

memorandum

DATE: 10 July 1979

REPLY TO
ATTN OF: *Thomas W. Georges (MD)*
AFR/DR/HN, T. W. Georges, Jr., MD

SUBJECT: Copy of Health and Nutrition Functional Review Document

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TO: SEE DISTRIBUTION

The Health and Nutrition Functional Review is scheduled for Wednesday, July 11, at 2:30 p.m. in Room 5951, N.S. building.

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FUNCTIONAL REVIEW
AGENCY FOR INTERNATIONAL DEVELOPMENT
AFR/DR/HN
HEALTH, POPULATION, AND NUTRITION
FY 1979 - FY 1981

SUMMARY OF HEALTH AND NUTRITION FUNCTIONAL REVIEW

I. INTRODUCTION

Economic underdevelopment is a fact of life in Africa. These economic factors impact upon the provision of health services and the improve health status.

Some indicators of economic underdevelopment are:

1. Average per capita GMP in rural areas of Africa is less than U.S. \$100.
2. Annual rate of growth in most of African countries is around 4%.
3. Average per capita annual expenditure on health is below one U.S. dollar.
4. School enrollment in the order of 20% of school-age children.
5. Annual rate of population growth in 1974 was between 2.0% to 2.9%.

II. HEALTH CONDITIONS IN AFRICA

Africa's life expectancy rate is around 43 years which is lower than Asia (53 years), Latin America (59 years), and Industrialized Nations (62 years).

Both general and infant mortality rates are very high in Africa. General mortality in some areas is in the 21-25 per 1,000 range. Infant mortality is reported between 150-154 per 1,000.

The morbidity rate in rural areas of Africa is extremely high with a large number of preventable diseases and nutritional deficiencies.

The shortage of qualified personnel is a factor in impeding the development of health services. Some countries report population to personnel ratios such as these:

- 24,000 people to 1 physician (27 countries)
- 3,000 people to 1 nurse (25 countries)
- 33,000 people to 1 sanitarian (25 countries)

III. HEALTH PROBLEMS IN AFRICA

The major health problems, from a disease standpoint, are stated to be malaria, tuberculosis, leprosy, helmonthiasis (worms), schistosomiasis, diarrheal diseases and dysentery.

Other health problems are:

1. Maternal and Child Health Problems
2. Communicable Diseases
3. Other Parasitic Diseases
4. Bacterial Diseases
5. Neonatal Tetanus
6. Viral Diseases
7. Nutrition of Mother and Children
8. Malnutrition and Disease
9. Occupational Health
10. Mental Health
11. Oral Health

IV. U.S. AID DEVELOPMENT POLICY AND PROGRAM ON DEVELOPMENT ASSISTANCE IN HEALTH

The ultimate objective of this Agency's policy is to improve the quality of life in the developing countries. Health, by definition, is a measure of population quality.

Five major problem areas are identified by leaders of developing countries themselves.

1. Absence of National Systems to deliver Health, Nutrition, or Population services to the majority.
2. Absence of effective national planning.
3. Rapid population growth.
4. Malnutrition.
5. Environmental Risk to Human Health.

A.I.D. POLICY

The legislative base for health policy includes the following principal provisions:

1. Concentrate assistance on the poorest countries.
2. Prevent and combat diseases and help provide health services for the great majority in disease prevention and environmental sanitation.
3. Reduce human malnutrition.
4. Increase opportunities, and motivation for family planning and reduce the rate of population growth.

HEALTH AND NUTRITION POLICY

It is the policy of the Africa Bureau to develop projects which fit into the health plans of host countries, national health plans where such plans are available. In addition, the Bureau makes every effort to explore with other donors and international organizations, areas for cooperation and coordination - both in terms of finances and program activities.

The Africa Bureau gives priority consideration to assisting countries in the areas indicated below:

- Integrated Rural Health Delivery Systems.
- Endemic Diseases Control Programs/Activities.
- Family Health/Nutrition/Family Planning Programs
- Nutrition Improvement and Intervention Programs
- Rural Water Supply and Environmental Sanitation
- Special and Selected Programs

VIEW OF FUNDING TRENDS OF AFRICA BUREAU'S HEALTH, NUTRITION AND POPULATION PROJECTS

General Programs:

<u>1979</u>	<u>1980</u>	<u>1981</u>
\$1,590	\$48,601	\$75,366

Special Programs:

<u>1980</u>	<u>1981</u>
\$20,468	\$16,100

Other Programs:

<u>1979</u>	<u>1980</u>	<u>1981</u>
590	\$48,601	\$75,366
913	<u>20,468</u>	<u>16,100</u>
<u>503</u>	69,069	<u>91,466</u>

TOTAL FUNDING:

<u>1979</u>	<u>1980</u>	<u>1981</u>
\$77,500	\$65,300	\$100,560
57,375	59,085	58,153
13,000	<u>25,300</u>	<u>58,470</u>

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I. INTRODUCTION

BACKGROUND

The need for improved health care in Africa is self-evident and attested to by studies published by the World Health Organization and others, including the Agency for International Development (AID). The problems of providing health care are compounded by the fact that most of the people living in Africa have per capita incomes of less than \$300 per year. Such extreme poverty is manifested not only by scarce resources and services, but also by environmental hazards, lack of information, illiteracy, and behavioral patterns that add to the burden of ill health.¹ Overall, Africa's problem is one of economic underdevelopment with its accompanying poverty and malnutrition of the rural masses.

What are some of the indicators of economic underdevelopment?

1. The average per capita GNP for the rural areas of Africa appears to be less than US \$100. This is one of the lowest in the world.²
2. The annual rate of growth of the economy in most African countries is estimated at around 4%.³
3. The average per capita annual expenditure on health has been estimated at below one US dollar.⁴
4. There are very few schools in the rural areas, resulting in a high incidence of illiteracy. School enrollment in most countries is of the order of 20% of school-age children.⁵
5. The annual rate of population growth in 1974 for most African countries was between 2.0% to 2.9%, with Sudan, Zambia, and Kenya at 3.0% or more.⁶

Many of the problems listed above are beyond the capability of any health system to solve alone.

"The central dilemma is that poverty, rapid population growth, inadequate nutrition, and health are interdependent. Inadequate food supplies lead to widespread malnutrition. Malnutrition lowers resistance to infection and adversely affects the course of many diseases. Children made vulnerable by malnutrition are continually exposed to numerous infections in unsanitary environments. Even moderately high mortality rates among infants and children contribute, in turn, to extremely high fertility rates, because living children are the main source of old age security for

parents. About 90 percent of the people in most developing countries have no access to modern health, family planning, or nutrition services, and governmental budgets for those services are often as little as \$1 per person per year. As populations multiply geometrically, food production and health services fall behind and higher birth rates result in less food per capita."⁷

¹"Strengthening U.S. Programs to Improve Health in Developing Countries." Committee on International Health, Institute of Medicine, National Academy of Sciences, Washington, DC, April 1978.

²Health Care in Rural Areas. AFRO Technical Papers, No. 10. Regional Office for Africa, WHO, Brazzaville, 1975, pp. 9-10.

³ibid, p. 10.

⁴ibid, p. 10.

⁵ibid, p. 10.

⁶Office of Population, Bureau for Population and Humanitarian Assistance, Agency for International Development, February, 1976 (supplement to May, 1976 mailing).

⁷Op cit, Strengthening U.S. Programs to Improve Health in Developing Countries, p. ES2.

II. HEALTH CONDITIONS IN AFRICA

For the developing countries as a group, life expectancy at birth is about 51 years. Life expectancy at birth in sub-Saharan Africa is now about 43 years; in Asia it is about 53 years, and in Latin America, about 59 years. In contrast, life expectancy in industrialized nations is about 62 years

The low life expectancy at birth in many developing countries is largely attributable to very high death rates among children. There are countries in which one-third of children fail to reach the age of five. In much of Africa, half of all deaths occur among children under the age of five. For example, a demographic survey conducted in Rwanda during the first six months of 1970 yielded the following data:⁸

--general mortality	=	21.9 0/00
--infant mortality	=	132.8 0/00
--mortality in children aged 0-5	=	300-330 0/00
--fertility rate	=	228 0/00
--birth rate	=	50.3 0/00
--number of women aged 15-44	=	21.0/00 of the total population

Mortality rates are extremely high in Africa. Diarrheal diseases are one of the leading causes of sickness and death. It has been estimated that in some African countries, they head the list of fatal diseases and account for as many as half the deaths of children during the first years of life, and one-third of all deaths among the general population. Malnutrition increases susceptibility to, as well as the severity of, diarrheal diseases, which in turn lead to diminished food intake and nutrient wastage. Communicable diseases are a top priority, because they cause a high rate of infant mortality in Africa.

Therefore, mortality rates are extremely high in Africa, the chief causes of which are communicable diseases and malnutrition in the presence of inadequate health services. The following examples are illustrative:⁹

- still birth rate is between 40 to 45 per 1000;
- neonatal death rate is between 60 and 70 per 1000;
- infant mortality rate is around 150 per 1000;
- crude death rate in the total population is probably about 25 per 1000.

⁸ AFRO Technical Papers, No. 14, WHO, Brazzaville, 1978, p. 51.

⁹ AFRO Technical Papers, No. 10, WHO, Brazzaville, 1975, p. 9.

The morbidity rate in the rural areas of Africa is extremely high in view of the prevalence of numerous preventable communicable diseases and nutritional deficiencies. Some preventable causes of morbidity and mortality in rural areas in Africa are listed below:

1. Gastroenteritis
2. Malaria
3. Measles
4. Upper respiratory tract infections
5. Malnutrition
6. Tetanus
7. Meningitis
8. Pneumonia
9. Tuberculosis
10. Chronic ulcer
11. Schistosomiasis
12. Ankylostomiasis
13. Ascariasis
14. Typhoid
15. Guineaworm
16. Poliomyelitis
17. Leprosy
18. Whooping cough
19. Gonorrhoea
20. Syphilis
21. Trachoma
22. Onchocerciasis
23. Trypanosomiasis
24. Accidents
25. Cholera

A survey conducted in Nigeria illustrates the incidence of some of the above diseases:

--Schistosomiasis: 45% to 80% of school children in rural areas of the northern part of Nigeria suffer from this disease.

--Malnutrition: 50% of children attending clinics have evidence of this condition.

--Malaria: 70% of children attending clinics have parasites in their blood.

--Roundworms: 20% to 30% of all people in the rural areas have ova in their stool.

--Anemia: 20% of all people have some degree of anemia.

The shortage of qualified personnel is a factor in impeding the development of health services in Africa. This shortage relates to physicians as well as other health professionals and workers. The few trained personnel that are available are so unevenly distributed that most areas are left without any form of professional coverage. The following data from some countries shows the population to personnel ratio:¹⁰

- 24,000 people to 1 physician (27 countries)
- 3,000 people to 1 professional or auxiliary nurse or midwife (25 countries)
- 50,000 people to 1 medical assistant (16 countries)
- 33,000 people to 1 middle grade or auxiliary sanitarian (25 countries)
- 88,000 people to 1 middle grade or auxiliary laboratory technician (24 countries)

The distribution of physicians between capital cities and the rest of the country in a few countries is shown below as an example of maldistribution:

<u>Country</u>	<u>Population/Physician in Capital</u>	<u>Population/ Physician in rest of country</u>
Gabon	1,000 - 1,999	10,000-19,000
Zambia	1,000 - 1,999	10,000-19,000
Kenya	1,000 - 1,999	20,000-29,000
Uganda	1,000	30,000-39,000
Cameroon	1,000 - 1,999	30,000-39,999
Sierra Leone	1,000 - 1,999	30,000-39,999
Ivory Coast	2,000 - 2,999	30,000-39,999
Senegal	2,000 - 2,999	40,000-49,999
Tanzania	2,000 - 2,999	40,000-49,999
Guinea	5,000 - 5,999	90,000-99,999

III. Health Problems in Africa

A. General

The health problems in Africa are tremendous

¹⁰The World Health Organization in Africa, 1975.

and complex. The solutions to these problems are made difficult by climatic conditions, the magnitude of diseases, scarcity of resources of all types (i.e., financial, health workers, health facilities, commodities and supplies, and transport/communication). The problems are accentuated by direct linkages of diseases (e.g. parasitism and malnutrition; hyperfertility and excessive maternal and infant morbidity and death rates). There are also direct and indirect linkages between health and socio-economic development (e.g., poor health decreases productivity; requires disproportionate amount of resources in a fragile economy and fertile lands lie fallow because of health hazards such as "River-blindness; Sleeping Sickness, and Malaria). In addition health systems are characterized by skewed patterns of access and types of services. Urban based curative (medical) health services predominate to the extent that 75-80% of rural population in most African countries receive no organized health services whatsoever. Environmental sanitation and safe water supply, conditions which are readily available in the developed world, are either non-existent or extremely difficult to acquire for the overwhelming majority of African populations.

B. Specific Health Problems

The major health problems, from a disease standpoint, are stated to be malaria, tuberculosis, leprosy, helminthiasis (worms), schistosomiasis, diarrheal diseases and dysentery. In regards to childhood illnesses, the infectious and communicable diseases (measles, polio, tuberculosis meningitis), diarrheal diseases, parasitism and malaria predominate. All of these conditions are aggravated in children by associated malnutrition.

1. Maternal and Child Health Problems

The major problems associated with this group of high risk and underserved populations are related to hyperfertility rates, infections and parasitic diseases, communicable diseases, diarrheal diseases, and malnutrition. The following are some salient points:

- Due to prematurity, infections and communicable diseases and diarrheal diseases, on an average 50% of children die before age of 5 years.
- Maternal and infant morbidity and mortality rates on an average are the highest in the world, being more than 10 times as high as in the developed world.
- Measles is one of the principal causes of deaths in children and when combined with other problems such as malnutrition and parasitism, is the leading cause of death. This disease is preventable by immunizations, however, because of fiscal, budgetary, infrastructure and logistics ("cold-chain" etc.) remains uncontrolled in Africa.
- Diarrheal diseases, which are mainly caused by poor environmental sanitation and lack of safe water supply.
- Fertility and population growth rates are the highest in the world, the latter averaging more than 3%. As a consequence the health status of mothers and children is poor; 40% of population is less than 15 years of age; and there is rapid increase in population and drain on the fragile economy.

2. Communicable Diseases

A. Malaria

For the 269 million people of Africa south of the Sahara, malaria is the most important health problem, causing one million deaths annually

among children under 14 years of age, according to a recent statement by the Director of the Malaria Division of WHO/Geneva. There are no accurate figures on the total incidence of malaria in Africa. However, many areas are holoendemic with virtually every man, woman and child having malaria at least once each year. In the area of Kisumu in Kenya it has been estimated by W.H.O. that every individual receives an average of 90 bites from malaria infected mosquitoes each year. It is probably safe to estimate that there are over 200 million cases of malaria in Africa every year, or many times more than all the rest of the world put together.

Most of Africa has no organized antimalaria program. Present activities by the Health Services are largely confined to diagnosis and treatment which have no effect on the endemicity of malaria.

A recent W.H.O. report states, "In the African Tropics, malaria is an insidious, ever-present enemy, killing infants and young children, sapping the energy and strength of the people, interfering with education, decreasing labor output, and preventing or slowing down economic development. And yet, because of the absence of epidemic malaria, this steady wastage of life and human assets is not conspicuous or dramatic enough to draw greater attention."

In Northern Africa anti-malaria programs have been generally successful, though in Ethiopia and Sudan only partially so. However, in tropical Africa south of the Sahara, of 20 W.H.O. sponsored pilot projects to demonstrate the feasibility of interrupting transmission of malaria by the standard techniques of malaria eradication, most resulted in failure. The present approach of carrying out all malaria activities through the basic health services also appears unlikely to reduce the level of malaria. The recent W.H.O. - sponsored "Inter-regional Malaria Conference for Countries where time limited Malaria Eradication is impractical at Present", held in Brazzaville in November 1972, was an attempt to stimulate the African countries to give a higher priority to anti-malaria measures. There was little indication at the conference of plans for any approach other than diagnosis and treatment which, of course, does not reduce the total amount of malaria appreciably and, according to W.H.O. estimates, takes up from 18 to 30% of the time of the Health Services in the Tropical African countries.

Eradication of malaria in Tropical Africa south of the Sahara is not considered practicable at the present time because of lack of an effective

technology as well as lack of resources, both human and material. However, it is considered possible and essential to reduce the amount of malaria in these countries as a necessary prerequisite to socio-economic development.

Given the past history, almost tradition, of failure of anti-malaria efforts in tropical Africa and the defeatist attitudes of many government officials, it appears highly unlikely that appreciable progress will be made without external assistance and much stronger international encouragement than has been provided heretofore. The specific recommendation on Africa made by the 1960 ICA Expert Panel on Malaria was never implemented, but is worthy of consideration. It is as follows:

The United States give separate consideration to tropical Africa; ICA cooperate intimately with W.H.O. in planning eradication for Africa as a single program; the United States take the initiative, without prejudicing malaria eradication elsewhere, possibly by creating an African Malaria Fund, and seek the participation of other nations.

Since that recommendation was made, the principal change has been a worsening of that situation in view of the establishment of the futility of using standard malaria eradication techniques in the savannah areas of Africa. W.H.O. has set up a multi-disciplinary research project in Nigeria to develop effective methods of interrupting transmission of malaria in tropical Africa.

External assistance is most urgently needed in several areas.

1. Technical training of professionals including malariologists, epidemiologists, entomologists and engineers.
2. Development of national training programs for sub-professionals.
3. Development of regional and national applied research capabilities within Africa.
4. Support of selected operational research projects.
5. Support of pilot projects to test new or improved methods as they are developed.
6. Development of an awareness of and proper utilization of mosquito source reduction and prevention techniques. (Source: File Note, Edgar A. Smith, DS/HEA, Jan. 4, 1979)

B. Other Parasitic Diseases

The other major endemic parasitic diseases are onchocerciasis ("Riverblindness"), schistosomiasis ("Snail-fever"), trypanosomiasis ("Sleeping-sickness"), hookworm and filariasis. The following are some salient points on these conditions:

- Onchocerciasis affects more than 20 million people in Africa, causing more than 200,000 cases of blindness disability and death.
- Schistosomiasis (*Schistosoma haematobium*, the urinary form, and *S. mansoni*, the intestinal and liver form) affects approximately 100 million Africans, and because of its chronicity, the children infested with the disease are doomed to life-long morbidity and disability. This disease affects children and adults and the infestation rate may be as high as 60-70 percent among school-age children, ranging up to 90 percent in some groups.
- Schistosomiasis is wide-spread throughout practically all of Africa and is primarily related to poor hygiene including lack of safe water, improper disposal of human excreta of infested individuals and to snails which breed in rivers and lakes and are frequently associated with irrigation and water resources development projects. These snails serve as the intermediate host in the life cycle of the parasites.
- Trypanosomiasis primarily affects livestock animals and animals used for traction as well as game animals; thus it poses a significant constraint to socio-economic (rural) development in many parts of Africa. It must be kept in mind, however, that despite the apparently low number of new cases ($\pm 100,000$ each year) these are among an estimated 50 million Africans at risk from the disease which, if untreated, is usually fatal. This makes current surveillance activities expensive and difficult.
- Hookworm affects millions of people in tropical and sub-tropical Africa, and is a significant cause of malnutrition and anemia. Hookworm is spread by people walking barefoot on soil polluted with human excreta.
- Filariasis is a mosquito-spread systemic parasite disease affecting millions of people throughout sub-tropical and tropical Africa. The important reservoirs for the filaria are man and monkeys.

C. Bacterial Diseases

The major health problems of Africa caused by bacteria include tuberculosis, leprosy, yaws, whooping cough, pneumonia, diarrhea and dysentery, meningitis, syphilis, gonorrhoea, and neonatal tetanus. African tick-borne typhus and typhoid are important in certain areas, as is relapsing fever.

1) Tuberculosis

The high prevalence of tuberculosis throughout Africa can be correlated partially with population movements and the current urbanization process. While the exact incidence for the continent as a whole is not known, data on incidence in East Africa in the late 1690s are illustrative of the extensiveness of the problem. "The number of people infected amounts to half a million every year; the disease develops in 60,000, the diagnosis is made in 20,000, but the successful treatment is given to 10,000."¹¹

Tuberculosis is a classical disease of poverty and overcrowding and substantial evidence suggests that malnutrition contributes both to susceptibility to infection and severity of the disease. There are currently many methods of diagnosis and of effective chemotherapy for tuberculosis; there is also immunoprophylaxis with BCG. These have facilitated control of the disease in the industrialized nations, although the main tuberculosis control factor in these nations has been a general improvement in the standard of living. In the industrialized world the emphasis has shifted from the treatment of individual patients to public health programs that involve detection of cases and their control. Conditions in the developing world preclude this approach. The prevailing malnutrition interferes with case-finding, because skin-testing may give falsely negative results. Malnutrition may also interfere with the efficacy of chemotherapy. As Dubos stated over a decade ago, "No drug, however potent, can control disease completely in populations with a low standard of living and poor nutrition."¹²

2) Leprosy

Leprosy, another chronic communicable disease, affects all age groups and is a serious health problem in Africa. It has a prevalence of approximately 10 cases per 1,000 population in some parts of Africa, and as much as 50 cases per 1,000 population in a few areas

¹¹"Towards a Philosophy of Health Work in the African Region," Regional Office for Africa, World Health Organization, Brazzaville, 1970.

¹²"Strengthening U.S. Programs to Improve Health in Developing Nations," Institute of Medicine, April, 1978.

of the continent. (Source: Institute of Medicine, "Strengthening U.S. Programs to Improve Health in Developing Nations," April 1978.) The two current W.H.O. programs, immunization (IMLEP) and chemotherapy (THELEP), are supported in part by A.I.D. through its contributions to TDR (Special Program of Research and Training in Tropical Diseases).

3) Yaws

Yaws is an acute and chronic relapsing, infectious, contagious, nonvenereal, spirochetal disease caused by Treponema pertenue. It is characterized by three stages: an initial ulcer or granulomatous skin lesion, the "mother yaw"; nondestructive secondary lesions of the skin, bones and periosteum; and, finally, destructive deforming lesions of the skin, bones, and periosteum. Onset is rare before the age of 18 months. The disease may extend over 40 years or more, causing ill health and disability.

Yaws is restricted to the tropical zone, and is prevalent throughout equatorial Africa, where it is usually found in areas remote from urban-centered health care systems. The disease is favored by situations where housing is crowded, clothing scant, feet bare, and soap absent.

Treatment with penicillin is very effective, and the cases decrease with improvement in socio-economic standards.

4) Diarrhea and Dysentery

While virtually everyone in Africa periodically suffers from diarrhea of varying degrees of severity, the problem is particularly acute among young children and infants especially during the weaning period. Diarrhea is largely caused by impure drinking water, insufficient amounts of water for minimal cleanliness, and unsanitary disposal of human waste. Thus, the institution of environmental sanitation and related health education programs is of major importance in alleviating this health problem. Diarrhea can, by itself, lead to problems of dehydration and malnutrition; at the same time, through its synergistic effects, it can exacerbate other illnesses. Diarrhea is an especially serious problem among young children who often are at least slightly malnourished, are exposed to other major disease problems, such as measles and malaria, and are least able to avoid contact with unsanitary environmental conditions.

Much remains to be done to determine the optimum therapy for diarrhea, both acute and convalescent stages, and to understand the mechanisms and importance of the many metabolic disturbances that occur during these infections. Oral rehydration therapy has proven quite effective in the treatment of cholera and other diarrheal diseases.

5) Neonatal Tetanus

Tetanus of the newborn remains a serious problem, even though there is an effective vaccine that can be administered to pregnant women and to women of child-bearing age to protect their newborn infants. To solve the problem a system for distributing and administering this vaccine would have to be instituted and continued as long as cultural practices surrounding birth continue to promote the infection.

D. Viral Diseases

The major health problems caused by viruses in Africa are measles, poliomyelitis and infectious hepatitis. Much of the morbidity and mortality in very young infants may be due to the rotavirus infantile diarrhea. No less common are a variety of respiratory infections that are a major cause of debility, and probably are viral in origin. Other viral infections include influenza, yellow fever, trachoma, hemorrhagic fevers and rabies.

1) Measles

Measles is one of the principal causes of death in African children.

Until the development of measles vaccine, the disease was only scantily reported. More recent figures based on immunization campaigns, while still incomplete, indicate that measles is common throughout the region.

This upper respiratory infection is especially fatal when infection occurs among already malnourished and parasitized children, notably in the rural areas. In addition, measles tends to be more lethal in tropical than temperate climates because of the early age at which children in the tropics are infected. It often acts in a synergistic way in children in various stages of malnourishment and malaria to further increase mortality among young children.

2) Poliomyelitis

Poliomyelitis, although virtually eradicated from the western world through use of live or killed vaccines, continues to be a major problem in some African countries. Not only has vaccine not been administered to sufficient numbers of children in the developing countries, but also an unforeseen problem has arisen: the oral vaccine has not been as effective for children in Africa as in the industrialized countries. The reasons are not understood, but the consequence is that vast numbers of children have not been, and apparently cannot be, successfully immunized using current methods.

3) Hepatitis

Hepatitis is endemic in much of Africa, its spread being promoted by poor environmental sanitation. This infection may be responsible for severe liver damage, and on a long-term basis, for cirrhosis and cancer. No vaccine is currently available and the development of an effective vaccine is urgently needed.

3. Nutrition

Nutrition underlies all aspects of health beginning with embryonic development and continuing throughout life. Malnutrition may result from inadequate or excessive nutrient intake, as well as nutrient imbalances and from host factors that interfere with proper absorption and utilization of these nutrients. Inadequately nourished individuals are incapacitated in many respects. They are stunted and wasted, their resistance to infection is lowered, their work capacity is reduced, and their productivity is lowered. Moreover, prolonged early undernutrition can contribute to impaired learning capacity and intelligence.

A. Nutrition of Mothers and Children

Basic biological nutritional requirements often are proportionately greater for women and children. Adequate diets for pregnant women are essential for the health of both mothers and children. In developing countries, diets during pregnancy tend to be inadequate in calories and protein. Poor diets lead to low birth weight infants with increased morbidity and high rates of mortality. If they survive, small infants grow into small children and, upon reaching reproductive age, often produce low birth weight infants. This unhealthy pattern continues for generation after generation.

For a variety of reasons, breast feeding is being abandoned in some countries. Substitutes for breastmilk among the low income population of developing countries tend to be expensive, nutritionally inappropriate, often contain infectious and toxic contaminants, and lack the non-nutritional factors found in human milk that are important in the development of host defenses in an unsanitary environment. Weaning foods are frequently inadequate in quantity and quality. Because of the prolonged period of dependency that continues through weaning, severe deprivation of food is common with important implications for morbidity from infectious diseases. Moreover, chronic nutritional deficiencies in early childhood may hinder mental development and have serious consequences for later education and training.

B. Malnutrition and Disease

Nutrition is a product of interaction of nutrients with the host, with one another within the host, and also of an interaction with infectious agents, parasites and other non-nutritional factors. The results of such interactions in man are highly complex and often overlooked, especially since experimental studies have tended to assess discrete events rather than the interactions.

Nutritional deficiencies are closely interrelated with a wide variety of diseases and infections. Nutrition surveys done in various parts of the world have varied in their comprehensiveness and population coverage, but they have identified the major diseases of public health significance that are associated with primary or secondary deficiencies of calories and protein, iron, and vitamin A.

Calorie and protein deficiencies in acute form appear as marasmus (starvation), kwashiorkor in children, or hunger edema in adults. But subclinical forms of protein-calorie undernutrition are much more prevalent than acute forms in the developing countries. The effects include slowed growth and development, greatly increased vulnerability to acute and chronic infections, and reduction in general level of performance.

Serious diseases are attributable to the specific nutritional deficiencies especially prevalent in the developing countries. The most important is anemia due to inadequate intake of iron. Iron deficiency anemia occurs in the U.S., but is a far more serious problem in developing countries due to the low availability of iron from predominantly vegetable diets and increased blood loss from hookworm and schistosomiasis. Acute anemia is associated with increased mortality, morbidity, and reduced performance. Mild anemia

and latent iron deficiency without anemia compromise work performance among some populations, including adult men, and influence infectious disease morbidity and mortality. Inadequate intake of vitamin A is widespread particularly among young children in developing countries where rice, cassava, white corn or potatoes are the dietary staples. Acute deficiency of vitamin A causes impaired vision and may lead to blindness.

In addition to diseases specifically caused by nutritional deficiencies, the interactions of malnutrition and acute and chronic infections represent widespread problems in developing countries. Infections can lead to undernutrition through loss of appetite, increased protein and energy expenditure, and metabolic loss of nitrogen, essential minerals, and certain vitamins. Intestinal infections, parasitic infestations, and periods of diarrhea also impair the ability of the intestine to absorb food, not only during the acute period, but also some time after the illness has eased. Thus, infections interfere with growth by causing actual weight loss and impairing weight restoration. They also cause chronic damage to the gastrointestinal tract that may continue to impair absorption.

Conversely, nutritional deficiencies predispose individuals to increased frequency and severity of infection. In most instances, an unhealthy equilibrium is produced: smaller children, chronically infected, become weakened adults. The unhappy consequence is the production of small and unhealthy infants by small undernourished mothers.

The U.S. should support field programs (1) to supplement local diets and fortify local food to increase vitamin, mineral, and protein intakes; (2) develop horticultural improvements in seed quality and variety; and (3) develop improved marketing systems.

4. Other Health Problems

Other areas of health which present problems which seem to be of a lesser degree of priority are occupational health, mental health, and oral health. The effects of traumatic accidents, such as burns, poisonous bites, and eye injuries are common and appalling.

Most people in Africa are not aware of the benefits of modern medicine and have a low expectation of the "normal state" of health.

A. Occupational Health

In the industrialized and mining areas of Africa, there are significant but incompletely reported and frequently overlooked problems of death and injury through accident, and of pneumoconiosis ("miner's asthma") caused by breathing air polluted with rock-dust. Protective safety programs and equipment are often lacking at industrial and mining sites, and governmental occupational health programs are underfunded and understaffed.

B. Mental Health

Mental health problems are probably at least as serious in the less developed countries as they are in the more advanced countries. Little specific information is available about mental illness in Africa and relatively few resources are available within the health care systems for care and treatment of the mentally ill.

C. Oral Health

Oral and dental diseases are the causes of much pain and disability, and are growing concern to all peoples of the world, including those of the developing countries.

Chronic periodontal diseases are found in all societies. While caries is more prevalent in peoples of western civilizations, destructive diseases of the tooth-supporting tissues are much more prevalent and severe in Africa than they are in the U.S. Their prevalence varies among populations, but increases with age in all populations.

IV. United States Agency for International
Development Policy and Program on Development
Assistance in Health

The ultimate objective of Agency policy is to improve the quality of human life in the developing countries. Health, by definition, is a measure of population quality.

The state of a nation's health is influenced not only by disease patterns but by many factors which affect the quality of life such as nutritional status, rate of human reproduction, availability of preventive and clinical services, educational levels, employment, economic productivity, food production, legal and political practices, and the general state of development.

FIVE MAJOR PROBLEM AREAS

For developing countries as a whole, life expectancy averages 51 years...about 20 years less than that of the United States. In Africa, average life expectancy averages 42 years, almost 30 years less than for the United States. These statistics reflect a wide range of development problems.

Five major health problem areas are identified by leaders of the developing countries themselves:

1. Absence of National Systems to Deliver Health, Nutrition, or Population Services to the Majority.

On the average, less than 15% of populations in developing countries have ready access to basic health services in locations which they live and at costs which they can afford. The absence of comprehensive systems preclude rapid dissemination of services of knowledge affecting such basic needs as maternal care, child nutrition, family planning, and home sanitation. Traditional, often untrained, indigenous practitioners remain the primary source of help for the rural majorities in most developing countries.

2. Absence of Effective National Health Planning

Health is no exception of the general sectoral maldistribution of resources. Public sector expenditures for health in developing countries average less than \$2.00 per year per person, much of which is spent on

urban clinical facilities. National health budgets rarely exceed 3% of the GNP although private expenditures for health may exceed public budgets by a factor of three or four. A major problem is the shortage of national health planners who understand the relationships between health and development, and who are trained and organized to develop national alternatives to basic health needs.

3. Rapid Population Growth

Short birth intervals and frequent pregnancies increase both morbidity and mortality of mothers and children in countries without basic health systems. Maternal death rates increase in relation to the total number of births per woman. Maternal and child nutrition is adversely affected by frequent births. Quite aside from the unfavorable economic impact of rapid population growth on development, the health of mothers and children in developing countries cannot be improved without the effective and continuing practice of fertility control by the majority of couples of reproductive age.

While encouraging progress is being made in slowing birth rates, application of field programs remain at an early stage for the majority of populations in developing countries where the majority of fertile couples are not yet effectively reached. Family planning services do not yet effectively reach more than 20% of fertile couples in the developing world whereas it is estimated that 60% of such couples should be continuously practicing fertility control if a net production rate of 1.0 is to be reached by the year 2000.

A major problem is how, and by what means, developing countries can organize and implement sufficiently large low-cost culturally-acceptable public and private systems to deliver information, education, supplies, and services to reach the overwhelming majority which are still beyond effective reach.

4. Malnutrition

An estimated 25% of the world's 4 billion people presently consume less than 80 percent of their daily minimum requirements. Two-thirds to four-fifths of all deaths occurring in developing countries are among the

under-five age group which constitutes 20% of the general population. Thirty percent of children in these countries fail to survive to the age of five years. For the hundreds of millions of preschool children who do survive childhood malnutrition, after-effects of deprivation preclude the achievement of full human potential as adults.

Malnutrition manifests itself in several ways: hunger per se, inadequate caloric energy for adult labor, inadequate energy for repair of maternal health following childbirth (in conjunction with short-birth intervals), inadequate excess energy to meet the metabolic demands of infectious disease, and failure to achieve normal physical and mental growth.

Primary malnutrition results from inadequate food intake and is characterized dramatically by the Sahel drought though just as seriously in food shortages affecting landless labor and other economically deprived groups. Secondary malnutrition is the more common complex of factors which, in the development context, creates the greatest damage in the vulnerable pre-school age groups by a combination of infection, inadequate protein intake, poor home sanitation, delayed weaning, and poor family food habits...factors which are as significant as the availability of food.

5. Environmental Risks to Human Health

Of approximately 60 million deaths from all causes in the world each year, 30 million occur in children under the age of 15 years. Half of these deaths are the result of intestinal infection in association with malnutrition. Water and soil pollution from human wastes remains a major cause of poor health. Over 60% of the population in developing countries do not have access to protected water supplies in spite of the fact that the technology exists to provide low cost water and sanitation services for most of these populations.

The human environment in tropical countries is also a major breeding ground for common infections including the major tropical infections:

	<u>Estimated number of cases</u>
Malaria	100,000,000
Onchocerciasis(African River-blindness)	40,000,000
Schistosomiasis(Snail fever)	200,000,000
Filariasis	190,000,000
Hookworm	700,000,000
Trypanosomiasis(African sleeping sickness)	1,000,000

Improvements in irrigation associated with agriculture enhance the risk of tropical disease. Hydroelectric dam construction to provide cheap energy creates the risk of vector-borne disease. The human community continues to bear a heavy burden of diseases, most of which are not as susceptible to the control achieved in more developed countries.

OUTLOOK FOR THE FUTURE

In spite of unprecedented rates of economic growth in developing countries during the last ten years, the total availability of resources for health are marginal to needs. Resources will be severely limited during the next decade. With incomes of the poor averaging \$100 per person per year, a 2% growth rate holds little promise for significant change in the quality of life. Total foreign assistance by all developed countries is only a fraction of actual needs of the poorest countries. Even the favorable economic impact of reduced population growth rates is not expected for several decades.

If the health of the world's poor majority is to be improved during the next ten years radically simple solutions must be identified and carried out within the existing limits of resources and manpower available to each country.

A.I.D. POLICY

The legislative base for health policy, as found in the International Development Food and Assistance Act of 1978, includes among others the following principal provisions:

1. Concentrate assistance on the poorest countries.
2. Prevent and combat disease and help provide health services for the great majority in health, disease prevention, and environmental sanitation.
3. Reduce human malnutrition.
4. Increase opportunities, and motivation for family planning and reduce the rate of population growth.

Given the foreign policy objective of addressing the most critical problems of the poorest population, the legislative also includes support for agriculture, education, and technical assistance on new scientific technology, energy, urban development, intermediate technology, and women in development. Each of these traditionally non-health sector functions significantly influence the outcome of health objectives. In association with the Title III section on Food for Peace, the non-health legislative provisions are clearly supportive of health goals in developing countries.

A.I.D. HEALTH PROGRAMS

Organizationally, A.I.D. administers its nutrition and population program separately from other health areas such as national health planning, health delivery systems, water supply, sanitation and tropical disease research and control. However, Agency efforts which directly influence health outcome includes nutrition and population programs and therefore reference is made to their important contribution.

1. National Health Planning

The poorer the country, the greater is the need for effective use of limited resources.

As a basis for national assistance, AID helps developing countries in assessing the national health situation, defining program alternatives, and training leaders as well as specific intervention in health.

Leadership training is provided in a limited number of American Schools of Public Health. Efforts are being directed towards building training capability overseas.

2. Health Delivery Systems

For the purpose of designing low-cost programs for the delivery of health, nutrition, and population services to the majority, A.I.D. is prepared to help governments assess alternative systems and to test them in geographic units of 100,000 to one million population. Firm evidence on costs, management and effects of these field systems permit sponsoring governments to determine local alternatives which are practical for application on a national scale. Beginning with one program in 1972, A.I.D. assists or plans to assist 36 country projects in FY 1979. Paramedical training educational technology are major elements in these projects. Major elements of these projects include participation of village-selected health personnel, the retraining of indigenous midwives and healers, the training of midlevel paramedical personnel and other auxiliaries, and the use of mass education and communication activities.

3. Water Supply and Sanitation

A.I.D. will continue to support community water supply and sanitation programs, recognizing that increasing investment in urban systems is being made by international donor institutions other than A.I.D. Low-cost methods and systems to predict the the most appropriate technologies for specific countries will be emphasized.

Although water supply and sanitation technology has made many advances in the past decades, trained manpower has been inadequate to disseminate existing knowledge. A.I.D. will support leadership training, preferably in existing engineering and environmental health institutes in developing countries.

In keeping with the U.S. Environmental Protection Act, A.I.D. will carefully assess its development programs for their potential effects on human life.

4. Tropical Disease Control and Research

A.I.D. has played a major role in the past in the support of global campaigns to reduce malaria and smallpox. A.I.D. is now turning its attention to the control of malaria in Asia and onchocerciasis (river blindness), schistosomiasis (snail fever) and trypanosomiasis (sleeping sickness) in Africa.

In support of malaria programs, A.I.D. has encouraged research into alternative methods of malaria control, biodegradable insecticides, and the development of a malaria vaccine.

In cooperation with other bilateral donors, WHO, UNDP, the World Bank, and the developing countries themselves, A.I.D. is planning to support an international multidonor effort to support research and training (for research) on major technical and operational problems which prevent the effective control of malaria, schistosomiasis, onchocerciasis, and trypanosomiasis.

Research on cholera and other severe diarrheal diseases will continue at the Cholera Research Laboratory in Dacca, Bangladesh. A new multidonor Institute is being proposed to permit a study of the associated effects of diarrheal disease, malnutrition and rapid population growth.

5. Nutrition

Although A.I.D. provides special emphasis and unity to human nutrition programs, under Section 103 of the A.I.D. legislation, the obvious relationship between nutrition and health is reflected in Agency programs which:

- a. Enable developing countries to undertake nutrition planning and analysis and ascertain the nutritional status of their populations.
- b. Ensure that health and education delivery systems for the poor also deliver nutrition knowledge.
- c. Increase understanding of the relationships between nutrition status and human health and performance under actual conditions in developing countries.
- d. Design and perfect specific interventions, both technical and methodological, which give developing countries a broader choice of practical actions to improve nutrition.
- e. Promote steps to overcome certain specific nutritional deficiencies such as Vitamin A and Iron deficiency.

6. Population

Since 1967, the Agency has given special emphasis and organizational identity to population programs by allocating approximately two-thirds of all health-related funds for this purpose.

In context of Agency health policy, family planning is an essential means to improve maternal and infant health. Since improved population quality requires both low birth rates and low death rates,

programs in health and population become inseparable in practice by virtue of intent as well as by joint dependence on common resources of health-related personnel and facilities.

The A.I.D. population program is directly supportive of health goals, through activities which promote population policy formulation, development of adequate demographic data, research on new fertility control techniques, delivery of family planning services, dissemination of population information, and the training of population personnel.

INTERNATIONAL COLLABORATION

A.I.D. actively participates in joint collaboration with other donor countries and agencies. In addition to 17 donor countries, the principal international collaborating organizations are WHO, UNICEF, UNDP, and the World Bank.

RESEARCH

The entire strategy for meeting basic human needs over the next decade depends on the ability of developing countries themselves to apply technologies which are "appropriate" and systems that are financially and administratively manageable. A.I.D. will continue to monitor U.S. technology for potential applicability and support research of new methods where appropriate to resolution of priority problems as jointly defined to A.I.D. and the developing countries.

ROLE OF PRIVATE AND VOLUNTARY AGENCIES AND INSTITUTIONS

The Agency recognizes that major American professional resources with experience in international health reside in universities, professional associations, foundation, and the many private and voluntary agencies. In practice, A.I.D. carries out a great majority of its international work through contracts and grants with these institutions rather than through the work of Agency personnel. The Agency will continue to encourage and develop the fullest utilization of this resource.

Policies and Priorities for Health and Nutrition in Africa

V. Health and Nutrition Policy

The Agency for International Development (AID) and its predecessor organizations have been providing assistance to support health programs since World War II. During the early period of assistance, activities were largely directed toward malaria control, improving curative health services, training programs for various categories of health personnel (mostly professionals), and some preventive health services.

As overall program emphasis and priorities of both the Agency and the African Governments changed, health program activities were modified accordingly to reflect these changes. In an attempt to plan for the most effective utilization of relatively scarce health resources, the Africa Bureau of AID determined to explore opportunities for pooling of health and health related resources wherever possible. In this context, consideration was given to support of health activities in non-health AID assisted projects, where possible (e.g., in rural and agricultural development, and education projects) and to emphasize the development of integrated family health/nutrition/family planning projects. The ultimate object of AID assistance being to assist countries in extending health and nutrition services to the majority of their populations and thereby contributing to improve health status and well-being of African people.

It is the policy of the Africa Bureau to develop projects which fit into host country national health plans where such are available. In addition, the Bureau makes every effort to explore with other donors and international organizations, areas for cooperation and collaboration - both in terms of finances and program activities.

VI. Priorities for Health and Nutrition Programs in Africa

In establishing priorities for assistance in health, nutrition and population programs in Africa, several factors which affect health services delivery and the health status of Africans were considered. These include:

- a) Direct and indirect effects resulting from a combination of diseases and/or conditions (e.g., parasitism, environmental sanitation and malnutrition).
- b) Scarcity of financial and health manpower resources.
- c) Skewed patterns of access of health services in the countries (e.g., greatest access in urban areas in spite of majority of population in rural areas)

d) Health services programs being directed mostly toward curative (medical) services rather than preventive health services (majority of health problems are preventable by accepted public health measures).

e) Health infrastructure problems which impede effective planning and implementation of health program priorities of African Governments.

On the basis of the concepts stated above, and in line with our Administration and Congressional Mandates, the Africa Bureau encourages and gives priority consideration to assisting countries to develop their health programs in the areas indicated below and particularly, when such are in line with priorities of African Governments:

A. Integrated Rural Health Delivery Systems

1. Provide capital and technical support for the development of national basic (primary care) health delivery systems (including family planning), in instances where there is host country support, coordinated donor inputs, and health system is relevant and rooted in the financial system.

2. Provide selective assistance in health planning manpower development, health services management/administration, as needed and relevant, and programs which emphasize preventive health services as opposed to curative (medical) services.

3. Development of vital events and demographic data systems.

B. Endemic Diseases Control Programs/Activities

1. Support of regional, multi-donor supported control programs which are economically and technically feasible, e.g., Onchocerciasis Control Project in the Volta River Basin.

2. Support of national or local endemic diseases control programs, either as a part of the health delivery system or where such programs contribute to the soundness and success of socio-economic development efforts in a specific area of the country (e.g., where water resources development projects could lead to spread of schistosomiasis, malaria and certain water borne/related diseases).

3. Support for Development of U.S. and LDC Trained Personnel for Endemic Disease Control.

4. Support of relevant operational/applied research on control of major endemic diseases (e.g., field testing of control-technology, packaging control techniques in cost-effective manner, and doing cost-benefits analyses/studies).

C. Family Health/Nutrition/Family Planning Programs

1. Support and promote concept of development and implementation of integrated family health/nutrition/family planning programs, whenever feasible.

2. Support of Expanded Programs of Immunization (Multiple Antigens) and Communicable Disease Control programs/activities.

3. Support of Inquiry into Health Impact of Traditional Practice on Family Health.

D. Nutrition Improvement and Intervention Programs

1. Support projects/programs planned to improve human nutrition either through community level nutrition intervention programs, as separate or components of integrated health delivery projects or integrated rural development projects.

2. Support of projects/programs which promote self-help nutrition improvement activities, nutrition education programs/activities, and nutrition improvement activities which cut across sectorial boundaries (e.g., education, health, agriculture and rural development).

3. Support and promote the concept of having national nutrition planners address concerns related to human diet and food consumption at the local level.

E. Rural Water Supply and Environmental Sanitation

1. Provide assistance to and promote projects which are planned to make available safe water supply for human use and consumption, either as a part of an integrated health delivery system, a component of an agricultural or rural development project, or as a separate rural water/environmental sanitation project.

2. Providing assistance in assessment of water resources, technical assistance, capital assistance (commodities supplies, and well drilling equipment), and manpower training and development.

3. Support of innovative approaches which utilize all pragmatic resources for providing safe water supply for rural population in LDCs (e.g., self-help, using total available local water resources - springs, streams, bored wells, hand-dug wells, etc.).

4. Support and provide assistance to promote projects which are designed to make available adequate and acceptable low-cost methods for sanitation disposal systems (excreta, sewage, wastewater), especially excreta disposal.

F. Special and Selected Programs

Programs which support government's efforts in area rural development projects and which help develop the host government's capacity to plan and implement locally relevant and supportable health programs. In a similar fashion, special health efforts related to populations at risk due to drought, famine or other calamities will be supported. Support can include such items as emergency supplies of drugs, vaccine, and equipment, plus some logistic support.

VI. Overview of Funding Trends of the Africa Bureau's Health, Nutrition and Selected Population Projects

The following five tables summarize the Africa Bureau's health operations for 1979-81. Over this period it will finance: in 1979, bilateral programs of \$41,590,000 and regional programs of \$14,913; in 1980 bilateral programs of \$48,601,000 and regional programs of \$20,468,000; and in 1981, bilateral programs of \$75,366,000, and regional programs of \$16,100,000.

For 1979, almost fifty-two percent of the funding will be in low-cost integrated health delivery systems, 20% in rural water and environmental sanitation, 11% in health planning and management, 4.5% in endemic disease control, 2.4% in both nutrition and MCH/FP projects. Over the 1979 period it will finance 66 projects in 23 countries, with health delivery system leading in numbers of projects with 24, rural water and environmental sanitation with 10, MCH/FP with 9 health planning and management and endemic disease control with 6 each, nutrition with 4, and the catchall category labeled "others" with 7 projects.

In 1979, the Africa Bureau's regional programs will finance a number of important areas in endemic disease control, communicable diseases, health planning and management, family planning, etc., for an additional \$14,913,000. All of these recent health projects have enabled the Africa Bureau to learn more about the major health problems of Africa and assist in developing approaches to attack those problems, along with other donor agencies.

The last table in this section shows AID allocation for health, nutrition and selected population projects by country and level of funding. These data represent the disaggregate data used in calculating the funding trends by major health areas. For 1979, the funding obligations are distributed thusly; 15.1% for Kenya, 14.7% for Sudan, 8.4% for Botswana, 8.1% for Niger, 7.0% for Upper Volta, 5.5% for Cameroon, 5.2% for Ghana. All of the other countries will receive funding obligation under 5% of the total.

Health, Nutrition, and Selected Population

	<u>FY79</u>	<u>FY80</u>	<u>FY81</u>
Bilateral Programs	\$ 41,590	\$ 48,601	\$ 75,366
Low-Cost, Integrated Health Delivery Systems	\$ 21,825 (52.5%)	\$ 25,406 (52.3%)	\$ 26,892 (35.7%)
Health Planning & Mgt.	4,526 (10.9%)	4,523 (9.3%)	12,231 16.2%)
Rural Water Supply & Environ. Sanitation	8,152 (19.6%)	9,657 (19.9%)	19,400 (25.7%)
Endemic Disease Control Prog.	1,852 (4.5%)	2,810 (5.8%)	3,677 (4.9%)
Nutrition Improvement & Intervention Programs	1,018 (2.4%)	1,100 (2.3%)	2,202 (2.9%)
MCH/FP	1,018 (2.4%)	2,586 (5.3%)	7,050 (9.4%)
Other Health Activities	3,199 (7.7%)	2,519 (5.2%)	3,914 (5.2%)
	<hr/> \$ 41,590 (100%)	<hr/> \$ 48,601 (100%)	<hr/> \$ 75,366 (100%)
Bilateral Programs	\$41,590(73.6%)	\$48,601(70.4%)	75,366 (82.4%)
Regional Programs	14,913(26.4%)	20,468(29.6%)	16,100 (17.6%)
Total:	<hr/> \$56,503	<hr/> \$69,069	<hr/> 91,466

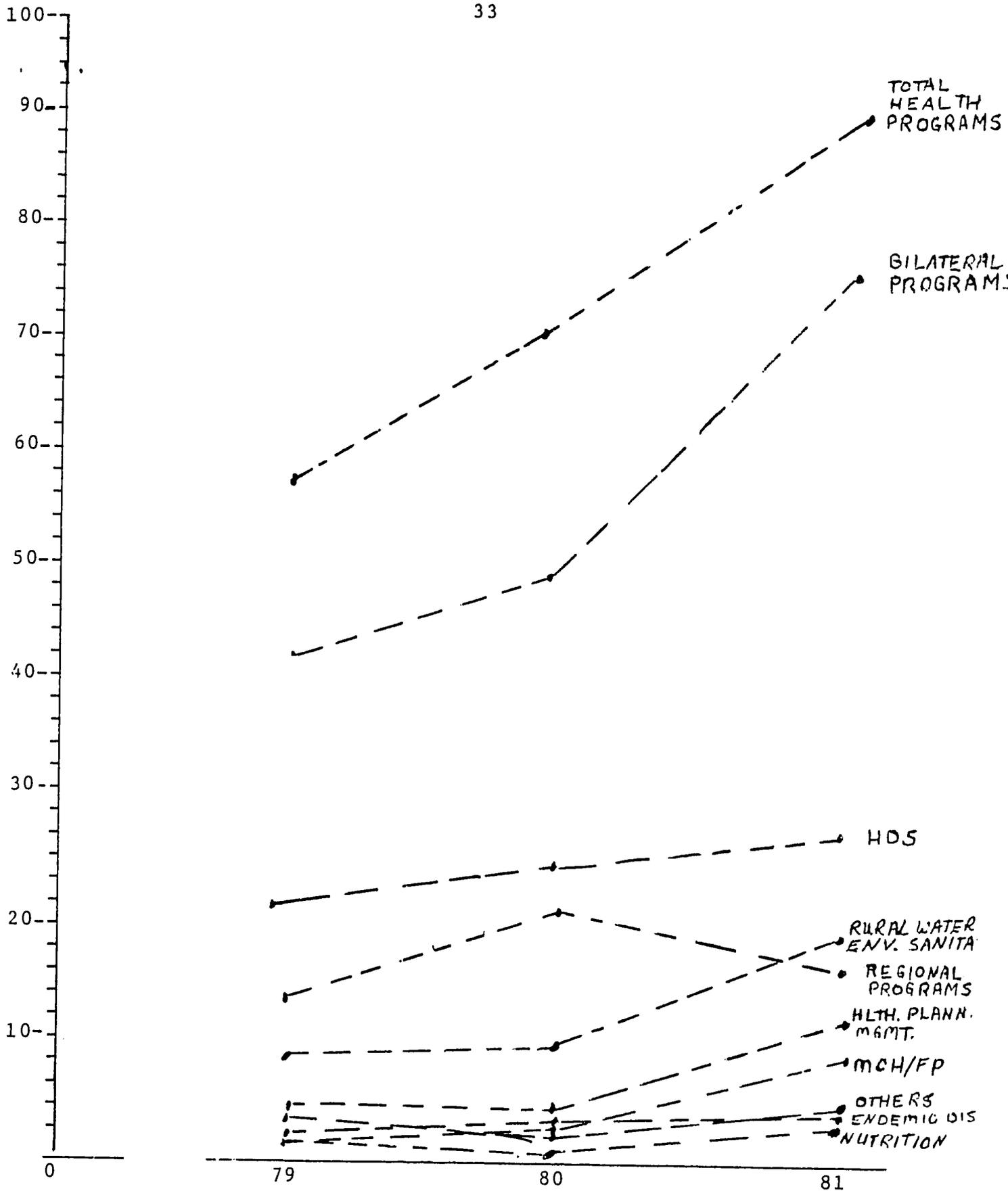
AFRICA BUREAU REGIONAL PROGRAMS

1. Africa Regional activities (Office of Regional Affairs)
2. Africa Regional - other--includes PDS, PVOs, Population, etc (Office of Development Resources)
3. REDSO/W and REDSO/E backstopped by office DR and includes programs such as the entente fund managed by REDSO/W.

\$000

		<u>1979</u>	<u>1980</u>	<u>1981</u>
H698-0398	Strengthening of Health Delivery Systems II	3,000	3,500	4,000
H698-0399	Onchocerciasis control (Volta River Basin)	1,700	2,700	2,700
H698-0408	Health Constraints to Rural Production	500	1,200	1,800
H698-0412	Health Institution Improvement (211d)	1,500	1,000	1,100
H698-0410	Accelerated Impact Program (AIP)	500	500	300
H698-0386	PVO - Program Grants (495F)	1,152	3,479	1,800
P698-0500	Special Population Activities	250	150	(0)
** P698-0662	Family Health Activities	4,611	1,859	1,500
H698-0421	Combatting Childhood Communicable Diseases	500	5,000	5,000
H698-0135	Program Development and Support	1,200	1,080	1,400
H698-0428	Onchocerciasis Control (Senegal/Gambia River Basins)	0	300	1,000
		<u>\$14,913</u>	<u>\$20,468</u>	<u>\$16,100</u>

** Population project with significant health component.



FUNDING TRENDS FOR HEALTH BY AGGREGATE TOTALS AND BY FUNCTIONS
FY 1979-1981
(\$ millions)

FY 1979 TABLE

TOTAL NUMBER OF AFRICA BUREAU HEALTH PROJECTS BY TYPE OF ACTIVITY

<u>Region</u>	<u>Total Countries</u>	<u>Total Projects</u>	<u>Hlth. Del. System</u>	<u>Rural Water Supp. & Env.Hlth.</u>	<u>MCH FP</u>	<u>Hlth. Plng. & Mgmt.</u>	<u>Disease Cont.</u>	<u>Nut.</u>	<u>Others</u>
Africa Bilateral	23	66	24	10	9	6	6	4	7

TABLE

Countries with Africa Bureau Bilateral Health, Population, and Nutrition Projects by Number of Projects

FY1979

<u>Region</u>	<u>Country</u>	<u>Health</u>	<u># of Projects Population</u>	<u>Nutrition</u>
Africa	Benin	3	0	1
	Botswana	2	0	0
	Cameroon	3	1	1
	Central African Empire	1	0	0
	Chad	4	0	0
	Ghana	3	0	0
	Kenya	5	2	0
	Guinea	1	0	0
	Lesotho	2	0	0
	Liberia	2	0	0
	Malawi	2	0	0
	Mali	1	0	0
	Mauritania	2	0	0
	Niger	2	0	0
	Rwanda	1	0	0
	Senegal	2	1	0
	Somalia	2	0	0
	Sudan	3	0	0
	Swaziland	2	0	0
	Tanzania	6	0	0
	Togo	1	0	0
	Upper Volta	2	0	0
	Zaire	5	1	2
		<u>57</u>	<u>5</u>	<u>4</u>

AID ALLOCATION FOR HEALTH, NUTRITION,
SELECTED POPULATION PROJECTS IN AFRICA BY
COUNTRY AND LEVEL OF FUNDING

\$(000)

FY 1979 to FY 1981

<u>INDIVIDUAL COUNTRIES</u>	<u>LEVEL OF FUNDING 1/</u>					
	<u>FY1979^{2/}</u>		<u>FY1980^{3/}</u>		<u>FY1981^{4/}</u>	
<u>Africa Countries</u>	000	%	000	%	000	%
Benin	1,185	2.8	1,890	3.9	3,000	4.0
Botswana	3,483	8.4	2,212	4.6	1,717	2.3
Burundi	(0)	(0)	(0)	(0)	(0)	(0)
Cameroon	2,300	5.5	3,101	6.4	4,015	5.3
Cape Verde Islands	(0)	(0)	(0)	(0)	(0)	(0)
Central African Empire	(0)	(0)	658	1.4		
Chad	669	1.6	1,770	3.6		
Djibouti	(0)	(0)	(0)	(0)	(0)	(0)
Ethiopia	(0)	(0)	(0)	(0)	(0)	(0)
Gambia	(0)	(0)	(0)	(0)	(0)	(0)
Ghana	2,160	5.2	2,030	4.2	11,700	15.5
Guinea	(0)	(0)	(0)	(0)	200	0.3
Guinea-Bissau	(0)	(0)	(0)	(0)	(0)	(0)
Indian Ocean States	(0)	(0)	(0)	(0)	(0)	(0)
Ivory Coast	(0)	(0)	(0)	(0)	(0)	(0)
Kenya	6,266	15.1	3,750	7.7	4,000	5.3
Lesotho	1,621	3.9	1,708	3.5	3,050	4.0
Liberia	694	1.7	220	0.5	856	1.1
Malawi	(0)	(0)	1,120	2.3	2,000	2.7

	FY1979		FY1980		FY1981	
	000	%	000	%	000	%
Mali	700	1.7	1,127	2.3	650	0.9
Mauritania	1,700	4.1	545	1.1	700	0.9
Niger	3,364	8.1	4,232	8.7	3,000	4.0
Nigeria	(0)	(0)	(0)	(0)	(0)	(0)
Rwanda	(0)	(0)	2,640	5.4	2,430	3.2
Senegal	1,000	2.4	1,825	3.8	970	1.3
Sierra Leone	(0)	(0)	(0)	(0)	(0)	(0)
Somalia	2,000	4.8	3,900	8.0	5,200	6.9
Sudan	6,130	14.7	4,663	9.6	11,800	15.7
Swaziland	1,679	4.0	900	1.9	1,201	1.6
Tanzania	1,594	3.8	3,000	6.2	5,290	7.0
Togo	1,000	2.4	1,000	2.1	3,600	4.8
Upper Volta	2,932	7.0	3,000	6.2	3,000	4.0
Zaire	1,123	2.7	3,310	6.8	6,987	9.3
Zambia	<u>(0)</u>	<u>(0)</u>	<u>(0)</u>	<u>(0)</u>	<u>(0)</u>	<u>(0)</u>
Total:	41,590	100	48,601	100	75,366	100

PL 480

A. Title I	77,500	65,300	100,560
B. Title II	57,375	59,085	58,153
C. Title III	13,000	25,300	58,470

*Total without Chad, Central Africa Empire

- 1/ Based on obligations, rather than expenditures or pipelines,
2/ Based on estimated obligations as of 4/25/79 supplied by DP.
3/ Based on 1980 Congressional Presentation data.
4/ Based on 1981 ABS data.

VII Low-Cost Integrated Health Delivery System

An Overview of the Africa Bureau's Low-Cost Integrated Health

Delivery Systems Activity

In Africa, it is estimated that less than 15 percent of the population have regular accessible, acceptable, and affordable minimal health services. Therefore, without a health delivery system that reaches more people, available technology and knowledge for the promotion of health, the prevention of morbidity and mortality, the prevention of rapid population growth and malnutrition are not effectively and efficiently applied.

The Africa Bureau has increased its emphases on the development of projects designed to assist countries in determining their approaches to developing low-cost integrated health delivery systems that are accessible to the poor majority. Countries are encouraged to integrate a minimal level of health, family planning and nutrition services, particularly for mothers of reproductive age and children under the age of five.

The graph and list of projects which follows illustrate the number of countries and funding levels with AID assisted projects with an objective of providing integrated services in an area. In 1979, there are 23 countries receiving AID assistance for this in the health sector through bilateral programs. Nine of the 23 countries have projects in health delivery system category ongoing or in the advanced planning stage. In 1980, another five countries will have integrated health delivery, bringing the total to 14 countries. By 1981, at least 17 countries out of the 23 countries or 74%, that received AID assistance in 1979 in the health sector will have projects in the Integrated Health Delivery System category.

The funding obligations will increase slightly each year, from \$21,825 million in 1979, to \$25,406 in 1980 and to \$26,892 in 1981; increases of 16.% and 5.8% respectively.

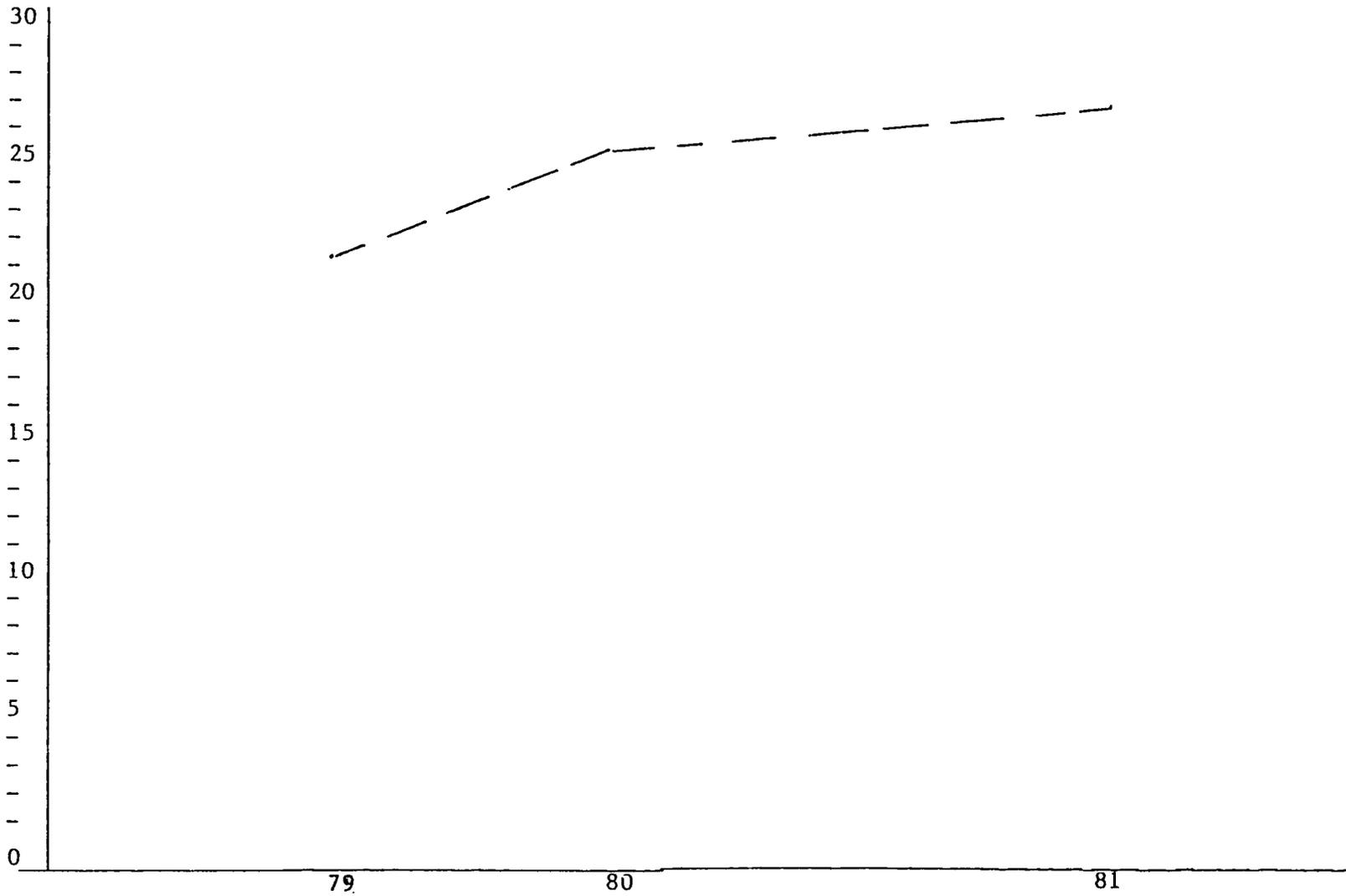
LOW-COST, INTEGRATED HEALTH DELIVERY SYSTEMS

		<u>1979</u>	<u>1980</u>	<u>1981</u>
<u>Benin</u>				
H680-0203	Extension of Rural Health Services	0	0	1,000
<u>Botswana</u>				
H633-0078	Health Services Development	3,010	1,785	717
<u>Cameroon</u>				
H-631-0016	Medical System for Cameroon	1,500	2,311	3,000
<u>Cape Verde</u>				
H-655-0007	Basic Rural Health	0	0	0
<u>Central African Empire</u>				
H655-0002	Ouham Province Rural Health	0	658	
<u>Chad</u>				
SH677-0034	Rural Health Services	0	800	
<u>Ghana</u>				
H641-0082	Delivery of Rural Health Services	0	820	8,800
<u>Kenya</u>				
H615-0177	Rural Health Delivery	4,000(L) 700(G)	1,500(L) 2,250(G)	0
H615-0185	Primary Health Care (Kitui) (OPG)	413	0	0
H615-0179	Kibwezi Area Health Care (AMRF) (OPG)	818	0	0
H615-0198	Rural Health Delivery (OPG)	0	0	350
<u>Liberia</u>				
H P669-0165	Health Delivery System	0	0	635
* <u>Mali</u>				
PH688-0208	Health Services Development	700	1,127	650
<u>Mauritania</u>				
H682-0202	Rural Medical Assistance	1,700	545	0
<u>Niger</u>				
SH683-0208	Rural Health Improvement	2,600	3,373	3,000
SH683-0214	Basic Health Delivery Services (Africare) (OPG)	764	859	0
* <u>Rwanda</u>				
P696-0113	Rural Health/FP	0	2,640	2,430

		<u>1979</u>	<u>1980</u>	<u>1981</u>
<u>Senegal</u>				
H685-0210	Rural Health Services	500	1,325	0
H685-0242	Rural Health Services II			970
<u>Somalia</u>				
H649-0102	Primary Rural Health Care	2,000	2,900	2,500
<u>Sudan</u>				
H650-0011	Northern Primary Health Care	2,700	1,263	0
H650-0019	Southern Primary Health Care	430	400	340
<u>Tanzania</u>				
H621-0159	Arusha Health	0	0	500
<u>Zaire</u>				
H660-0067	Basic Family Health Services	0	850	2,000
		<u>\$21,825</u>	<u>\$25,406</u>	<u>\$26,842</u>

Africa Bureau
Low-Cost Integrated Health Delivery Systems
Funding Trends
FY 1979-1981
(\$millions)

-41-



An overview of the Africa Bureau's Health Planning and Management Activities

Health planning and management skill development and performance are requirements for health problem identification, matching resources with greatest needs, assessment of resources, technical interventions, program monitoring and evaluation.

Activities covered under this category include training "multi-sector coordination, health information systems, health sector assessments, health administration and management, health planning and management research, and management of data.

Among the 23 countries in the Africa Region with health projects, there are specific health planning and management projects in 6 countries, Chad, Kenya, Lesotho, Liberia, Sudan, and Zaire. In addition health planning and management activities are included in other projects not easily identifiable. There are also health planning and management components in some of the regional projects, i.e., "Strengthening Health Delivery Services (SHDS)".

In addition, the DSB, Office of Health provides technical support to field programs and through projects for the training of health planners.

Funding obligations for this category show no increase from 1979 to 1980, but a 37% increase from 1980 to 1981. However, the increase is due to substantial funding for the project in Sudan. Funding levels are: \$4,526 in 1979; \$4,523 in 1980; and \$12,231 in 1981.

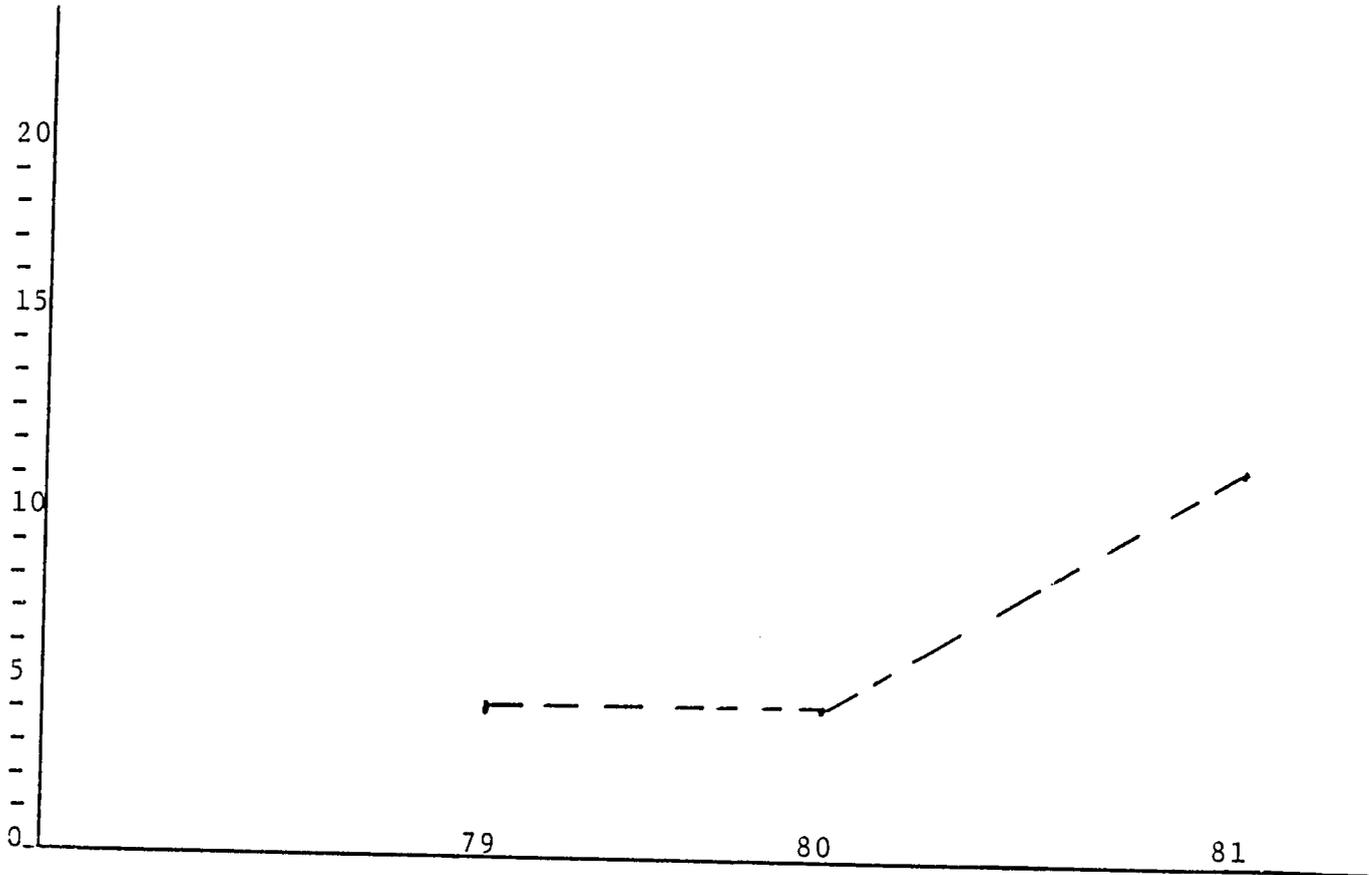
The greatest need in Africa is for skills to be used for careful collection of data on the nature and extent of health hazards, disease problems, births, deaths, fertility rates and other data and information critical to the design of appropriate health strategies and interventions.

It is encouraging that health planning and management efforts are being increased by host countries themselves. We will continue to place emphasis on institutional building services in Africa and building a health planning and management capability in the host countries. We realize that it takes many years to build health planning and management skills.

HEALTH PLANNING AND MANAGEMENT

		<u>1979</u>	<u>1980</u>	<u>1981</u>
<u>Chad</u>				
H 577-0004	Rural Health Planning & Mgmt.	0	231	0
<u>Kenya</u>				
H615-0187	Rural Health Administration	211	0	0
<u>Lesotho</u>				
P632-0058	Rural Health Development	621	512	550
<u>Liberia</u>				
H669-0126	Health Management & Planning	694	220	221
<u>Sudan</u>				
H650-0030	Health Sector Support	3,000	3,000	11,460
<u>Zaire</u>				
H660-0057	Health Systems Development	0	560	0
		<hr/>	<hr/>	<hr/>
		\$4,526	\$4,523	\$12,231

Health Planning and Management
Projects
Funding Trends
FY 1979-1981
(\$ million)



An Overview of the Africa Bureau's Rural Water
Supply and Environmental Sanitation Activities

In 1977, there was only one Africa country with a water supply project, with funding allocated at \$600 thousands. In 1978 Chad initiated a rural Sanitary water project funded at \$1000 thousands and Cape Verde received increased funding for the Sal Disalination/power project, both as part of the Sahel program. Funding for both projects was approximately \$7557 thousands. While the amount of funding has not increased much for 1979, the number of countries with water supply projects have increased.

The activities for 1979 represent 7 countries with funding of \$8,152 thousands, increasing to 10 countries with very small increase in funding for 1980, and for 1981 an increase in funding from \$9,657 to \$19,400 thousands or 100%. The activities for the 10 countries are basic water supply and sanitation projects, with one rural development project with a village water supply component. The increase in activities in this category probably reflects support arising out of the United Nation Water Conference in 1977 and the declaration of WHO of 1980 - 1990 as the international decade for drinking water.

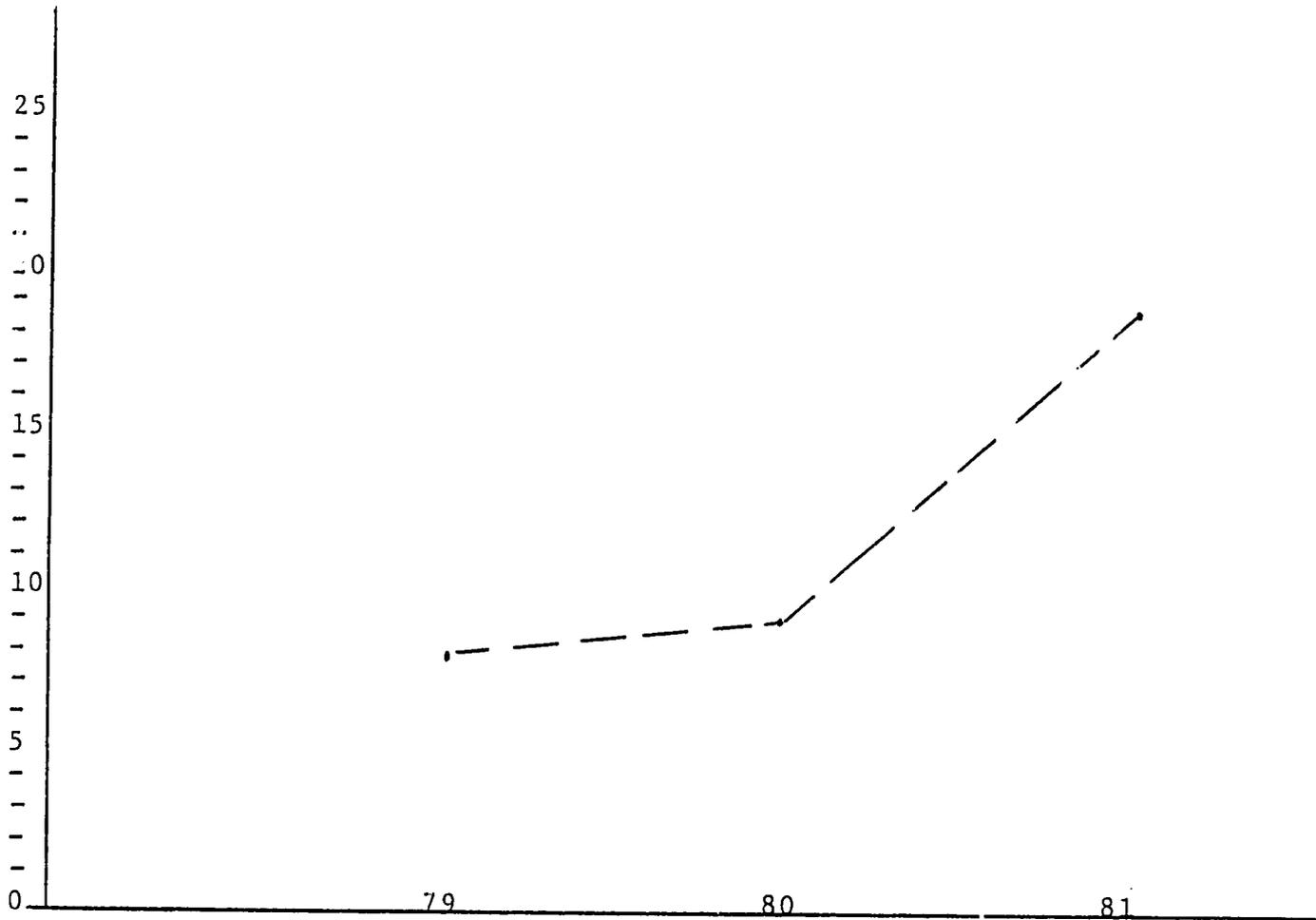
Two added dimensions are of concern in this category of projects. One, the provision of safe water and sanitation systems must be complemented with a well designed and comprehensive health education component. The health education effort should focus both on the use of the new or improved system as well as to improve eating, bathing, and cleanliness habits. Two, the problem of maintenance of the water supply and sanitation systems must be built into the project. This means increasing substantially the involvement of the communities in which these systems are installed. "The users of the 'solution' must be made a part of the process by which corrective measures are identified, designed, and constructed so that they will participate in the long term operation and maintenance of the system." 11

11 Institute of Medicine a Committee Report. Review of the AID Health Strategy, September 1978, p. 19.

RURAL WATER SUPPLY AND ENVIRONMENTAL
SANITATION

		<u>1979</u>	<u>1980</u>	<u>1981</u>
<u>Benin</u>				
H680-0201	Rural Water Supply	990	990	2,000
<u>Botswana</u>				
H633-0084	Environmental Sanitation Phase I	473	427	1,000
<u>Cameroon</u>				
H631-0025	Mandara Area Wells (PVD)	0	450	0
<u>Chad</u>				
SH677-0022	Rural Sanitary Water	669	594	
<u>Ghana</u>				
HM641-0073	Rural Development (Village Water Systems Component) DIPRVD	1,500	800	2,900
<u>Lesotho</u>				
H632-0088	Rural Water and Sanitation	1,000	1,196	2,500
<u>Malawi</u>				
H612-0207	Rural Water	0	700	2,000
<u>Somalia</u>				
H649-0104	Comprehensive Groundwater Development	0	1,000	2,700
<u>Togo</u>				
H693-0210	Rural Water Supply and Environmental Sanitation	1,000	1,000	3,600
<u>Upper Volta</u>				
SH686-0228	Rural Water Supply	2,520	2,500	2,700
		<u>\$8,152</u>	<u>\$9,657</u>	<u>\$19,400</u>

Water Supply and Environmental Health
Projects
Funding Trends
FY 1979-1981
(\$millions)



OVERVIEW OF THE AFRICA BUREAU'S
ENDEMIC DISEASE CONTROL ACTIVITIES

TROPICAL DISEASES

Onchocerciasis, schistosomiasis, and trypanosomiasis were selected as an initial focus of attention because of their particular relevance to the Bureau's priority economic and social development goals.

There are three major areas in which AID can provide assistance in control of major endemic diseases. They are

1. National Control Programs

AID can provide assistance to African governments in the design, planning, implementation and evaluation of national endemic disease control programs. Specific types of assistance could include such elements as technical assistance, commodities, supplies, manpower training, and the development of information and data systems.

2. Endemic Disease Control Components of Integrated Rural Health Delivery Systems

This would involve the planning and design of an endemic disease control component into integrated rural health delivery systems programs. The endemic disease component would be based on whatever endemic diseases that pose priority health problems. Such undertakings should result in cost-saving and more comprehensive health care in terms of utilization of existing facilities and resources to the maximum feasible extent. The types of assistance provided would be essentially the same as for support of development and implementation of a national control program, however would probably be more limited (geographically) in scope.

3. Endemic Disease Control Components of Integrated Rural Development Projects

This involves the planning and design into integrated rural development schemes/projects an endemic disease control component. The endemic disease control component should address those diseases which will be aggravated in the project area and will pose constraints to production. Similar to the proposal for integrating endemic disease control components into health delivery systems as previously noted, all attempts should be made to integrate these control efforts into the local plans/structure. In considering this approach to endemic disease control program/activities, attention should be given to physical and/or engineering measures which may be designed into projects for control of certain diseases, e.g. schistosomiasis in irrigation projects.

In 1979, only two countries (Swaziland and Zaire) have projects in schistosomiasis. Upper Volta has an onchocerciasis control project. A Tsetse Fly rearing and control project has been initiated in Tanzania. In addition, two regional multi-donor control programs in onchocerciasis are being supported in the Volta River and in the Senegal/Gambia River Basins.

Funding levels for the four bilateral projects in 1979 amount to \$1,852,000, increasing to five projects in 1980 with funding of \$2,810,000 or an increase of 52%, moving to a funding level in 1981 for five projects to \$3,677,000 or a 31% increase.

EXPANDED PROGRAM IN IMMUNIZATION

The Africa Bureau, both the Office of Regional Affairs and the Health and Nutrition Division, and the U.S. Center for Disease Control (CDC) are planning and designing activities in this area. Immunization activities are included as a component in some of the integrated health delivery systems, E.G., Rural Health in Sine Saloum in Senegal.

Malaria Control. In the African Region, AID assistance in malaria control has been restricted to only two malaria programs; both are scheduled to terminate in 1980. DS/Health estimation is that there exist 26 countries with major malaria problems.

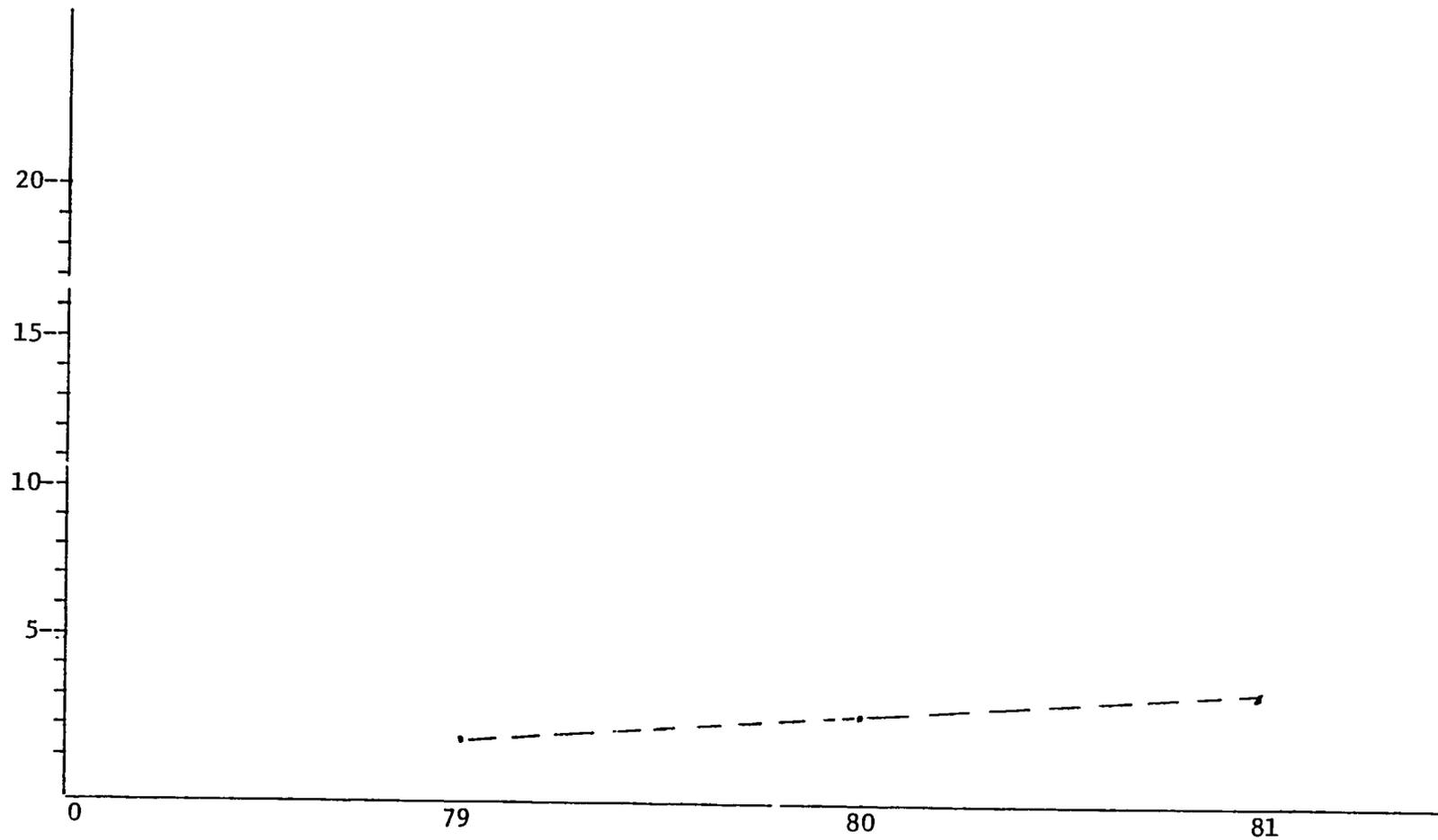
ENDEMIC DISEASE CONTROL PROGRAMS/ACTIVITIES

<u>Mauritania</u>		<u>1979</u>	<u>1980</u>	<u>1981</u>
H682-0219	Immunization	0	0	700
<u>Swaziland</u>				
H645-0087	Rural Water Borne Disease Control	640	800	587
<u>Tanzania</u>				
FN621-0144	Tsetse Fly Rearing and Control	500	410	1,490
<u>Upper Volta</u>				
FN686-0212	Onchocerciasis Free Area Development	412	500	300
<u>Zaire</u>				
H660-0058	Endemic Disease Control	300	500	0
H660-0084	Area Schistosomiasis Control	<u>0</u>	<u>600</u>	<u>600</u>
		\$1,852	\$2,810	\$3,677

ENDEMIC DISEASE CONTROL PROJECTS FUNDING TRENDS
FY 1979 - 1981

(\$ millions)

\$\$



XI. NUTRITION IMPROVEMENT AND INTERVENTION

Overview of the Africa Bureau's Nutrition Improvement and Intervention Activities

Almost every study conducted to ascertain the major health problems in Africa cites severe malnutrition as a condition which affects the health status of Africans especially children under the age of five and women of reproductive age. Once the problem is established, the next step is to determine which interventions, primarily at the village level, stand the greatest probability of making substantial improvements in the nutritional status of the various groups in the community. This step has been lacking in the amount of specificity required to implement a nutrition component which is cost-effective and significantly improve the nutritional status of large numbers of mothers and children. Part of the problem is that the question between what is, or is not a nutrition intervention is arbitrary.

Baumslag, Roesel and Sabin completed an analyses of the nutrition component of all of A.I.D.'s integrated health delivery system projects in November 1978. The following comments are based on the analyses from Africa's projects.

The nutrition activities are provided in the integrated health delivery system projects. WHO scheme for identifying nutrition activities within primary health care delivery systems is composed of five major categories. TABLE 3 lists the various categories and differentiates basic to optimum programs.

The Africa Region integrated health delivery system projects as a whole involve a broader range of nutrition interventions than those listed in the WHO scheme. These include breast feeding, use of mass media in nutrition education, development of garden projects, and improving sanitation.

However, on an individual project basis, a few projects have no nutrition components, not even the minimum interventions suggested by WHO. Very few of the projects probably provide sufficient nutrition-related interventions to improve the health status of the people served.

TABLE 4 shows the full range of nutrition interventions found in the integrated health delivery projects. It can be seen that nutrition education, sanitation and family planning are most frequent of the nutrition related interventions in the Africa's region intergrated health delivery system projects.

TABLE 3
NUTRITIONAL ACTIVITIES IN
PRIMARY HEALTH SERVICES

INTERVENTION	MINIMUM PROGRAM	MEDIUM PROGRAM	OPTIMUM PROGRAM
NUTRITIONAL SURVEILLANCE	Observe protein-calorie malnutrition (PCM) using weight for age classification (under 5 years). Check for signs of locally most important deficiency (for instance vitamin A).	Collect weight for age serial records, home visits, observe PCM, follow-up. Check for signs of other diseases.	Additional: Periodically screen preschool population weight for age records. Screen mothers and infants for haemoglobin. Screen for xerophthalmia and other deficiency conditions prevalent locally. Examine dietary histories of vulnerable groups.
NUTRITION EDUCATION	Advise mothers on supplementary feeding and weaning, especially quantities and frequencies. Advise on local protein sources and vegetables.	In addition: advise mothers on complementary foods, amounts and preparation.	In addition: advise mothers on principles of child feeding and diets during pregnancy and lactation at clinic and during home visits.
CONTROL OF INFECTIOUS DISEASES	Immunize children at health post whenever possible. Advise on food and fluid intake during infectious events, especially diarrhea. Advise on sanitation in the home, especially for infant food. Check any recent deaths.	Immunize all children who can be reached. Provide simple oral rehydration service in the health post and in the home.	Establish full immunization and home sanitation programs. Establish oral and intragastric rehydration station, with referral possibility for severe cases.
NUTRITIONAL SUPPLEMENTS	Distribute nutritional supplements to pregnant women. Distribute vitamin A to newborns and identified cases of night blindness or xerophthalmia. Distribute available supplementary foods (protein rich) to young children and infants.	Initiate prevention program for iron deficiency anemia in pregnancy. Give vitamin A to newborns and deficiency cases. Give milk powder or supplements to moderate PCM cases with advise on use.	Establish preventive program for iron deficiency anemia. Administer vitamin A periodically to infants and preschool children. Establish supervised supplementary feeding program, with checks on development.
NUTRITIONAL RECUPERATION		Refer moderate cases of PCM to nutritional recuperation and education program, if available. Refer severe cases to health center or hospital.	Develop full nutritional recuperation and education services, with referral and follow-up system.

Source: "Nutrition: a Review of the World Health Program - 1" WHO Chronicle, Vol. 26, No. 4, April 1972, p. 171

NUTRITION COMPONENTS IN USAID
 INTEGRATED HEALTH PROJECTS
 TABLE 4

	AFRICA										NEAR EAST					
	Mali	Lesotho	Ghana	Liberia I	Sudan	Cape Verde Islands	C.A. Empire	Liberia II	Niger	Senegal	Zaire	Tanzania	Cameroon	Tunisia	Afghanistan	Egypt
BREAST-FEEDING	X															
WEANING		X	X											X		
NUTRITION EDUCATION	X	X	X	X	X			X	X	X				X	X	
WEIGHT CHARTS	X	X												X	X	X
MATERNAL SUPPLEMENTATION	Fe															
INFANT SUPPLEMENTS														Fe	X	
DEVELOP WEANING FOODS	X	X	X											X		
DIETARY FORTIFICATION														X		
FOOD PRODUCTION		G			X		F							X		
IMMUNIZATION	X			X		X			X					X		
DISEASE CONTROL	D,W				M									X	X	
WATER SUPPLY	X			X			X							M	D,W	
SANITATION	X		X	X	X	X	X	X	X	X				X		
FAMILY PLANNING	X	X	X	X				X		X	X					
COMMUNITY PARTICIPATION															X	
MASS MEDIA			X												X	

(S) Small Animals

(D) Antidiarrheal

(W) Deworming

(M) Malaria

(G) Family Gardens

(F) Fish Ponds

(Fe) Iron

September 11, 1978

Several weaknesses appear to exist in the nutrition components of the integrated health delivery system projects:

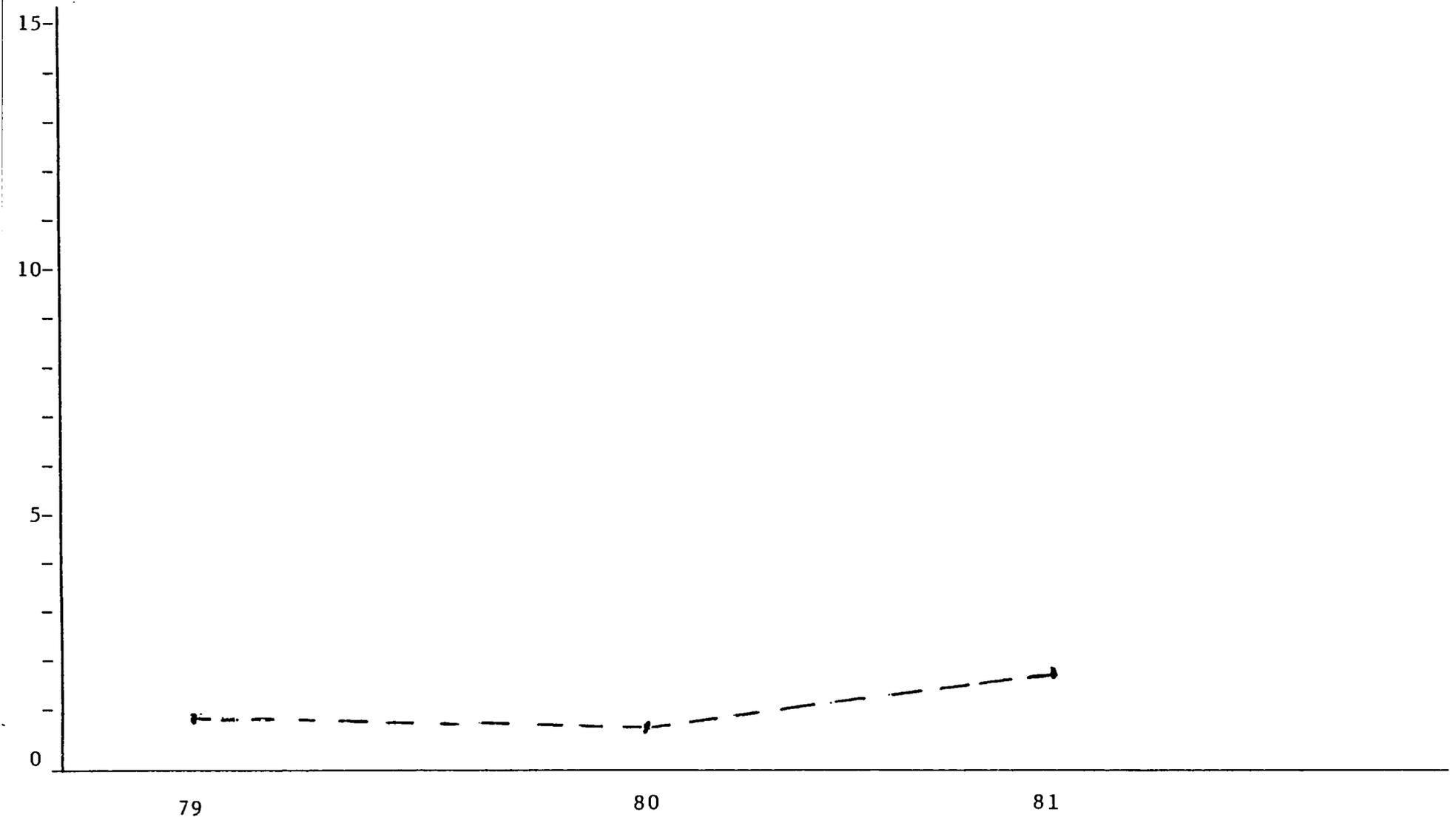
1. Nutrition education is listed in 8 of the 13 projects reviewed. The Project Papers, in general, do not give enough detail or specific information regarding target groups for educational campaigns. The message to be transmitted, and the means to be used.
2. Disease control including the control of malaria was reported in the Sudan project and deworming and antidiarrheal reported in Mali project: Parasitic infestations (Malaria, hookworm and roundworm) and diarrhea have a direct impact on nutritional status, particularly in children. Because of this effect, these are important interventions which are under-represented in the Africa's Region integrated health delivery system projects.
3. Other interventions that are under-represented and would strengthen nutrition activities in those projects are: breast feeding; maternal dietary supplements; and regular recording of child weights on weight charts.

There are only four independent nutrition improvement and intervention projects reported for Africa during the 1979-81 period. Two are in Zaire with total funding of \$823,000 in 1979 and \$800,000 in 1980, and \$1,787,000 in 1981. One project each in Benin and Cameroon. Benin funding obligations are for \$195,000 in 1979, with an increase of \$105,000 for 1980. Cameroon's projects has no funding obligation until 1981, which is for \$415,000.

NUTRITION IMPROVEMENT AND INTERVENTION
PROGRAMS/ACTIVITIES

<u>Benin</u>		<u>1979</u>	<u>1980</u>	<u>1981</u>
N680-0207	Soya Production/Nutrition (OPG)	195	300	0
<u>Cameroon</u>				
N631-0037	Cameroon Nutrition Planning	0	0	415
<u>Zaire</u>				
FN660-0079	Area Nutrition Improvement	0	800	1,787
H660-0055	Nutrition Planning	823	0	0
		<u>\$1,018</u>	<u>\$1,100</u>	<u>\$2,202</u>

NUTRITION IMPROVEMENT AND INTERVENTION PROJECTS
FY 1979 - 81
(\$ Millions)



XII. MCH/SELECTED POPULATION PROGRAMS/ACTIVITIES

OVERVIEW OF THE AFRICA BUREAU'S

MCH/SELECTED POPULATION PROGRAMS/ACTIVITIES

Reported under this heading are the MCH and selected population programs. All of the projects include training for several categories of health personnel. The type of training run the range from Traditional Birth Attendants in Benin to Physicians in Cameroon. Many of the projects are designed to create a maternal and child health/family planning integration of services.

The three projects recorded for 1979 have a funding level of \$1,018,000. For 1980, five projects will be funded at \$2,586,000. Funding for four projects in 1981 amounts to \$7,050,000.

Maternal and child health and family planning services are integral components of almost all of the integrated health delivery system projects. A summary of some of the family planning services are listed below for a few countries:

1. Cameroon

Intermediate level health workers will be trained to delivery family services.

2. Cape Verde

The population component is not specifically defined although MCH services will be delivered in the health posts/MCH centers.

3. Central Africa Empire

Health post nurses and assistant will be encouraged to attend Community Development Centers in order to maximize the dissemination of birth and MCH core techniques and information.

4. Ghana

Model I - Family planning is a major component of the comprehensive service. This service is offered on a weekly basis at the health center.

Model II - Daily family planning services are planned at the health post in Area II. Village-based contraceptive supply systems employing volunteers are to be established to distribute contraceptives.

Model III - The health post in Model III offers daily family planning services community health aides are trained and encouraged to promote family planning.

5. Lesotho

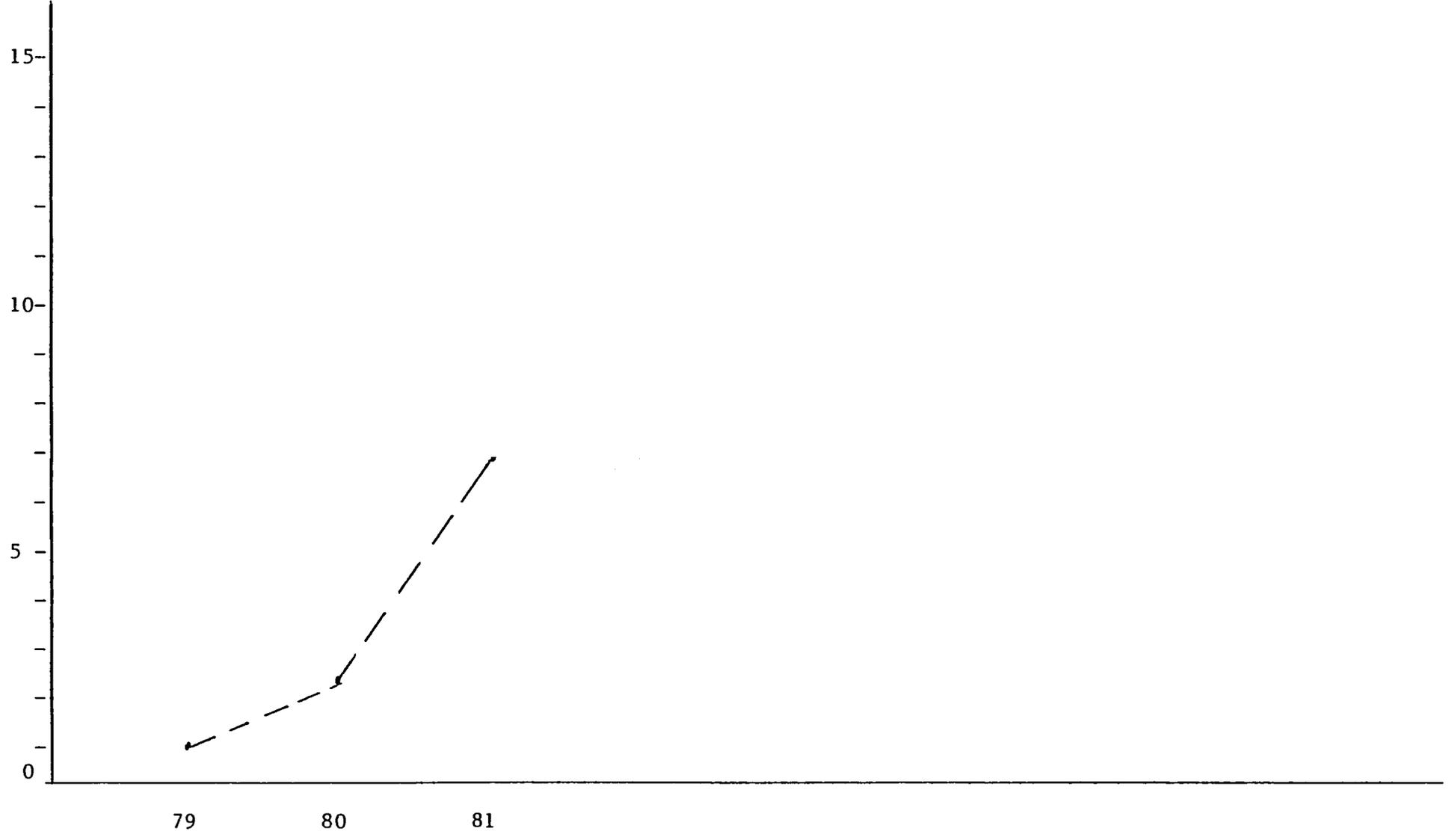
The Village Health worker, inconjunction with other health related duties, will be capable of dispensing family planning materials.

The Nurse Clinician (NC), as a result of MEDEX training, will be capable of providing family planning education and counseling. The NC will gather data on family planning practices, plan and implement family planning programs, and dispense contraceptives.

MCH/SELECTED FAMILY PLANNING

<u>Benin</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>
H680-0203 MCH Training Centers	0	600	0
<u>Cameroon</u>			
**H631-0021 Cameroon Reproductive Health	0	200	600
<u>Chad</u>			
H677-0037 Maternal and Child Nutrition Education(OPG)	0	145	
<u>Guinea</u>			
H675-0203 Mother/Child Health	0	0	200
<u>Kenya</u>			
**P615-0161 Family Planning	124	0	0
**P615-0193 Family Planning II	0	0	3,650
<u>Senegal</u>			
**P685-0217 Family Planning	500	500	0
<u>Tanzania</u>			
HP-621-0121 Manpower Training For MCH Aides	394	1,141	0
<u>Zaire</u>			
H660-0086 MCH/FP Outreach	<u>0</u>	<u>0</u>	<u>0</u>
	\$1,018	\$2,586	\$7,050

MCH/SELECTED FAMILY PLANNING PROJECTS
FY 1979 - 81
(\$ Millions)



XIII OTHER HEALTH ACTIVITIES

I. Education and Training

<u>Cameroon</u>		<u>1979</u>	<u>1980</u>	<u>1981</u>
H631-0009	Practical Training in Health Education	800	140	0
<u>Malawi</u>				
H612-0203	Malawi Health Education	0	420	0
<u>Swaziland</u>				
H645-0062	Health Manpower Training	-	-	-
<u>Tanzania</u>				
H621-0157	Village Health Worker Training	0	0	500
<u>Ghana</u>				
H641-0088	Community Health Team Support (Manpower Development in Community Medicine)	660	410	0
<u>Tanzania</u>				
H621-0154	Continuing Educ. Center for Health Professionals	0	790	0

II. School Health

<u>Tanzania</u>				
H621-0150	Tanzania School Health Program	<u>700</u>	<u>659</u>	<u>2,800</u>
		\$3,199	\$2,519	\$3,914

IVX Disparity Reduction Rates

Table 5 shows historical per capita Gross National Product (GNP) and Disparity Reduction Rates (DRRs) in Physical Quality of life (PQLI) for most of African countries that are AID-assisted. The significance of the data of the data in this table made clearer by these comments from Mr. Grant of the overseas Development Council.

"As the concept of over-coming the worst aspects of absolute poverty within a given timeframe (such as the year 2000) come under increasingly serious consideration, it is becoming evident that some readily usable measures of rates of progress in meeting basic needs are required to balance and supplement our present over-reliance on income indicators for this purpose. The rate of change of per capita GNP indicates general economic performance within and among countries, but it tells us little about the impact of this change on people. A new measure of the rate of change in the physical quality of life-a 'disparity reduction rate' (DRR)- to be used not instead of, but as a complement to, the rate of growth of GNP and changes in income distribution to measure program progress in meeting basic needs. The DRR concept, which is a response to these measurement needs focuses on the disparity between the basic physical and social conditions characterizing the life of the majority in the most advanced countries and the conditions in the particular country under consideration. The DRR indicates the annual rate at which this disparity is being narrowed - or widened. It can be used to simplify comparison of changes in individual social indicators (literacy, infant mortality, life expectancy) and if it is used in conjunction with a composite indicator, such as the Physical Quality of Life Index - to provide an overview the rate of progress made toward meeting basic needs within and among countries". (Source: James P. Grant, "Disparity Reduction Rates in Social Indicators - a proposal for measuring and targeting progress in meeting basic needs", Overseas Development Council, Monograph No. II, September 1978, P.I.)

Table 5 allows us to draw several tentative conclusions:

1. Eight African countries are at maximum value for the percentage of their population in absolute poverty. These countries are: Benin, Burundi, Chad Ethiopia, Mali, Rwabda, Somalia and Upper Volta.
2. Many African countries have low PQLI, that is very high average ratings for life expectancy, infant mortality, and literacy during the 1970s. Especially these countries: Mali, Niger, Upper Volta, Angola, Cameroon, Central African Empire.
3. Some countries have relatively high per capita GNP and low PLQI. See Senegal, Mozambique, Togo, Mauritania, Central African Empire, and Cameroon.

Table 6 shows the utilization of the DRR concept with specific indicators that make up the PQLI. The data in this table reveal two general points: There is a scarcity of good data in Africa as late as 1975; and Africa has not made fast programs in improving its life expectancy, infant mortality and literacy.

Table 5 Historical Per Capita

Historical Per Capita GNP and DRRs in PQLI of 40 African Countries

	Population, 1975 <i>(millions)</i>	Per Capita GNP, 1970-75 Avg. <i>(\$)</i>	Per Capita GNP Growth Rate, 1970-76 <i>(percentages)</i>	Per Capita GNP Growth Rate, 1960-76	Physical Quality of Life Index, 1970s	Annual DRR in PQLI 1950s-70s	Percentage of Population in Absolute Poverty ¹
Low-Income (36)							
Africa (26)							
Benin	3.2	124.0	-0.9	-0.2	27		75
Burundi	3.9	111.0	0.1	1.6	25		75
Cameroon, United Rep		273.0	0.5	2.2	27		33
Central African Empire	1.8	226.0	-1.0	-0.1	18		53
Chad	4.1	113.0	-0.8	-0.6	18		75
Egypt	36.1	245.0	1.6	1.8	44	1.2% ^b	
Ethiopia	28.6	97.0	0.4	1.7	22		75
Gambia	0.5	153.0	5.2	3.8	21		45
Guinea	4.5	126.0	2.5	1.2	20		70
Kenya	13.8	213.0	2.1	2.2	39		43
Lesotho	1.1	131.0	5.2	4.7	48		68
Madagascar	7.7	204.0	-1.6	-0.4	41		52
Malawi	5.1	115.0	5.4	3.5	30		62
Mali	5.8	90.0	0.9	1.0	14	0.4% ^c	75
Mauritania	1.3	287.0	1.6	4.1	18		34
Niger	4.7	132.0	0.7	0.3	14		67
Nigeria	64.7	297.0	5.5	3.5	27		30
Rwanda	4.4	97.0	1.3	0.3	27		75

Historical Per Capita GNP and DRRs in PQLI of 40 African Countries

	<u>Population,</u> <u>1976</u> <u>(millions)</u>	<u>Per Cap.</u> <u>GNP,</u> <u>1970/75</u> <u>\$</u>	<u>Per Cap.</u> <u>GNP Growth</u> <u>Rate</u> <u>1970/76</u> <u>percentages</u>	<u>Per Cap.</u> <u>GNP Growth</u> <u>Rate,</u> <u>1960/76</u> <u>percentages</u>	<u>Phys.</u> <u>Qual.of</u> <u>Life, Index,</u> <u>1970s</u>	<u>Ann.</u> <u>DRR in</u> <u>PQLI</u> <u>1950/70</u>	<u>% of Pop.</u> <u>in absolute</u> <u>Poverty</u>
Low-Income(36)							
Africa (26)							
Sierra Leone	3.1	203.0	-1.3	1.3	28		39
Somalia	3.2	111.0	-0.1	-0.7	19		75
Sudan	18.2	241.0	3.5	0.6	34		43
Tanzania, U. Rep.	15.6	154.0	2.6	2.6	30		54
Togo	2.3	250.0	0.9	3.4	24	0.7%	43
Uganda	11.9	265.0	-4.3	-0.2	40		64
Upper Volta	6.2	99.0	1.7	1.1	16		75
Zaire	25.6	136.0	0.1	0.9	32		60

Table 5 Cont...

Historical Per Capita GNP and DRRs in PQLI of 40 African Countries

Source OECD, based on World Bank data. PQLI and DRR data are drawn from Annex A.

	Population, 1966 (million)	Per Capita GNP 1970-75 Avg (\$)	Per Capita GNP Growth Rate 1970-76 (percentages)	Per Capita GNP Growth Rate 1960-76 (percentages)	Physical Quality of Life Index, 1970s	ANNUAL DRR in PQLI 1950s-70s	Percentage of Population in Absolute Poverty
Lower Middle-Income(31)							
Africa (14)							
Angola	6.4	601.0	1.6	2.9	16		
Botswana	0.7	316.0	6.7	5.7	51		31
Congo, People's Republic	1.4	465.0	2.2	2.3	27		23
Ghana	10.1	595.0	-1.3	-0.5	39		25
Ivory Coast	6.8	506.0	2.9	3.9	29		16
Liberia	1.6	415.0	1.5	1.4	26		20
Mauritius	0.9	552.0	4.8	2.2	72	3.3 % ^b	19
Morocco	17.9	436.0	3.7	2.3	40	1.5% ^c	21
Mozambique	9.3	333.0	-3.2	0.7	27		
Rhodesia	5.5	529.0	1.3	1.4	46		
Senegal	4.5	355.0	-0.1	-0.1	21	0.7% ^c	36
Swaziland	0.5	353.0	6.8	7.4	33		17
Tunisia	5.9	626.0	7.5	4.3	46		10
Zambia	5.1	415.0	0.1	1.3	38		15

a 75 percent in absolute poverty is the ceiling value for any country.

b Disparity reduction rates (DRRs) are for the approximate period 1950 to 1960. See Annex A-1 for the actual dates.

c Computed for period 1960 to mid-1970s from life expectancy, infant mortality, and literacy data in World Bank Development indicators (Washington, D.C. World Bank, 1978) See Annex C.

d DRRs are for the approximate period 1960-1970. See Annex A-1 and A-2 for the Exact dates.

e Computed value is less than 5 percent.

f Post World War II PQLI performance is calculated on the basis of an assumed literacy rate of 99. The DRRs for these countries reflect in this assumption and will tend to be lower if the assumption is not, in fact accurate.

HISTORICAL PER CAPITA GNP, LIFE EXPECTANCY AT BIRTH, INFANT MORTALITY, LITERACY, AND PQLI,
WITH DRRs, OF 30 AFRICAN COUNTRIES (WORLD BANK DATA)

	GNP Per Capita		PQLI ^a			Life Expectancy at Birth (years)			Infant Mortality (per 1000 live births)			Literacy (percentages)		
	1976 (\$)	Average Annual Growth Rate ^b 1960-76 (%)	Annual DRR 1960-74/75	1960	1974/75	1960	1975	Annual DRR 1960-75	1960	1975	Annual DRR 1960-75	1960	1974	Annual DRR 1960-74
Low-Income Countries	150	0.9	1.3%	19	33	36	44	1.4%	142	122	1.1%	10	23	1.1%
Ethiopia	100	1.9			22	34	38	0.7%					7	
Mali	100	0.9	0.4%	18	23	35	38	0.5%	123	120	0.2%	5	10	0.4%
Rwanda	110				27	36	41	0.9%		133		10	23	1.0%
Somalia	110	-0.3			19	35	41	1.0%					50	
Upper Volta	110	0.8			16	32	38	1.0%	182			7		
Burundi	120	2.3			25	34	39	0.8%		138		10	10	
Chad	120	-1.1			18	34	39	0.8%					15	
Benin	130	0.1			27	34	41	1.2%	110				10	
Malawi	140	4.1			30	35	41	1.0%		142			25	
Zaire	140	1.4			32	40	44	0.8%	104				15	
Guinea	150	0.4			20	34	41	1.2%	156			7		
Niger	160	-1.1			14	36	39	0.5%	200	162	1.5%	5		
Lesotho	170	4.6			48	38	46	1.5%		114			40	

	GNP Per Capita		PQLI ^a			Life Expectancy at Birth (years)			Infant Mortality (per 1000 live births)			Literacy (percentages)		
	1976 (\$)	Average Annual Growth Rate ^b 1960-76	Annual DRR 1960-74/75	1960	1974/75	1960	1975	Annual DRR 1960-75	1960	1975	Annual DRR 1960-75	1960	1974	Annual DRR 1960-
Mozambique	170	1.4			27	36	44	1.4%		93				
Tanzania	180	2.6			27	37	45	1.3%	190			17	63	5.2%
Madagascar	200	-0.1			41	36	44	1.4%	69	53	2.0%		40	
Sierra Leone	200	1.1			28	36	44	1.4%				7	15	0.6%
Central African Empire	200	0.3			18	35	41	1.0%	200			15		
Kenya	240	2.6			39	43	50	1.5%		51			40	
Uganda	240	1.0			40	43	50	1.5%	160			25	25	0.0%
Yemen Arab Republic	250				27	37	45	1.5%		160		10	10	0.0%
Middle-Income Countries	750	2.8	2.0%	56	67	49	58	2.6%	72	46	3.4%	61	63	0.4%
Togo	260	4.1	0.7%	19	27	34	41	1.2%	127	121	0.3%	10	12	0.2%
Egypt	280	1.9	1.6%	35	48	45	52	1.6%	109	101	0.5%	20	40	1.9%
Yemen, PDR	280	-6.3			32	37	45	1.5%		40			10	
Cameroon	290	2.8			27	36	41	0.9%	72				12	

	GNP Per Capita		PQLI ^a			Life Expectancy at Birth (years)			Infant Mortality (per 1000 live births)			Literacy (percentages)			
	1976	Average Annual Growth Rate	Annual DRR		1974-75	1960	1975	Annual DRR 1960-75	1960	1975	Annual DRR 1960-75	1960	1974	Annual DRR 1960-7	
		1960-76	1960-74/75	1960											
Sudan	290	0.4			34				41	49	1.7%	159	132	1.3%	15
Angola	330	3.0			16				32	39	1.1%		24		
Mauritania	340	3.7			18				36	39	0.5%				5 10 0.4%
Nigeria	380	3.5			27				34	41	1.2%	207	163	1.6%	25
Senegal	390	-0.7	0.7%	12	21				36	40	0.7%	193	158	1.4%	5 10 0.4%
Zambia	440	1.7			38				39	45	1.1%				41 43 0.2%
Liberia	450	2.0			26				37	44	1.3%		159		9 15 0.5%

^aThe PQLI (in this Annex) is based on World Bank data for life expectancy, infant mortality, and literacy. This data can differ from that used elsewhere in this paper to calculate PQLI figures for a particular country. Wherever PQLIs for a country are shown only under the 1974/75 column and not under the 1960 column, these are from ODC data.

Life expectancy at age one is estimated by using the infant mortality rate provided and the formula:

$$e^1 = \frac{e^0 - 1 + (IMR/1000 \times .8)}{(1 - IMR/1000)}$$

DRR (disparity reduction rates) are calculated according to the formula:

$DRR^{t+n} = (x_{t-n}/x_t)^{1/n-1}$ where x is the disparity between the social indicator performance of a country and the best possible in time t and t+n. This calculation yields a negative rate. For ease of exposition, however, this rate has been expressed as a positive rate of gap reduction. The negative rates signal increases in the gap and decreases in the PQLI or social indicator performance. In the case of the PQLI, the DRRs refer to the rate of gap reduction between unrounded PQLI figures.

The World Bank notes that the data for infant mortality and adult literacy refer to a variety of years, generally not more than three years from those quoted. This variation can introduce a substantial margin of error in DRR calculation in

the absence of knowledge as to the exact year to which the data apply. The DRR calculations in Annex A are based on exact years and are, therefore, more accurate.

^bAll growth rates shown in real terms.

^c1960 literacy figure of 98 per cent assigned by ODC.

^dDRR taken from Annex B for approximate time period 1950s-1970s.

^eDRR taken from Annex A-3 for approximate period 1950s-1970s.

SOURCE: World Bank, World Development Indicators: Annex to the World Development Report, Washington, DC, 1978.