potential threat of explosive outbreaks.
Trachoma + could affect over 50 % of population, a major cause of blindness. Leishmaniasis both visceral (NE) and cutaneous (SW), transmission highest November-February, especially rural areas and affecting young adults.
Frequent outbreaks of cholera. No smallpox since 1974. Plague not a major problem but does still occur (Bahawalpur). Louse-borne typhus foci in Dera Ismael Khan, Multan & Peshawar, also in the NW part of country (tribal groups) and Gilgit district, highest incidence late winter and early spring. Tick born typhus occasionally reported. Murine typhus reported in the cities. Scrub typhus probably underdetected, especially N. No louse-borne relapsing fever reported but possibly present in the mountainous regions along the N.W. border. Focus of viral haemorrhagic fever in N.E. (Murree Hill), 1976. Last case of smallpox 1974; disease declared eradicated.