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9. ABSTRACT

This country case-study attempts to identify problem areas in health and socio-economic development for the Philippines. Particular attention has been given to the definition of those problem areas influenced by or amenable to change by cooperation between the Philippine government and international assistance agencies. There has been no attempt to develop a specific plan for action but rather to find those areas in which planning might be most helpful. This study is based upon the reasoning that there are unifying social-cultural forces that influence the operation of economy, the government, education, health care, etc.. Disease, the negative manifestation of health, represents the way in which a population deals with the environment as much as it represents the presence of a disease-causing agent. Hence comes the hypothesis that the Philippine society is a result of the concepts of limited good and mutual survival whereby they feel that to enjoy good fortune is necessarily to take it away from someone else. Many kinds of data have been used in this hypothesis, and they uniformly state or suggest this conclusion. This study consequently is not a comprehensive view of the health sector as such but is a survey of the various influences that combine to produce the conditions found in the health sector.

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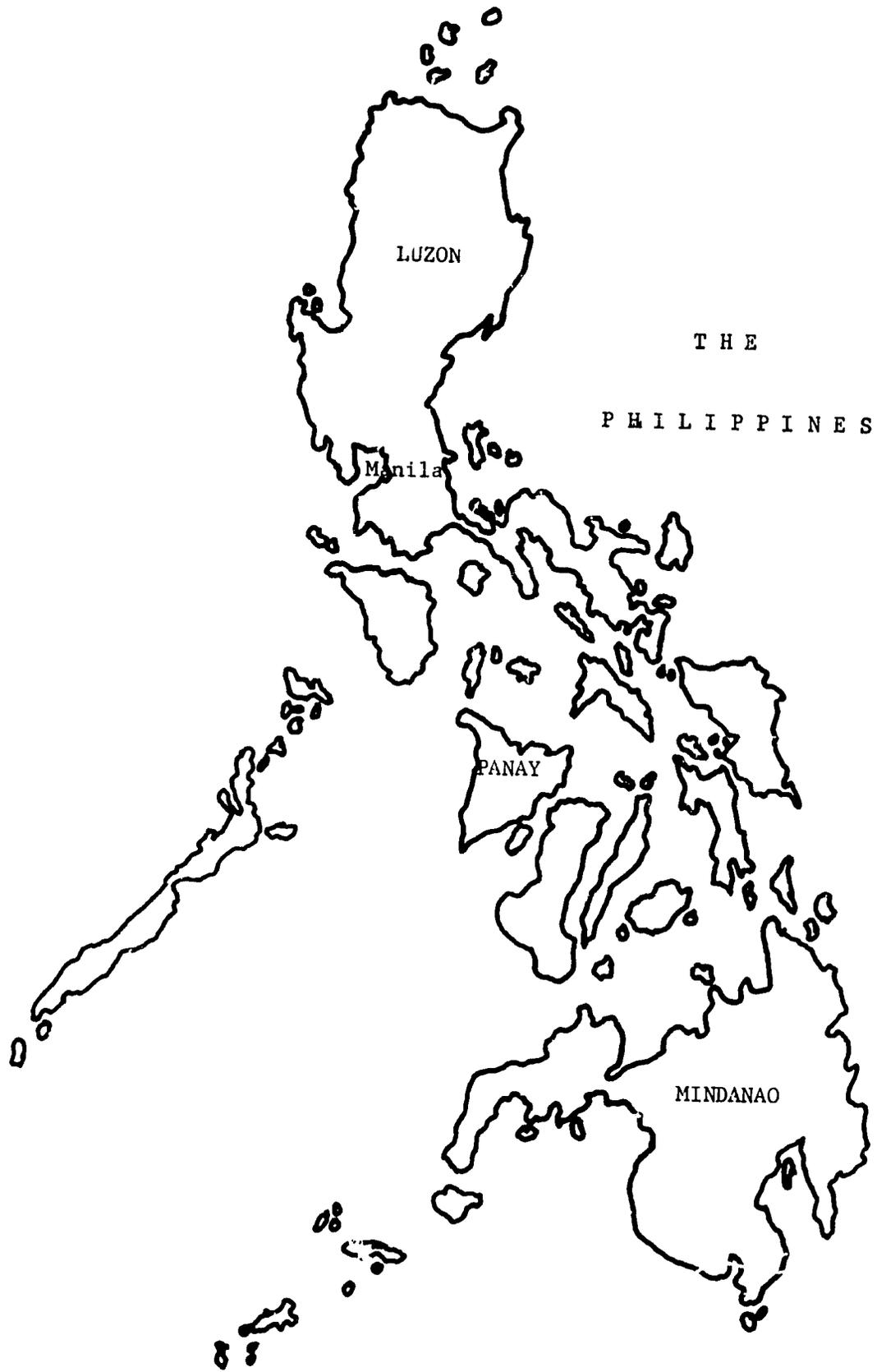
THE DYNAMICS OF HEALTH

*An Analytic Series on the Interactions
of Health and Socioeconomic Development*

IV: THE PHILIPPINES

**U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE**

**OFFICE OF INTERNATIONAL HEALTH
DIVISION OF PLANNING AND EVALUATION**



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The best available information has been utilized as the basis for analysis and judgment. The selection of data and the judgments derived therefrom are the responsibility of the authors. As new data of significance become available, revisions will be made.

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July, 1972

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LIST OF ABBREVIATIONS

BCG	A vaccine prepared from a living attenuated strain of tubercle bacilli and used to vaccinate human beings against tuberculosis.
ILO	International Labor Organization
IBRD	International Bank for Reconstruction and Development
IMF	International Monetary Fund
MCH	Maternal and Child Health Services
RHU	Rural Health Unit
UNDP	United Nations Development Program
USAID	United States Agency for International Development
WHO	World Health Organization

PREFACE

This country case-study is an attempt to identify important problem areas in health and socioeconomic development for the Philippines. Particular attention has been devoted to the definition of those problem areas influenced by or amenable to change by cooperation between the Government of the Philippines and the international assistance agencies. There has been no attempt to develop a specific plan for action but rather to identify problem areas in which planning might be most fruitful.

The study is based upon the hypothesis that there are unifying social-cultural forces that influence the operation of the economy, the government, the education and health care systems, etc. Disease, the negative manifestations of health, represents the way in which a population deals with the environment as much as it represents the presence of a disease-causing agent. Working from this perspective, we have developed the hypothesis that the Philippine society is a result of the concepts of limited good and mutual survival whereby the people of the Philippines feel that to enjoy good fortune is necessarily to take it away from someone else. Many kinds of data have been employed in its compilation, and they uniformly suggest or state the same conclusions, i.e., that the Philippine people recognize the right of all individuals to share the limited wealth around them and work to this end through a system that regards family and filial ties above all others, either to employers (who are often, in fact, relatives), to friends, or to the government.

The succeeding chapters therefore present examples showing how the Philippine society deals with its different sectors in the light of this hypothesis. Its aim is to present the manifestations of a social system which is more than a social system; it is the political, economic, health, and educational systems as well. This study is consequently not a comprehensive view of the health sector as such, but is a survey of the various influences that combine to produce the conditions found in the health sector. It is modest in scope, but its focus on particular attitudes illustrates conditions that the authors feel are exemplary of the system. Nevertheless, it provides a basis on which effective planning for action can be developed.

As with many studies of developing situations this one particularly suffers from the lack and/or unavailability of data that would have aided in its preparation (and perhaps made it unnecessary in the first place). The ready availability of meaningless non-data is confusing and useless, and is perhaps responsible for some of the situations under discussion. Conclusions and inferences are necessarily drawn from diverse sources. The overriding theme, however, continues to be that the people of the Philippines are in competition for a relatively small amount of wealth, a wealth they feel obliged to share within certain group boundaries. The manifestations of this attitude are described in the following chapters.

Areas of Concern

The general statements outlined below show trends operating in the Philippine sectors and provide a framework for reading the rest of this study. These statements are substantiated in the text.

Major areas of concern for the Philippines seem to be the following: (1) dealing with a social system that, on the one hand, encourages modern thinking and beliefs, but on the other hand denies the realization of such aspirations (2) dealing with a high rate of in-migration to the country's urban areas (especially Manila) without a corresponding adequate mechanism for educating and employing the migrating population in an urban setting (3) dealing with the overall poor nutritional status of the population, which is the result of socially-induced subsistence agricultural production and consumption (4) dealing with an inability to implement necessary government programs, owing to voter preferences for pork-barrel allocations and general irresponsibility on the part of voters and policy makers alike (5) dealing with poor health and sanitary facilities that are a direct reflection of the government's inability to institute and maintain meaningful programs and facilities and that grow out of social and cultural traditions (6) orientation to short-term, immediate goals rather than future goals (7) dealing with the absence of a unifying national idealism that fosters concern for national rather than individual interests.

Areas for Potential Action

The following advisory statements are broad and non-specific as far as particular programs are concerned. The purpose of this study is not dictate a plan of action or development policy. Specific programs are discussed in the succeeding chapters with the hope that they will elucidate the forces that do dictate such policy.

In the light of all the recommendations that have been made and ignored, it seems inadvisable to follow the same route. Realizing the many ways to approach and solve problems, we therefore limit our commentary to illuminating areas where, from the perspective of this study, reallocations of resources would prove most beneficial.

- (1) standardization of development policy whereby future projects would be freed from present development contingencies and debt obligations
- (2) creation of a national marketing system needed to stimulate fishing and agricultural production. This system should reflect the nutritional and economic needs of the population
- (3) upgrading present rural development programs, mostly through administrative streamlining
- (4) slowing urban immigration by enhancing the rural life-style, and broadening educational/vocational opportunities for urban migrants
- (5) securing more reliable means of collecting revenue
- (6) stabilizing the economy and educating political decision-makers
- (7) administrative reform of government programs - including health
- (8) improvement of data collecting and analysis systems
- (9) institution of a workable planning system

Geographic and Climate

Over one hundred and fifteen thousand square miles make up the land area of over 7,100 islands of the archipelago of the Philippine Islands. Diversity of physical environment is cause for the development of definite regionalism within the islands. Transportation between and on the islands is only extensively developed on the water. Slightly more than one-third of the total land surface is classified as cultivated. One-half of the land is retained in forests, while the rest is in uncultivable grasslands, swamps, and marshes. Depletion of nutrients owing to erosion of the soil makes large areas of the island unsuitable for sustaining crops. The existing crop land is generally of low fertility.

People and Culture

The Filipino culture is a mixture of Asian, Spanish and American traditions. In all, there are over fifty mutually unintelligible languages in the Philippines. The people generally rely on traditional healers and medical personnel rather than on modern medical techniques. In the case of rural inhabitants, problems of access and availability probably contribute largely to the non-use of modern medicine. A large family is desirable in the Philippines, partly for cultural reasons, and partly in response to the historically high infant mortality rate. This rate is aggravated by the poor sanitary conditions that prevail in rural and urban slum and squatter areas.

Living Conditions

For a large portion of the Philippine population daily life poses numerous health hazards, especially among the rural population and the urban squatters and slum-dwellers. Inadequate water supplies, sanitation facilities, and housing are the major problems.

At the end of FY 1969 less than half of the total Philippine population had adequate and clean drinking water available to them. In some urban areas where water supply systems are available they are unsafe because of leakage and are in need of repair. In the rural areas the major sources of water are artesian wells and springs. The Four-Year Plan for FY 1971-1974 aims at expanding and rehabilitating existing systems and constructing new systems in areas of dense population while increasing the number of artesian wells and springs in remote areas. Even with the completion of the plan, only about 3 million additional people will be served.

In 1960, people living in 45% of all dwelling units had no toilet facilities at all, and those living in 36% of the dwelling units used open pits. The present sewerage system in Metropolitan Manila is obsolete and inadequate. Raw sewerage and industrial waste are discharged into the Manila Bay, not far from existing port facilities and beaches. The Four-Year Plan also proposes to improve the Manila system. In the rural areas the ordinary type pit-privy is used, and indiscriminate defecation is also common.

Garbage collection is inadequate in the urban areas and generally non-existent in the rural areas.

Housing in the urban areas is inadequate for the large and growing squatter and slum-dweller population. While the population of the Philippines is increasing at a rate of 3.2% per annum, the cities are growing at rates from 5-8% per annum; sometimes as fast as 10%.

Rural housing presents some health hazards in that animals live immediately beneath the house and many biting insects are attracted to the area. The thatched roofs which are most commonly used also serve as lodging for several disease-carrying insects and rodents.

The facilities that contribute to healthy living are generally not available to the rural population and the urban squatter and slum-dweller. These groups make up the majority of the population, thus these inadequate conditions contribute to the large burden of morbidity and mortality which is experienced in the Philippines.

Increasing environmental pollution is becoming a national concern. Pollution from automobiles, from industrial by-products, and from herbicides and pesticides aggravate existing disease problems and create others.

Education

Although incomplete implementation of universal and compulsory primary education produces sixth-grade graduates from only about half of the primary school age group, the situation is steadily improving. The concept of "community schools," which gear curriculum to the needs of the child and his community, is one of the progressive and promising developments in primary education in the Philippines.

Public secondary education is more seriously deficient, reaching only 10% of the student population ages 13-16 in 1964-1965. The recently founded barrio high schools, supported by local government and private groups, are helping to extend education to a greater number of prospective students.

In order to meet middle-level manpower needs, the government must succeed in establishing a small number of first-class vocational schools and skill centers. Vocational education and private university education (90% of total college enrollment) suffer from rather low standards of admission, teaching, facilities, and student achievement. Compounding the manpower shortages in some fields, student preferences center on the prestigious professions in which large surpluses exist in the labor market.

Government

The Philippine government could be described as a vast, central bureaucracy with pervasive control granted by the constitution but insufficient funds to implement all its lawful powers. Since a large percentage of funds of barrios, municipalities, and provinces are authorized, collected, and doled out by the central government, and since major areas of local concern such as education, health, agriculture, public works, community development, and the courts are controlled by national representatives, local government officials are necessarily dependent on their skill in obtaining funds and favors from national political leaders. The local official's personal relationship to the party is mutual in that national leaders must gain promises of support from regional leaders who are able to turn out the vote at election time.

Personal alliances are also important to the individual seeking favors from government officials. Personal rather than legalistic considerations often predominate in the operation of formal democratic institutions.

The paternalism inherent in this system definitely stifles local initiative in dealing with problems in a way unique and successful to the particular community. It has been repeatedly noted that improvements imposed by outsiders are often shortlived; local cooperation is extended only for as long as the "agent of change" is physically present.

The problem of assimilating change rather than merely impressing an outsider is further complicated by the language problem, a problem virtually ignored in the assignment of personnel by the central government. Quite literally, the local resident and the national representative may speak different languages and may communicate in a third language, English, foreign to both of them.

Steps in the last decade to grant greater autonomy to the barrios have encouraged self-help efforts and increased the status of local officials. The establishment of barrio high schools is one result of the local community not waiting for funds or policy from the national government.

Economy

The economy of the Philippines is characterized by low productivity in the agricultural sector in the light of a high population increase. In contrast, workers in the industrial

sector earn up to three times as much as those in the agricultural sector, yet comprise only one-third of the working population. An economy in need of increased participation by the public sector is seemingly denied this participation because of past failures and poor management of resources, relying mostly on a pork-barrel system of allocation.

From 1948 to 1966 national income increased by at least 150%, whereas population increased over the same period from 19.1 million to 33.5 million, or 75%. However, because of inflation, per capita income at 1955 prices increased only 50% and was unevenly distributed.

The contribution of agriculture to the real national income declined from 40.3% in 1948 to 32.1% in 1966. In 1966 approximately two-thirds of the labor force contributed only one-third of the national income. Per capita income in the agriculture and forestry sectors is only about one-half of the national average.

According to an April 30, 1972 article in the Washington Post, some 90% of the Philippine families must share only 22% of the nation's income. This article also stated that the Philippines had one of the highest inflation rates among the Asian members of the IMF. Consumer prices rose 23% compared to slightly over 20% in 1970.

Population

A population that promises to double by the year 2000 (a 3.2-3.5% growth rate with a present population over 37 million) is caused by (1) a declining death rate and a consistently high birth rate, and (2) the social idea that having many children is desirable. Population movement is toward the urban areas, with some urban areas showing growth rate increase of 2.2% to 9.2% in the last decade. Recent government interest in population growth is aimed at slowing the rate of increase. With this interest, however, comes the realization of the problems of implementing family planning programs in a situation in which a high percentage of the population does not have access to care and in the face of an administrative system of limited reliability.

When discussing the health status of the population, it is important to realize that estimates of non-reporting run as high as 30% for births and 27% for deaths. Even in this light it is possible to determine that the leading causes of death are communicable diseases. This is true even though the actual number of deaths from communicable diseases has fallen markedly, which indicates a rise in socioeconomic status as well as improved access to and adequacy of preventive and therapeutic services.

Health Status of the Population

Infant mortality is a sensitive indicator of environmental hazards and rudimentary perinatal care. A relatively high infant death rate (72 per 1000 live births) indicates these environmental hazards as well as a lack of health care for the infant and the poor nutritional status of pregnant women.

Tuberculosis accounts for about 25% of adult mortality and again suggests the inadequacy of housing and nutrition.

It can be surmised that about one-third of all deaths correlate highly with the quality of housing and nutritional status of the population (diseases of the respiratory tract). Approximately 8% of all deaths (enteritis) relate directly to the sanitary status of the environment: food handling, water supply, and sanitary sewerage disposal. This suggests that about 45% of all deaths can be readily influenced by alterations in the quality of the environment, housing, and food. In addition, other deaths might have been averted by access to health care. Nearly 11% of all deaths are ascribed to various categories of obscure cause and senility. The real percentage of those dying who have no access to health care is close to 40%.

Functioning of the Health Care System

Certain trends in the functioning of the health care system indicate that (1) increased

appropriations for health care by the government of the Philippines are more than swallowed in rising costs (2) the results of the data collection system as it presently exists makes it difficult to evaluate the quality or quantity of health care delivered to the people of the Philippines (3) government-approved exchange programs and the kinds and distribution of health personnel make what appears to be an adequate number of health personnel inadequate (4) the apparent misallocation of available resources seems to be the result of an inadequate information-gathering system, political loyalties, and administrative problems.

The result of these idiosyncracies is a system that allows disease to spread within a population even with additional expenditures. More money will not make the system work more efficiently, and past performances may in fact suggest that increased expenditures will only enlarge its inefficiency. Furthermore, technology transfer and equipment transfer will not alter the situation significantly because technical problems have not been the chief cause of the situation. It seems that the most appropriate technical assistance that can be given is in administrative organization, planning, training, and reform.

The Costs of Disease and the Costs of Inaction

A society bears the cost of disease in many ways, most of them indirect. Also, the costs to a society of not acting to control a disease may cost more than spending money on control measures. A good example is tuberculosis. Aspects of a disease that are seldom considered include: the costs of educating children who die before they become productive, the potential years of productivity forfeited owing to premature death, the costs of lost wages owing to worker absenteeism, and the costs of excess food consumption caused by the illness.

In this study we have presented some cost/benefit considerations for cholera treatment facilities vs. vaccination programs and for TB vaccination programs vs. failure to deal with the disease. Both instances suggest that better use of the available resources could be made.

Nutrition

Various factors contribute to the low production of the people in the Philippines. There is evidently a socioeconomic leveling mechanism that prevents the agricultural or industrial advancement of the population, even though many of the people have adopted modern attitudes and aspirations. People are hesitant to excel in production for fear of retribution by their peers. Guthrie sees this as being one of the major factors for the continued subsistence level of the population. The implication of such leveling for nutrition is that it prevents the production and consumption of foods necessary for normal growth and development. It also prevents the construction and maintenance of proper medical and sanitation facilities that would help eliminate the widespread incidence of parasitic and other curable and/or preventable diseases. It does, however, allow for continued marginal survival for a large number of people.

Malnutrition in young children may in many cases be the result of early weaning (sometimes due to pregnancy) onto starchy gruels (commonly rice). Surveys of infant feeding practices indicate that many children are sufficiently nourished only during the time of breast feeding. The tendency to breast feed varies (estimates are as high as 80%), but there are indications that the tendency decreases as families become more urbanized.

Diet surveys show that there is an overall dependency on polished rice and that mothers do not vary their diets either before or after giving birth. Their overall dietary intake is customarily low in protein, thiamine, vitamin A, and ascorbic acid. Major disease problems are reflected by deficiencies in nutrition. Beriberi (caused by thiamine deficiency) is a major contributing cause of infant mortality, and enteric parasitism is estimated to affect 85% of the population.

Studies also indicate that there are strong social and cultural practices that prevent the adequate utilization of existing nutritional resources and work to the detriment of high risk groups.

Government feeding programs, operating under the assumption that malnutrition is best combated in young children and mothers, have been established in parts of the Philippines in a effort to raise the level of nutrition and also to educate mothers in feeding practices of young children. Thirty-two such centers are now in existence.

To date, there has been no development of a national policy in food, health, and agriculture. The implementation of such a policy could improve the economic and nutritional status of the population by dealing with areas of overlapping responsibility.

Development Projects

Major development projects for the Philippines emphasize a sophisticated planning mechanism aimed at the much-needed participation of the public sector in the economy. However, owing to a poor performance record of plan implementation in the past and projected contingency financing, the present development plans may be jeopardized.

The Four-Year Development Plan, covering Fiscal Years 1971-1974, provides a set of coordinated policies and development strategies for achieving the general economic goals of effecting maximum growth consistent with stability and a more equitable distribution of income and wealth.

The basic target of the plan is a gross national product (GNP) of P36,308 million (in constant 1967 prices) by FY 1974, from P27,783 million during 1969. The anticipated growth rate for FY 1970 and FY 1971 are 5 and 4.5 percent, respectively. After FY 1971, the rate is expected to reach 6.5 percent by 1974. The Plan's estimates of an annual growth rate averaging 5.5 percent for 1971-74 represents a real per capita income growth of about 2 percent per year because of the reported population growth.

Failures of previous development plans have been attributed to the failure to raise money through taxation, the low rate of savings by the people and the government, the low level of coordination between projects, and the general apathy of the people and the political system whose priorities favor local (pork-barrel) expenditures or no expenditures at all.

GEOGRAPHY, CLIMATE, SOIL

The Philippine Islands are situated close to the Asian mainland and extend 1,000 miles north to south. The principal island of Luzon lies 500 miles off the Chinese coast and 250 miles directly south of Taiwan. The principal southerly island of Mindanao lies very close to the northern islands of Indonesia.

The Philippines have a comparatively small land area, not much larger than the British Isles, with 115,000 square miles spread over 7,100 islands. The island nation has a varied topography with many mountainous regions, valleys, high plateaus, coral atolls, broad plains, and numerous volcanoes.

Transportation is most extensively developed between and within the islands on the waterways and airways. Most early towns or barrios were situated on the waterways or along the bay areas and sheltered coast-lines. Manila, on the major island of Luzon, is located on and prospers around one of the best natural harbors in the world.

Rail and roadways, however, are not as extensive or efficient as they should be. In 1958, 37% of the barrios in the countryside lacked road connections of any sort. A large percentage of highway funds are spent on maintaining and improving the existing road system. An energetic road-building program was in progress in 1967; however, and circumferential roadways are planned for connection of the major towns and cities of Luzon, the Visayas, and Mindanao.

Macadam and earth roads comprise 84% of the total road system and are the least durable and reliable, with earth roads becoming impassable in rainy weather and macadam requiring repair very frequently. Bituminous roadways comprise 13.9% and concrete a mere 2% of the road system. Therefore, although roads are more predominant in the populated regions and around the major city of Manila, the quality leaves much to be desired and thus, their usefulness is questionable.

The Philippines were originally well-covered by tropical forests. After European man settled on the Islands for over 400 years, much of this protective covering disappeared. Slightly more than 1/3 of the total land surface is classified as cultivated. One-half of the land is retained in forests, while the rest is in uncultivable grasslands, swamps, and marshes.

The climate in the Philippines is most accurately described in terms of varying degrees of rainfall rather than varying temperatures. Temperature is constant and hot for most of the islands; fluctuations are due mainly to the varying elevations of the land in mountainous regions. Rainfall differences are more important, and the Philippine Weather Bureau classifies four types of climate based on differing types of rainfall.

Extremely high humidity is a common feature of Philippine weather. Manila averages 77% throughout the year. Mold and fungi flourish very easily in this climate, and spoilage of goods and food is prevalent. However, in the dry season many areas, particularly in the west, are afflicted by moderate to severe drought which affects the water supply and crop yields of the Filipino rural inhabitants.

Typhoons must be considered in the climate of the Philippines. Considerable precipitation throughout the year occurs as an average of 15 out of the 20 typhoons occurring in the Pacific each year pass close by or touch the Islands. Disastrous winds and rains occur, but many times a typhoon will bring relief from the droughts which are just as disastrous.

The large quantities of precipitation during short intervals of time contribute to another serious problem in the rural areas: depletion of nutrients and the erosion of soil, making large areas of the Islands insufficient for sustaining good crop yields. Approximately 22 million of the 29 million acres of farmland have slight to severe soil depletion. Strip-ping of forest lands, flood conditions, and silting up of rivers and harbors will no doubt continue unless strict control is imposed more effectively concerning the choice of crops, plowing methods, and retirement of depleted soil to orchards and forests.

The physical characteristics of the Philippines present a variety of conditions within its tropical placement: extremes of wet, humid weather contrast with drought-producing periods. Transportation difficulties and the constant threat of storm damage make dissemination of health services a challenge. Within the large population centers and in the rural areas, problems with sewage, flood and wind damage, and year-round heat and humidity also create certain health problems.

PEOPLE AND CULTURE

The Philippines is distinguished by having people from a variety of cultures and has been accordingly influenced by them. The Spanish ruled for 350 years until their defeat in the Spanish-American War (1898) when the Philippines came under United States rule. The Philippines remained under the authority of the United States until it acquired its independence on July 4, 1946, excepting the years of 1942 through 1945 when the country was occupied by the Japanese. The Philippines is unique in that it has an Asian history, with Spanish Catholicism and Western political and economic institutions superimposed upon and integrated into its Asian culture.

Population Distribution

From 75-85% of the total population reside in rural areas. The present rural settlement pattern is based upon the original Malay village, called a Barangay, which consisted of a group of houses, usually along a waterway or road, under the rule of a chief (datu). In addition, there were isolated houses and also small clusters of dwellings scattered over the countryside; such hamlets were called sitios. In order to rule, the Spanish established a number of stylized towns, called poblaciones, built around a plaza faced by a Catholic church, a government building, and the homes of the leading citizens. The barangays and sitios which expanded over the years now form the barrios. The barrio is the principal settlement form of the entire country. The 1960 census reported about 26,000 barrios, with an average population of about 900, each containing one primary village and many sitios.

The urban population is concentrated in the Greater Manila Area; 56% of all urban residents who live in chartered cities are in Manila and its satellite cities of Quezon, Pasay, and Colocan. Only five other cities--Cebu, Davao, Iloilo, San Carlos, and Bacolod--have populations of over 100,000.

There are some fifty ethnic linguistic groups in the Philippines. Ninety percent of the population fits into the relatively homogenous lowland Christian ethnic category. The remaining ten percent consists of the Moslems, Igorots, Chinese, Negritos, and Dumagats. Within the minority groups are also other distinct sub-groups.

Attitudes, Beliefs, and Practices Which Relate to Health Status

A common trait of all the Philippine cultural groups is the unity of the family. Family members depend upon one another for emotional and physical support. The basic family unit consists of parents and children; kinship ties are extremely strong, and family allegiance extends to all relatives and godparents and far exceeds national or social brotherhood ties.

The following discussion primarily concerns the majority lowland Christian group; essentially the country peasant who lives in the agrarian setting. It is recognized that there is no "typical" Filipino; the following characteristics refer to certain areas, and certainly do not refer to every individual in the area.

To the Filipino, a healthy person is one who is fat, able, never bedridden, and always gay. Illness and disease are feared because they have an emotional and economic impact upon the family. It is believed that illness and death are caused by supernatural beings and forces. When the supernatural beings are displeased, tragedy befalls the offender. Many illnesses are believed to be caused by spirits of the dead who visit their former abode. Those illnesses which are not caused by supernatural beings are attributed to an unbalanced relationship of elements inside the body, due to over-consumption of cold or hot food. Natural illnesses, or those not caused by supernatural beings, include such common ailments as colds and stomachaches (indigestion). Ailments associated with the supernatural are tremors, tics, dizziness, delirium, and coma.

There are several types of specialized local and traditional healers who are called upon in the case of illness. For childbirth, the midwife is used; the midwife may be male

or female and is trained through observing others practice the art of midwifery. The ilot or (hilot), is a massage-curer used particularly after childbirth. The ilot is either trained or born with his massage abilities. The primary traditional healer is the sirkano. He enters the profession through a call from the not-human (the supernatural powers that be) and is able to consult with the not-humans when illness befalls a patient. He also uses offerings (usually of chickens), applications of special herbs and leaves, special beverages, and incantations. Most rural people prefer local healers to modern medical personnel more because of the personal relationship they have with the local healer than an actual disbelief in the effectiveness of modern medicines. When they have encountered modern medicine they have often been treated rudely and impersonally, thus preferring local, non-bureaucratic care. It is not known whether there is usually sirkano in every village. If there is, then care from him is more accessible for many people than care from a physician.

In most cases the physician is called in when the sirkano has given up hope. Calling the physician is an admission of defeat, and preparations are made for the immediate death of the patient. In cases where the physician is able to treat the patient before such final stages, he encounters much difficulty in the administration of treatment. Most of the people do not like to use painful ointments or bad-tasting medicine; if the patient is a child, such medicine is usually not given. There is also the belief that if one pill is good, many should be even better. Due to the misuse and misunderstanding of modern medicines, the physician often treats by means of injections which he personally gives. The physician may also be forced to place the patient in a clinic or hospital because care cannot be delivered adequately in the home.

Preventive care in the modern medical sense is also often difficult to provide. Where a series of vaccinations may be available, many people will take only one injection as they feel the one should be sufficient. Some assume that if one person in the family is vaccinated, the other members of the family are also protected.

Attitudes towards children have significant health implications. It is believed that children are gifts from God; not to welcome the birth of a child is believed to bring punishment from God in the form of lingering sickness or physical deformity. The Asian tradition of "face" and the Spanish tradition of "machismo" combine to give the Philippine man the attitude that he must father many children to be a real man.

Pregnant women are not treated deferentially during pregnancy. A pregnant woman is not encouraged to rest. Birth is attended by the midwife, with help from female relatives and the husband. Midwives take several precautions, including the boiling of scissors. Many women will not seek the services of physicians because they are embarrassed by their thorough examinations. Midwives (even those who are male) are desirable because even during the delivery they never look at the vulva and touch only the child with their hands.

Following delivery, the mother enters the five-month period known as tangad, which means "to take care." It is believed that at this time both mother and child are especially vulnerable to ills and that care must be taken with them. Tangad is a set of regulations designed to ensure an ample, nourishing milk supply. During this time the diet of the mother is supposed to be rich in vegetables, fish, and papaya. The day following delivery, the mother is given a vigorous massage by the ilot; such massaging is given each day for several days thereafter. Most mothers also wear a tight band around their waists, following delivery.

Babies are given much attention. Whenever they cry they are fed. Younger children constantly play with the newborn. Since the germ theory of disease is either unknown or misunderstood, infants are constantly exposed to infectious organisms. By the second month of life the infant is without diapers. He is wiped off after he defecates; when he urinates and wet his clothing the clothing is wrung out, but not changed. The infant is bathed every day in warm water up to the age of five months, and after that in water from the well. If the water is contaminated, this bath poses a health hazard to the infant, making him more susceptible to parasitic infections. A common practice which may have health implications especially for children is the wearing of wet clothing. After washing their clothes, the mother immediately puts them back on the children before they are dry. The usual clothing of children is a shirt for boys and a longer blouse for girls. They do not wear shoes, and are thus exposed to hookworm.

Philippine children are not encouraged to do things beyond their abilities; a child is not made to feel that his skills are not up to those of others his age. A good child is one who is quiet, respectful, and obedient. Basic methods of discipline are fear and threats. This is effective because parents themselves are fearful of the supernatural.

A difference is observed between the majority of the rural areas and the urban areas with regard to violence. In the rural areas, conflicts, unless absolutely necessary, are minimized. Adolescent boys are strongly discouraged from fighting, and it is felt they should fight only in self-defense or after great provocation. This attitude probably persists into adulthood. In the urban areas, however, there exists what is known as a "climate of fear." Children play cops and robbers type games with real weapons. In Manila, the homicide figure for 1964 was 8000. In 1965, the population estimate for Manila was 1,339,000; of these, approximately 1,115,000 persons owned firearms. Men of any prominence have bodyguards; homes are protected by barred windows and high fences. Outside of the cities, violence is observed on the highways (in the form of bandits) even in the daytime. In addition, among all Moslem groups, bearing weapons is considered a necessary component of masculinity. The Moslem Maratabat refers to "face" or personal esteem; if it is offended, one may kill.

A study recently completed by the Rand Corporation states that the crime crisis seems limited to the Manila area. At the province level, crime rates seem to be dependent on ethnic factors. Fast-growing cities have had relatively high crime rates, sometimes reinforced by ethnic factors. Violence does tend to peak at the time of elections and a little after, when political scores are settled.

One final area must be considered in referring to health and culture. The sanitary conditions in rural and urban slum and squatter areas are far from adequate. In the rural areas, families tend to keep their own yards clean, at least in the front, but roads and other areas between household units are not cared for. Drinking water usually comes from creeks or wells, both of which may be polluted. Urinating and spitting wherever convenient is the custom. These habits are taken by the rural migrants into the cities.

LIVING CONDITIONS

The comfort of the home surroundings and the safety of the environment in the Philippines varies for the individual according to the part of the country in which he lives and his socioeconomic status. Water supplies, sewerage treatment facilities, solid waste disposal systems, housing; and air, water, and noise pollution have a decided effect upon the quality of life experienced by each individual.

Water supplies

At the end of FY 1969 approximately 16.7 million people, or 46% of the total Philippine population, had adequate and clean drinking water available to them. The largest waterworks system was that of Manila and its suburbs, serving approximately 3 million people. Outside of Greater Manila, 1,294 waterworks systems were in operation serving 46 cities, 611 municipalities, and 1,230 barrios, with an estimated combined population of 7.45 million. In the more remote areas of the country, 20,240 artesian wells and 2,162 springs serve a combined estimated population of 6.37 million. In some areas, large storage tanks are arranged to catch rainwater as it drains off the roofs. This water is then used as the domestic water supply. Presently, four cities, 800 municipalities, and not less than 1,000 barrios are in need of a water supply.

Lack of adequate water systems is not only a health hazard to the population, but also inhibits the expansion of existing industries and the establishment of new ones. Even where there are water systems, maintenance problems create a dangerous situation. An example is given for the Tondo district of Manila, a center for low-income rural migrants. There, most people have access to piped water, but because leaky pipes are rarely repaired, the water is sometimes contaminated, particularly when the pressure is low during the dry season and when there is heavy usage. The migrants do not appreciate the idea of maintenance, since in the rural areas it is not considered worthwhile to repair damaged buildings; they are simply replaced.*

The Four-Year Plan for FY 1971-1974 aims at expanding and rehabilitating existing systems and constructing new ones in areas of dense population. More springs and artesian wells will also be provided to those in remote areas. In Manila the proposed expansion of the waterworks system has not been completed on schedule, but work continues to expand and improve the service. Over the next four years new systems will be constructed in the provinces to serve an estimated additional 574,530, and existing systems will be improved to serve a combined population of 459,870. This means that approximately 1 million people will be served, a very small portion of the total population.

Artesian wells and springs will be dug and developed in areas that cannot be reached by waterworks systems. In certain cases they will also be used to supplement the existing waterworks systems. The average artesian well serves a community of 250; a spring serves 500. The Four-Year Plan proposes the digging of 2,363 wells and the development of 326 springs. An additional 5,166 existing wells and 265 springs will be repaired. With the completion of the plan, potable drinking water will be available for two million people in the rural areas.

* This concept of preventive maintenance is generally poorly developed, making it difficult to promote utilization of latrines, potable water, sanitation measures, preventive health programs, family planning, and industrial accident prevention, as well as ordinary industrial maintenance.

In 1960, people living in 45% of all dwelling units had no toilet facilities at all, whereas those living in 36% of the dwelling units used open pits. Sanitary facilities in urban areas, such as Manila, Cebu, and Iloilo, consist of pail or septic tank systems, surface and latrine privies, and modern central sewerage disposal systems. In 1963, 136,000 inhabitants of a population of 30,380,000, were served by sewerage systems with sewage treatment and 650,000 by sewerage systems without sewage treatment, a total of 2.6% of the population.

The Four-Year Plan includes a ten-year master plan for phased construction of a sewerage plant for Manila. The present system of the metropolitan area is obsolete and inadequate. A large portion of the city's sewerage is discharged untreated into Manila Bay, not far from existing port facilities and beaches. This poses a serious health hazard to those who swim and bathe in these areas. If raw fish and shellfish are commonly eaten in the Philippines, there is the additional danger from eating any food from the Manila Bay. Some of the sewage is discharged into creeks and river tributaries within the city. In areas not served by sewerage systems, partially treated sewage from septic tanks overflows into creeks through street gutters and storm drains. Sewage from industry is also not treated and presents a health hazard. Apparently, Manila has a good drainage system of underground canals, but it is often clogged with debris, causing at least one serious flood a year.

The Plan proposes that a flood control and a drainage program should be combined with the planned improvement of the sewerage system. In improving the sewerage system, the Four-Year Plan states: "A project suitable for external financing could easily be developed by the Bureau of Public Works in this field, provided political agreements could be reached among the mayors of the Greater Manila area." (This statement indicates that some of the problems of water supplies and sewerage systems are political in nature, at least in the Greater Manila area. For a more complete discussion, see the chapters, Economy, and Government.)

The Plan does not include provisions for rural sanitary facilities. Currently in the rural areas the ordinary type pit-privy is used; indiscriminate defecation is also common and helps perpetuate the cycle of parasitic infestation and water borne infections. Night soil is not widely used as fertilizer.

Solid Waste Disposal Systems

In the urban areas garbage is collected, but apparently not in all areas or with the same frequency. In parts of Manila, piles of refuse lie on the sidewalks, breeding flies and mosquitoes and attracting rodents. The rural migrants who are not familiar with urban living often throw rubbish into the streets, adding to the sanitation problem. Garbage is used as sanitary landfill in some areas. In others, open garbage dumps are accessible to all types of scavengers and flies. Regulations cover the operation of public markets. Because enforcement is difficult, however, the markets are often unsanitary.

There is no mention made of rural solid waste disposal system. In many areas near rivers and the sea, waste is thrown into the water to be carried away by currents or tides.

Housing

It has been said of the Philippines that it is time the government shifted its priorities from rice and roads to include "roof." Specifically, this refers to the immense problem of urban squatter and slum-dweller housing. Urban middle and upper class housing presents no particular health hazards. Rural housing does provide an unhealthy environment in some aspects, in addition to sanitation problems.

In the rural areas the typical house is made of bamboo and set off the ground on hardwood pilings to minimize the effects of flooding; the roof is thatched with nipa palm leaves. It is an airy, single-family house, easily built with available material, but not particularly durable. The thatched roofs provide harborage for insects and rodents.

of flies and other living insects which are also transmitters of disease. There are some regional variations of the traditional rural house. In the Batanes Islands north of Luzon, an area of frequent and severe storms, almost all dwellings are stone and tile. Houses of the Igorots, the unassimilated mountaineer groups in northern Luzon, have steeply pitched roofs and are often windowless to keep out the colder night air. As a result, they are poorly ventilated and smoky, which is at least a partial cause of the widespread eye infections in the area. Other groups build only temporary shelters, some live in houseboats, and still others build their houses on log rafts to enable the houses to float during the severe seasonal flooding.

The wealthier of the towns and cities usually live in Spanish-style homes which have lower stories of massive stone or cement and living areas above constructed of wood and tile. In the Manila area, those who are more westernized may live in ranch-style homes in the suburbs.

As mentioned above, the major housing problem is that of the urban squatter and slum-dweller populations. While the population of the Philippines is increasing at a rate of 3.2% per annum, the cities are growing at rates from 5.8% per annum and sometimes 10%. In these urban areas the squatter population is increasing at rates of 12-15%. In 1965 the slum and squatter population of Greater Manila was 15% of the total population. It is estimated that it will increase to 30% of the city's population by 1973. Squatter populations throughout all other cities range from 10% of the city's population in Iligan, 25% in Baguio, and 45% in Butuan, Marawi, and Cotabato. Squatting and slum-dwelling are large problems for these and other cities.

Dr. Aprodicia Laquian, in his book on Metropolitan Manila, Slums are for People, makes the distinction between squatting and slum-dwelling. "Squatting is primarily a legal concept and involves the occupancy of a piece of land or building without the permission of the owner. As a violation of property rights, it is punishable under our laws. Slum-dwelling, on the other hand, is more of a socioeconomic concept. It is living in homes that are so dilapidated and congested that the condition poses a health, fire, vice and crime hazard not only to those who live in the slums, but to the whole urban community as well."

Squatters and slum-dwellers have many similar living conditions--overcrowded situations with inadequate water supplies and little in the way of sanitation facilities. Extensive and costly fires usually originate from slum and squatter areas, posing severe hardships and loss of life. The increased incidence of respiratory diseases and gastro-intestinal diseases is closely linked to the living conditions of these areas. Important characteristics of squatters and slum-dwellers in Greater Manila are described by Dr. Laquian. It can be assumed that many of these characteristics are typical of the squatter and slum-dweller populations of other urban areas in the Philippines. About 51.3% of squatter and slum families earn less than P150 a month, and about 14.8% claim to have no income or intermittent income. The average size of the household of squatters and slum-dwellers is between five and six members. This would indicate that the average squatter and slum-dweller family has only three or four children, a relatively low number compared to other low-income families and considering the high growth rate of the Philippines. It is possible that most families have more than three or four children, but due to the high infant mortality each family loses one child or more.

The degree of dependency is high, with 70% of household members below 18 years of age. About 32% of dependent members are below school age, while 11% of those of school age are not attending school. More than 30% of houses in squatter and slum areas have more than one family residing in them. Home ownership, however, is high, with 67% of families owning their houses and only about 26% renting, while some are rent free. Home ownership may not necessarily mean legal possession of the building, as it does in the United States. The term may refer to squatters who have built their homes with materials they purchased or found, and thus, they "own" their homes.

Utilities are greatly lacking, with water and roads being the most serious problems, followed closely by police and fire-fighting facilities. Barely a quarter of the households have toilets, and garbage collection is almost non-existent. Only electricity is adequately

provided, with about 70% of households using electric lights and 42% using radios.

Within the squatter and slum-dweller communities there is a high degree of organization, which may be surprising since almost all of the residents have recently migrated to the urban areas from rural areas. They come to the cities to improve their means of livelihood, and they occupy these areas because they are close to their jobs. Any government or other agency that is concerned about the conditions in the squatter and slum-dweller areas should be aware of the degree of organization of the community, and must realize that the people live where they do for specific reasons.

Pollution

Air Pollution: The National Water and Air Pollution Control Commission reports that the concentration of carbon monoxide in nine days during March 1971 exceeded the safe level in a plaza of Manila. High levels of dangerous gas and particle content in the air in cities aggravate respiratory illnesses, which are more prevalent in urban areas. (Pneumonia, tuberculosis and other respiratory diseases killed 55,240 Filipinos in 1969, 22% of the total number who died that year.) Dust and sulphur dioxide pollutants from fuel oil used in industries present a hazard not only to human beings but also to crops.

Water Pollution: The four rivers of Greater Manila are either dead or dying. Pollution of rivers and coastal waters has destroyed the livelihoods of thousands of Filipinos and threatens those of other thousands. The destruction of fish by polluted water destroys a source of badly needed protein, and the continued pollution of water supplies increases the incidence of water-borne diseases such as typhoid and gastro-enteritis. The extent of damage done by chemical by-products of industry has not been measured.

Land Pollution: Pesticides, herbicides, and waste products from industry cause increasing pollution. DDT levels are so high in tobacco leaves grown in the Philippines that foreign buyers have refused to buy them. DDT is used not only as a pesticide for crop protection but also in the malaria eradication programs.

EDUCATION

Both the government and the Philippine people stress the importance of education. One-fourth to one-third of the government's annual expenditure is in the category of education, one of the highest proportions spent on education in East Asia. The Constitution instructed the government to establish a complete system of public education providing a minimum of free primary instruction and citizenship training for adult citizens.

The Department of Education:

The Secretary of Education is a cabinet member and chairs all the boards of trustees of public colleges and universities. The Department of Education consists of the Bureau of Public Schools, the Bureau of Vocational Education, the Bureau of Private Schools, and an Office of National Colleges and Universities. In 1956 Congress created the Board of National Education to formulate educational policy. The Department maintains four cultural agencies: the Institute of National Language, the National Museum, the National Historical Commission, and the National Library.

Universal Education:

Elementary education has been compulsory by act of Congress since 1953. Lack of buildings, teachers, and materials, however, has prevented the implementation of universal education. Very few schools offer a seventh grade or kindergarten, and education in most barrios is available only through grade four.

Language Problem:

About 40% of the population can speak English and 44%, Tagalog. There are fifty or more mutually unintelligible languages in the Philippines, and eight major dialects have persisted since the Spanish period, gradually absorbing smaller dialects. The leveling in cultural differences during the Spanish period did not occur in language differences, partly since the Spanish religious groups learned and used the local dialects in their administration and teaching. The Americans, on the contrary, imposed the use of English in the schools and English is used as the language of instruction beginning with grade three. In some private schools, English is used from the first grade. The use of English has been a source of controversy, with some arguing for the use of local language, delayed introduction of English as a second language, or the need for the national language (Pilipino).

Growth:

The logistical problem of merely providing facilities, much less quality education, is staggering. There are now approximately 32,635 educational institutions, public and private, throughout the Philippines. A four-year building program ending June 30, 1970 has accounted for the construction of 97,815 classrooms at the primary level. The government is attempting to provide for the growth of enrollment as well as for the improvement of existing facilities. About 50% of the population is under the age of fifteen. There were 7,713,799 students in 1970-71 and more than 500,000 new students are added annually to the primary level alone. In 1968, 65% of the 5-14 age group and 35% of the 15-19 age group were in school; a total of approximately 57% enrolled in primary and secondary schools. Textbook needs for 1970-71, including backlogs from previous years, is a staggering 60,000,000 copies. If the government decides to change the language of instruction from English to Pilipino, requirements will increase accordingly.

Teachers:

The overall teacher/student ratio is 1:31, and a surplus of teachers exists. The teacher/student ratio in 1968 was better for secondary schools, 1:22, in contrast to 1:38 for elementary schools. In-service education has helped to upgrade the quality of teaching, but the time and funds for the travel of supervisors is limited. There has been rapid progress away from rote learning, inspired partly by the community schools concept for relevant, project-oriented education.

Auxiliary Service

There are many auxiliary services provided by the school system, such as guidance and counseling, health programs, school feeding, and applied nutrition. More than half of the schools have health clinics and well over half of the schools have full or part-time guidance counselors. There is also a national network of educational broadcasts which provides radio lessons for approximately 47,800 listening classes with 21,407 radio sets. A program of instructional television is broadcast in the Manila area. Audio-visual materials are available through various universities. There have been classes in vocational training and evening classes for out-of-school youths in some cities. Outside of the formal school system, the Department of Education is responsible for 425 libraries. The government also supports educational research and evaluation, textbook production, youth affairs, state scholarships, college entrance examination, and library programs.

Problems in the Seventies

The Secretary of Education, Juan L. Manuel, has named some of the major problems of the schools in the seventies. The very successes of the school system give rise to fast increasing aspirations and expectations, which lead to demands for reform, which lead to the frustration of reorganizing an entire school system that is desperately trying to keep up with enrollment growth within severe financial limitations.

One of the loudest calls for reform insists that the school system anticipate and fill the manpower needs of a developing society. One of the obvious areas of emphasis would naturally be improved vocational/technical education, which is unfortunately relatively more expensive than quality education in other fields.

Another insistent voice is that of the students themselves. The first mass demonstration by student groups was held in January, 1970, in front of the Legislative Building, and pickets, sit-ins, teach-ins, marches, and some violence have occurred since that time. The students' indictment extends, however, not only to the educational system but also to society in general.

Financial limitations are intimately involved with all the problems of the school system. The appropriation for education has gone up every year. The cost of living, however, has been increasing at a rate faster than the increase in expenditures.

Enrollment

More than one-fourth of the total population of 38 million attend school. In 1971 the enrollment was approximately 7,338,970 at the primary level, 2,163,820 in the secondary level, and 795,310 at the university level, for a total of 10,298,100. Distribution between public and private schools was 96% and 4% at the elementary level, 36% and 64% at the secondary level and 8% and 92% at the university level, respectively.

Dropout Rate

The dropout rate continues to be a problem although the rate tends to be decreasing. Only 37% of those students enrolled in first grade in 1953-54 graduated from the sixth grade in 1959. Only 55% of those students enrolled in first grade during 1961-62 graduated from the sixth grade in 1967. The average school attainment is completion of grade five, which is considered equivalent to third grade in developed countries. This is three grades less than what is considered necessary for functional literacy, although some authorities believe even more education is needed to attain that goal. Literacy is estimated at about 80% by the Department of Education.

Primary Level

The first level of education is 6 years, 4 years primary and 2 years intermediate, and is provided free by the national government. First graders may be enrolled at the age of 7, 8, or 9.

Secondary Level

There are too few secondary schools, and the public secondary schools are the weakest link in the school system, due largely to lack of financing. There were no public high schools in 11 provinces and 24 chartered cities in 1964-1965. In 1964-65 only about 30% of the age group 13-16 were in school; only 10% were in public high schools. The secondary schools are financed by student fees and funds from the provinces and/or the cities. Vocational schools, however, are funded by the national government. A recent development has been the establishment of barrio high schools in isolated areas. These schools draw administrative support from an established "mother school" whose principal oversees the educational program.

Higher Education

Higher education is overwhelmingly private education with 90% of the students enrolled in private schools. Enrollment data in 1967-68 show that the field of education is the one preferred by university students. Other popular fields are commerce, liberal arts, engineering, and technology. As noted in the Four-Year Development Plan, fishery and forestry are the least popular fields of specialization, while fishery is a relatively untapped source of potential riches, both economic and nutritional, and forestry is an established, but not fully exploited industry. Commerce and technology, however, have attracted encouraging numbers of students. Student preferences continue to center on the prestigious professions: education, law, medicine, and government service, regardless of the surpluses in these fields in the job market. Manual labor carries the stigma of low status.

Impact of Vocational Schools

Vocational schools should be a source of skilled manpower for national development. This fact has been recognized in the creation of a separate Bureau of Vocational Education and by substantial increases in funds. Between 1958-59 and 1964-65 enrollment increased 56%; schools, 83%; and teachers, 42%. Some of this increase, however, can be traced to the superficial conversion of a general high school, locally funded, to a vocational school, under national funding.

The impact of these schools has been disappointing. One problem is the immaturity of students. Most students enter at the age of 13 or 14, at an age when many skills are beyond their physical and intellectual capacity. Another problem is the large number of schools. The quality of the instruction and equipment is watered down by a lack of adequate funding and staffing. The vocational teacher has often learned theory from books without gaining practical skill and necessary occupational experience. The curriculum is not job oriented. The school day is quite long and arduous since the vocational curriculum is merely added to the general curriculum.

Impact of Barrio High Schools

The barrio high schools were started on an experimental basis during the 1964-65 school year. The schools are public, non-profit, self-supporting institutions which provide secondary education in the barrios, where 75% of the youth of high school age live. They make use of existing elementary schools and personnel when these schools are not being used.

The number of schools has grown rapidly from four in 1964-65 to 1,500 in 1969-70, including 200 which have four complete classes in operation and enroll 20,000 students. There remain, however, 29,500 barrios without public secondary schools.

Barrio high schools are an economical way for local people to support secondary education without waiting for the national government to provide additional funds. Funds for the support of barrio schools come mainly from tuition fees (averaging P80-P100 a year), voluntary contributions from parents and private citizens, and an amount equalling about 5% of the school budget from the real estate tax. Often the students will earn a considerable amount of money during the school year as a result of various projects.

The founder of the barrio high school idea stresses that basic academic education should

not be radically different for the barrio youth than for the youth in cities and pobaciones, although barrio teachers might be forced to exploit the resources of the community in teaching certain concepts because of the lack of textbooks. The barrio high schools must continue to correct vital deficiencies so that the opportunity for equal education is gradually extended. The barrio high school, however, serves at this time as the only chance for many with verbal literacy to achieve functional literacy, greater practical skills, and possibly higher education.

It is generally believed that the barrio high schools are far inferior to their mother high schools. In achievement tests administered in the basic subjects in 1966-67, however, in ten provinces barrio high schools scored generally higher than the mother schools; in ten provinces mother schools scored generally higher than barrio schools; and in five provinces the two kinds of schools scored generally alike. The barrio schools are short on equipment, facilities, and textbooks; they have performed admirably in spite of these deficiencies.

The Concept of the "Community School"

The concept of the "community school," although not as successful as it has been proclaimed by many Philippine and foreign advocates, remains the most innovative and promising development in education in the Philippines. The concept of the community school was officially adopted and implemented throughout the Philippine system in 1949. The traditional pattern of education was felt to be grossly inadequate to the job of rebuilding the country after independence, as it has proved itself inadequate to change the life of the average Filipino.

The community school is intended to provide education for both elementary school children and adults using community resources and gearing the curriculum to the needs of the community. The school would provide and encourage the leadership necessary to organize the community toward self-improvement. Hopefully, the adults and children would gain skill in using democratic processes and would participate together in community projects.

Since 1949, major emphasis in education policy has been on the function of the school in improving community life. The school is seen as the focal point of community life, an agent of change. No country has shifted so rapidly and completely from purely academic education to project-oriented education for the sake of community development. Foreign educators have come to the Philippines to study and, for the most part, praise the community school idea. Criticism has centered on the arguments that community development is too big a job to be given to the schools and that community projects distract the schools from their primary function of developing academic competence.

The charge that the community school, in its involvement with community development, is distracted from providing basic education is a serious one. The severe language learning burden plus the fact that many students attend primary schools on a half-day basis (and that nearly half do not finish the sixth grade) all combine to hinder the achievement of even minimal academic standards.

Many teachers complain of the difficulty of teaching a functional curriculum, one that is geared to the needs of the child in the community, and feel that such a curriculum is an added burden to regular classroom teaching. Some teachers are skilled in relating academic skills and concepts to the particular community setting. Many teachers, however, do not basically understand the needs and resources of the community. (Most are not native to the barrio.) There is a tendency to attempt easily accomplished, conspicuous projects without attempting the more difficult goal of changing community attitudes. Often community projects are done more for the approval of the teacher than for substantial progress in mobilizing community resources to solve problems. The academic classroom exercise is merely replaced by a superficial exercise in the community. Perhaps these problems could be overcome by better instruction of teachers and administrators in the concept and techniques of community education. Much more needs to be done in the way of in-service education.

Manpower Development - Four-Year Plan

One of the major concerns of the Four-Year Development Plan is the ability of the

educational system to supply the manpower needs for national development. The recommendations of Presidential Commission to Survey Philippine Education (1969-1970) have become the basis for project proposals covering priority categories for immediate implementation. The Commission proposed an eleven-year rather than ten-year system, a national network of comprehensive secondary schools with both academic and vocational/technical programs offered in the fourth and fifth years, a core curriculum for the first three years of all secondary schools, post-secondary vocational/technical education both in special institutes offering a variety of courses for training skilled technicians and in colleges and universities providing regular degree programs in various fields of engineering and technology. Other recommendations included manpower training and placement programs for those unable to gain admission to post-secondary institutions and that the national government take greater responsibility for financing post-secondary education. In response to these priorities, feasibility studies on a number of major projects have been organized in cooperation with foreign experts and with the expectation of external financing. These projects include the establishment of 5 technical institutes, establishment of 6-8 general high schools, upgrading of the Philippine College of Arts and Trades and of at least six regional trade schools, establishment of six pre-employment centers (manpower training with industrial resources), upgrading of a few agricultural institutions, strengthening science education centers, and funding research in instructional television.

Conclusions

Some implications of educational achievement for the health status of the Philippine population are the following:

1. In the absence of a strong national manpower policy, much educational time and money are wasted preparing students for professions where surpluses already exist. Lost training time and resources, lost skills and manpower through the "brain drain," and opportunity costs (lost chances to do something better instead) are the results.
2. To educate a people with attitudes and skills necessary for social and economic change which affect health conditions, more than the small percentage of those of high school age must complete high school. Barrio high schools are a partial answer particularly since these are locally supported and do not need to wait for funds or the workings of the national bureaucracy. It is unfortunate that this local effort must defend itself against critics who are quick to point out deficiencies without acknowledging the vital role these schools play, not only for education but especially for community participation and initiative.
3. Student activists, advocating basic reforms, could be a factor in the emergence of a modern voter demanding changes in the social and economic environment of the masses.
4. Schools are not themselves models of adequate, much less modern, sanitation, physical facilities, and health practices. Many schools are lacking in the facilities they intend to promote in the community at large.

These basic underlying concepts of health and disease are sometimes neglected in favor of teaching practices which are not feasible.

Schools provide the opportunity for practical and effective education in nutrition, basic hygiene, health, and disease.

- 5a. Much of the precious time devoted to formal education is lost due to the illness and death of school-age children. Absenteeism, particularly in view of the high dropout rate, is a major problem in implementing a successful curriculum. Listlessness due to common chronic illness is another problem in the classroom. Approximately 8% of all deaths are in the age range 5-14 years; approximately 40% of these deaths are preventable. Morbidity data provided some indication of the magnitude of illness in the school-age population. Approximately 20-40% of the national morbidity from preventable illness is found in this age group.

- b. Malnutrition is implicated in the development of mental retardation. Common child-

hood illnesses require an additional intake of calories beyond that of a subsistence diet. Chronic intestinal disease, parasitism, and malaria also cause malabsorption of food.

- c. The success of the health sector in lowering the birth rate through promising family planning programs could have a marked effect on improving the quality of the educational system. Expansion of educational facilities could be slowed and the educational system (and health facilities) could more easily serve fewer children entering the schools.
- d. Health programs for school children under the Bureau of Public Schools are grossly inadequate. Besides insufficient medical personnel, uneven distribution of existing personnel is a problem.

It appears that although the RHU's have filled in for some of the deficiencies in services offered by the school system, the understaffed RHU's would not eagerly embrace this extra duty.

GOVERNMENT

Constitution

The Republic of the Philippines functions under a democratic constitution drawn up in 1935. The Constitution provides for a strong executive branch, a bicameral legislature and an independent judiciary.

Political Parties - The Two-Party System

Political parties are peculiarly fluid in this pluralistic society. Party switching even at the presidential level carries little stigma. The ideal is to side with the winner to establish claims on the spoils. Party platforms of both major parties reflect the whole spectrum of the constituency rather than the interests of selected interest groups or a particular ideology. Party membership represents a coalition of diverse points of view rather than a single philosophy.

The real power is at the regional level among regional political leaders. Their usefulness lies in their ability to deliver votes within their region for a particular national candidate. In return, the regional leader and his followers expect patronage and public works projects that favor their region. They do not expect implementation of any national plan for the rational development of the economy at the immediate sacrifice of the region.

Centralization of Power

The primary difference between this Constitution and other democratic constitutional models is the marked tendency toward centralization of power, particularly in the presidency. It was felt that unification of diverse islands could be better accomplished through a strong federal system. The Convention also believed that the emergence of a dictatorship could be avoided by providing strong executive power, with checks by a congress, judiciary, and a free press. Local governments are elected but have tended to remain subordinated to central authority.

As commander in chief of the armed forces, the President uses these forces to prevent violence, invasion, insurrection or rebellion. In the interests of public safety, the President has the power to suspend the writ of habeas corpus or place the Philippines under martial law. The President also directly controls the national police or constabulary.

Election of President and Vice-President

The President and Vice President are elected separately by direct vote for a term of four years each. It is possible that the Vice President may be of the opposition party to the President. The President and Vice President may serve for only eight consecutive years.

Executive Branch

There are 12 executive departments: Finance, Justice, Agriculture and Natural Resources, Commerce and Industry, Public Works and Communications, Education, Labor, Health, Social Welfare, National Defense, Foreign Affairs, and General Services. In addition, there are about 30 different commissions, boards, authorities, services, committees, and councils directly under the President, further enhancing his role.

Presidential Appointments

The President appoints a large number of officials, running the gamut from the justices of the courts, the director of the Central Bank of the Philippines, municipal treasurers, law clerks, and agricultural extension workers. All appointments are subject to the approval of the Commission on Appointments, a joint Senate-House commission.

Budget Decisions

The President has broad discretionary authority in adopting a budget. Congress cannot

increase the appropriations recommended by the President for governmental operations, except those for the Congress and the judiciary. The President may also veto specific items in revenue and tariff bills without vetoing the entire bill.

The public works budget is not included in the executive budget but is initiated by Congress primarily to meet constituent demands. Since the President controls the allocations of funds for projects initiated by Congress, however, he can influence the individual members of Congress to support his programs. The President also has a large contingency fund for emergency allocations as he determines the need. Despite these apparent powers, no president before President Marcos had succeeded in being reelected. The disillusionment of the electorate indicates a lack of confidence in the economic leadership of government and is linked to the recurring campaign issue of "graft and corruption."

Legislative Branch

The Senate has 24 at large members who serve 6-year terms. One-third of the membership is elected every 2 years. Congressmen of the House of Representatives are elected for a 4-year term and all face reelection at the same time. In 1968 there were 104 members; the Constitution provides for a 120-seat maximum.

Each session of Congress is limited to 100 days, although the President can call special sessions, particularly to get bills through he considers essential. The lower house initiates all bills pertaining to fiscal matters and many miscellaneous local and private bills dealing with matters ranging from boundary changes between districts to the renaming of a barrio. The Senate reviews actions taken by the House and may propose amendments. Differences are adjusted in inter-House negotiations. Most bills of major importance originate in the executive branches, but they must be sponsored by a member of the House when introduced for debate and passage.

Judiciary Branch

The judiciary branch blends Spanish and American influences. One Spanish influence is evident in the absence of jury trials. Since the President appoints the court justices, the central government has strong control over the system of justice. The Supreme Court holds unquestioned respect. Below the Supreme Courts are the statutory courts: courts of appeals; courts of first instance; courts of industrial relations; municipal courts; and city courts.

Civil Service System

A civil service system is provided for in all branches of the government under the Constitution. As in other areas of government, however, legal enforcement of fair employment practices often gives way before personal rather than legalistic considerations. The importance of personal ties in hiring practices again demonstrates how the political and economic systems contain traditional elements of the social system. Extended family ties and personal alliances predominate in the operation of formal democratic institutions. (See Economy chapter.) The Civil Service Act of 1959 strengthened the Office of the Director of the Civil Service to help enforce improved personnel practices.

Political Participation

Political participation is high in the Philippines; about 60% of the adult population vote. Campaigns are quite intensive as was indicated in a Rand Corporation poll before the 1965 election. Over 30% of the respondents had personally seen or heard one of the Presidential candidates and nearly 45% had seen or heard a Senatorial candidate. In 1963 more than 65% claimed they attended political rallies.

Province

The jurisdiction of provincial government is defined by the legislature and not by the Constitution. Provinces and smaller units are created by legislative act, and boundaries can be changed and new units created by Congress.

Provinces are of two kinds, regular and special. The regular province, headed by an elected Governor, is mainly inhabited by Christian Filipinos. The special province, whose Governor is appointed by the President, is made up of non-Christians. The Governor chairs a provincial board of two members. Most of the national departments have representatives in the provinces who bypass the Governor and curtail his power. Education, health, agriculture, finance, and public works, for example, are all controlled nationally. Like other regional leaders, the Governor is expected to deliver votes for a national candidate in return for patronage allocations to the province.

Municipality

The next political unit below the province is the municipality, which can be compared roughly to the American county. The chief executive, known as the mayor, is elected for a four-year term, as is the Governor. Municipal government controls a locally appointed police force and has authority over the public market. Rental of market stalls provides a large amount of revenue. The municipality has certain tax powers for operating the government and sometimes collects money for tuitions paid by students in secondary schools in the municipal capital, or poblacion. It has been estimated that 40 to 60% of municipal expenses are paid for out of national allotments.

Barrio

The barrio is the smallest administrative unit, but it is a geographical area not necessarily a single village. About five to ten barrios make up a municipality. In the early sixties there were 20,000 barrios and 1,200-1,300 municipalities. The barrio is usually made up of a number of smaller divisions or sitios, hamlets of from ten to a hundred houses.

Traditionally, officials in the barrio had been appointed by provincial authority subject to national approval. Two bills were passed in the late 1950's to increase local autonomy. In 1960 the Barrio Autonomy Act recognized the barrios as legal entities with the right to elect their councils and barrio lieutenants, to impose limited taxes, and enact some local laws. A barrio assembly was instituted, made up of qualified voters who meet once a year to hear reports from the Councils. Self-help projects have increased and the status of barrio officials has improved with their greater authority.

Chartered Municipality

The chartered municipalities (49 in 1966) are independent from provincial government. The legislature issues the charters and defines the structure of government according to the individual characteristics of these cities.

ECONOMY

Background

After a long period of economic domination by Spain and the U.S., the Philippines made a respectable, if not a spectacular, recovery from a rather abrupt unmooring by the United States and from the devastation following World War II. The ten-year transitional period specified in the Philippine Independence Act ended July 4, 1946, a time of economic and social chaos in the Philippines. By 1948, however, rehabilitation measures had effected a prewar level of output.

Rehabilitation included extremely heavy investments, including \$1.4 billion in U.S. participation from 1946 to 1949. A huge trade deficit was sustained by U.S. government disbursements and by the consumption of Philippine foreign exchange reserves. Rapid progress was accompanied by a series of budgetary and balance of payments crises in an environment of widespread social breakdown; the most threatening aspect was the Huk movement. This movement, basically over the issue of land reform, has confronted the government with a continual problem during the two and one half decades since the war.

In 1950, the Philippine government imposed direct controls over imports and sales of foreign exchange, reducing imports to three-fifths of the average volume in 1948-1949. New taxation, one of the recommendations for economic reform by the U.S. Bell Mission, nearly doubled revenues. The balance of payments and fiscal problems were thereby relieved, although social dissension continued unabated and problems (caused in part by institutional breakdown following the Japanese occupation) remained critical. Military means were finally used to put down the Huk rebellion during the fifties.

From 1948 to 1966 national income increased by at least 150%, whereas population increased from 19.1 million to 33.5 million, or 75%. However, because of inflation, per capita income at 1955 prices increased only 50% and was unevenly distributed. The contribution of agriculture to the real national income declined from 40.3% in 1948 to 32.1% in 1966. In 1966, approximately two-thirds of the labor force contributed only one-third of the national income. Per capita income in the agriculture and forestry sectors is only about one-half the national average. As the percentage contribution of agriculture declined, that of manufacturing more than doubled, with money income from the sector increasing by 500%. Per capita income in the manufacturing sector is about three times the average income.

The progress in this period occurred with relatively stable prices. Inflation following the Japanese occupation was quickly brought under control. Conservative fiscal and monetary policies prevailed through the fifties, although prices began to rise modestly in 1957.

In 1954, President Magsaysay took office and abandoned the conservative fiscal policies of past administrations by persuading Congress to authorize deficit spending. The role of the public sector, however, remained relatively stable. Deficit spending helped the society in the short run until successive deficit budgets caused fiscal problems. Magsaysay also attempted to institute land reform policies, which were bogged down in a legislative and administrative morass. He was successful, however, in pushing through policies favorable to stepped-up Filipinization. This policy had broad public support since the economy was monopolized by aliens.

One of the strongest of policies favoring Filipinization was the "windfall" system, an indirect form of taxation on the export sector. Those persons (generally aliens) who came into possession of foreign exchange through export of goods were required by law to turn it over to a control authority at two pesos to the dollar (half the uninflated value). The control authority would then distribute the foreign exchange among Filipino entrepreneurs who paid the official rate of two pesos to the dollar. Since foreign exchange was in short supply, the demand was much greater than the supply, and much importing had to be drastically curtailed. Imported goods were, therefore, in short supply and had inflated prices; the favored Filipinos (those who had the foreign exchange to import goods) were in an enviable position. A strong incentive existed for Filipinos to enter a no-risk business

and gain entrepreneurial skills in a protected environment. The system continued until illegal evasions led to its dismantling in a wave of scandal beginning in 1959.

The peso was finally devalued in 1962, eventually stabilizing at 3.9 pesos to the dollar nearly twice the old rate. Overnight, the peso prices of export commodities doubled, and the crutch of peso overvaluation was pulled out from under the new breed of Filipino entrepreneur. The manufacturing and commercial sectors were no longer favored by the windfall system. Exports took a sudden spurt upward, counteracting the balance of payments disequilibrium. Surprisingly, virtually no Filipino firms went bankrupt, although economic growth was slowed during the first half of the sixties.

Fluctuations of the Economy

The series of balance of payments crises in the Philippine economy have been observed as alarmingly erratic, even pointing to social chaos and revolt. Yet indications are that the economy is growing steadily; that the people are basically satisfied with their government; that crime is a defined, isolated problem; that the Huk movement is basically controllable dissent (not widespread communist insurgency); and that unemployment does not spell stagnation, dissidence or imminent crisis.

The so-called fluctuations of the economy can be seen as part of a two-year cycle which has been mentioned, if not elaborated, by several Philippine sources. A study done by the Rand Corporation tabulates evidence of rapid growth and deficit spending during election years, followed by a slowdown of growth and tight fiscal policy during off years. This economic cycle can be seen as an adjunct to the political system and is tolerated by Philippine banking institutions which could attempt to counteract the fluctuation.

Economic Growth FY 1971

In FY 1971 the economy exceeded growth targets for the first year of the government's Four-Year Development Plan (6.5% instead of the projected 4.5%). Manufacturing and construction showed a good recovery after the devaluation slump in 1970. The agricultural sector, however, increased production by only 2.2% according to preliminary reports. (The target of the Plan was 6.25% annually.) Unfavorable growing conditions resulted in a shortfall in rice production, and predictions indicate an even greater deficit this year. The shortages in the agricultural sector accounted for sharp increases in the price of food and also affected foreign exchange earnings since agricultural products are the principal exports.

Meanwhile, the standard of living of the average Filipino is not improving and in some categories it is worsening. The unemployment rate reached 8.5% with an estimated under-employment rate of 12% in 1971. From 1957 to June 1967, money wages and salaries in selected industries increased by about 50%. Because of inflation, however, real wages in the Manila area in 1967 were only 87% of 1955 wages for unskilled laborers and 80% for skilled laborers. The average industrial wage rose 7.4% from 1970 to 1971. In 1971, however, the Philippines had one of the highest inflation rates among Asian members of the IMF. Consumer prices rose 23% compared to slightly over 20% in 1970. (The Plan projected a rise of only 7.5% in 1971 and 15% in 1970.) The price of food, especially rice, showed the greatest increase.

In 1957 the average annual income of the urban Filipino family was about P2,500; that of the rural Filipino family was about P1,000. The 4% that had incomes of P5,000 and over earned almost 25% of total family incomes. More than half of all families had an annual income of less than P1,000. Four-fifths of all Filipino families had less than P2,000 income.

International Financing

International financing for the Philippine development program is now being coordinated by a Consultative Group for the Philippines under the Chairmanship of the World Bank. One of the problems discussed at the group's first meeting in April is the serious and continuing debt service burden caused by the accumulation of short and medium-term obligations. The debt service ratio stood at about 30% at the end of 1970, with little change expected in 1971.

Problems involving international investment include the absorptive capacity of the public sector and its ability to produce adequate domestic funds for development projects. Selection and preparation of suitable projects for international financing, including feasibility studies, have been a problem for foreign investment.

Exports

Export earnings, mainly from sugar, coconut, and timber of the agricultural sector, play a traditional role in industrialization. Exports produced the foreign exchange requirements of the country and enabled industry to import necessary raw materials. Industry has concentrated in light consumer goods for domestic consumption and has not attained export capability. It is likely that agriculture will continue to provide the means for further industrial growth, and it is hoped that productivity will now increase as the shrinking land frontier precludes expansion in acreage.

Filipinization

Filipinization has been a dominant factor in the Philippine economy since independence. Foreigners dominated importing, exporting, retailing, marketing, and distribution of agricultural production. A series of restrictions imposed by the government have loosened foreign control.

Exchange and import controls, begun in 1949, enabled the government to favor Filipinos, and alien imports declined from 76% in 1948 to less than 30% in 1965. The Retail Trade Nationalization Law of 1954 provides that after a transition of ten years virtually no aliens would be permitted to engage in retailing. Gradually imposed direct controls have been removing alien middlemen from the marketing and distribution of agricultural commodities. Mining and export production have also undergone gradual Filipinization.

Americans receive special treatment because of post-colonial special agreements, the most important of which is due to lapse in 1974. Nonetheless, there has been discrimination against American enterprises. At the same time that further Filipinization was being discussed at the Constitutional Convention beginning in June, 1971, however, a major government study was being undertaken to help American firms legally continue in operation and to assess the role of foreign investment in economic development.

Free Enterprise - Philippine Style

The Philippine economic system outwardly resembles the American free enterprise system. This similarity of institutional structure is deceptive, however, since it cannot be assumed that the institutions work in the same way. The Philippine economic system has succeeded in harnessing traditional elements of the family and extended family social unit (which is basically conservative) to the needs of a developing capitalist society, which is dependent on individual risk taking and entrepreneurial skill. The institutions which have evolved have ingeniously worked to achieve modern economic growth beginning with, rather than throwing out, the given social structure.

During the transition period before independence, the government was chosen to step into the necessary entrepreneurial role in view of the reluctance and inexperience of the conservative Filipino family in the world of commerce. Public entrepreneurship was affected by nepotism and bureaucracy. Some way had to be found to coax Filipinos on the outside of the country's economic activity into becoming entrepreneurs. Developing skills for capitalism would have to contend with the strong social values favoring preservation of communal wealth and its dispersion through inheritance rather than its accumulation as venture capital for new initiatives.

The family system of obligation, protection, and reciprocity is translated easily into a political system of influence and security through patronage and personal pledges of mutual support. An overpowering incentive system of discretionary allocation, subsidies, liberal credit, and protectionist policies enticed the Filipino into a familiar environment. The new entrepreneur found he could use his skills as a politician to obtain foreign exchange, credit,

items of reparations, equipment, and other means of securing his position without having to worry about proving himself in the competitive marketplace. The government protected his profits, taxed the export sector to his advantage, reduced alien competitors, and allowed costs of imports and taxation to be absorbed by the consumer.

Other factors worked to produce a favorable economic environment. The increasing population moved into frontier land and kept up the productivity of the agricultural sector which fed the people and produced the main exports. Urbanization was sufficient to keep a cheap labor force at hand, and the Philippine devotion to education ensured a diversity of usable skills in the labor force.

Developing capitalism in the Philippines has followed the worst tradition of capitalist systems by exploiting the social environment for the protection of profits as the primary consideration. It is to be argued at this point whether continued subsidy of the Filipino entrepreneur is either necessary or desirable. Efficiency must one day be required and a shift in emphasis from blind support for Filipinization and policies of individual self-interest to the promotion of the general welfare in order to ensure a more equitable distribution of wealth. The public sector might conceivably shift its role at this point from one of manipulator and motivator to one of more direct participation in economic development, following the lead of other Asian nations.

The Public Sector

Factors causing the minimal and indirect role of the government in the economy are the weak middle class and a large, apathetic, and estranged peasantry. The various economic interest groups fear that a stronger government would redistribute income to the economically weaker and more numerous groups; these interest groups would lose the advantage they now have.

Four interest groups dominate the political scene: the agricultural aristocracy; the large and growing peasant class; the American-led and dominated "western minority;" and the autonomous, unassimilated Chinese community. Other economic groups emerge against this setting to influence the political process for their own ends.

The people, whose hopes for prosperity following independence had been encouraged by strong nationalist sentiment, were disillusioned by the initial performance of its new government. The interim Commonwealth Government in 1935 began to experiment with the establishment of government corporations to directly produce economic growth. The experiment was a failure, and in the middle fifties the remaining trading, manufacturing, and transportation corporations reverted to the private sector. The public sector has been kept purposely small with the private sector producing 90% of the country's output of goods and services.

Economic Planning

The Philippine government has failed in carrying out a succession of economic plans. Taxation and other means of mobilizing resources have remained modest in scope. Rates of saving and investments have been modest compared to those of other developing countries. Even the profusion of plans that did not materialize would not have extended the ambitions of the public sector to any great degree. None of the plans has even attempted to coordinate all available resources of the public sector and to focus on completing a rational sequence of projects. Planning has failed to push the economy beyond what it would have done without planning.

Foremost among the reasons for the failure of economic planning is apathy among both the people and the politicians toward implementing the plans. Both the Philippine people and their representatives tend to think in generalities about economic issues which they both rate as number one in priority. Even when pressed for specific courses of action to solve economic problems, 60% of the legislators in a Rand Corporation study sample (66 randomly selected from 126 total Congressmen and Senators) responded with general policies. Gross contradictions in philosophy apparently go unrecognized by these legislators. For example, while 75% of the legislators said that government should exert less or much less influence over the private sector, Congress unanimously passed a basic economic policy to encourage development of private industry through direct incentives, selective tariff, import credit,

and foreign exchange restrictions in order to further national priorities rather than the profits of the industries.

Other factors involved in the failure of economic planning include lack of sufficient revenue (Congress generally passes a budget roughly three times the size of available revenues), loss of capital through investments in failing private institutions, through unrepaid loans, and through dissipation in current rather than capital expenditures (particularly in salaries for civil servants). There is a lack of usable data on which to base decisions. Data are not presented in a form useful to a decision-maker, nor are they current. Inaccuracies because of old and aggregated data become the basis for many echoed cries of crisis and encourage the generalities in which supposed crises are described.

The government has had little success in allocating public funds for developing priority activities such as land colonization, use of fertilizers, and planting of certain crops. One of the favorite devices of the government to provide capital investment has been the revolving fund, which is dependent upon the repayment of initial loans to finance future lending. This lending system has suffered from the lackadaisical attitude of the Filipino borrower towards paying back the government. The Agricultural Credit and Cooperative Financing Administration, Filipino Retailers Fund, and various other special revolving funds ground to a halt when funds were exhausted and the loans uncollectable.

In short, repeated experience has taught the Filipino not to trust the government with additional funds which would merely disappear into the bureaucracy, eaten up by salaries for civil servants. For example, government expenditures increased by 118% from FY 1957-1958 to FY 1965-1966, but investment by the government accounted for only 3% of this increase, and government investment actually decreased to 1.7% from 3.2% as a percentage of national income. Current expenditures, mainly for salaries, accounted for six-sevenths of all government expenditures for FY 1965-1966. The state of roads, railroads, airports and public buildings (particularly outside of the Manila area) further attest to the negligible amount of capital formation in the public sector.

The truth may be even worse than these figures indicate. Approximately one-third of the national investment is in the form of "pork" undesignated by any planning and at the discretion of individual Congressmen and Senators. A substantial additional amount has been lost in providing capital to public enterprises which have lapsed into insolvency, or has been dissipated in funding unrepaid loans from revolving funds. It is possible that actual productive investment may be less than one-half of the total figure, perhaps as little as 1% of the national income in the late sixties.

Labor Force

According to 1968 statistics the labor force totaled 13,529,000; 4,956,000 women and 8,573,000 men. There were approximately 1,022,000 unemployed, of which 571,000 were inexperienced unemployed. The labor force is exceptionally young, with persons over 55 accounting for less than 10% of the working population in 1960.

The distribution of employment among the sectors is as follows: in agriculture, fisheries, and forestry, about 55%; in manufacturing, 10-12%; in commerce, 10-12%; and in services, 10-12%. About 55% of the labor force is tied up in agrarian enterprise, yet they produce only about one-third of the gross domestic product. From 1958 to 1968 industrial output expanded about 80% and presently produces about 17% of the net domestic product and has the highest labor productivity of any sector. (Table 3)

Organized labor does not play a prominent role in the political or economic life of the country. In 1968 only one-third of the labor force was working for pay, the remaining two-thirds were either self-employed or unpaid family workers. The skilled labor force is concentrated mainly in Manila.

Collective bargaining, although encouraged by the government, is not aggressively pursued. Union leaders do not deal with management on the basis of equality. An atmosphere of paternalism on the part of employers encourages a sense of security among workers. Legislation establishing minimum wages and working conditions is more significant than collective bargaining.

Manpower Development

Annual requirements for architects, surveyors, technicians, draftsmen, and related workers are estimated at 25,000 to 40,000. Fewer than 10,000 persons a year enter these professions. In 1963 there was an estimated potential demand for 70,000 mechanics and metalworkers; 58,000 skilled construction workers; 180,000 carpenters and skilled woodworkers. During the same year there were fewer than 5,000 registered apprentices in these industries. A large proportion of skilled workers who were already employed needed to upgrade their skills.

The dropout rate for apprentices or first-year vocational school students is about 50%. Between 1960 and 1964 the total number of vocational school graduates was 28,320. Teachers and supervisors are in very short supply. Employers express disappointment at the level of skill attained after these programs.

In 1968 the government introduced an experimental and successful skill training program. The program was expanded by the enactment of the National Manpower and Youth Development Act, establishing the National Manpower and Youth Council in the Office of the President. The Council is responsible for manpower planning and training of unemployed adults and out-of-school youth. The new law decentralizes administration by creating local tripartite manpower and youth committees in all cities and provinces.

The Manila National Manpower Skills Center was to have begun operations in September, 1971, with assistance from the United Nations (UNDP, ILO). This center will be a model for regional skills centers to be established under the Four-Year Development Plan. (See Education chapter.) Much remains to be done to upgrade vocational training at all levels.

Unemployment

Unemployment is approximately 6 to 8% of the labor force, and there is widespread underemployment. The Philippine people consider the unemployment rate a crisis, and it is widely reported by the press and government officials. When the aggregate data on employment is broken down (as was done by a Rand Corporation study, A Crisis of Ambiguity: Political and Economic Development in the Philippines), the problem appears much less critical.

The problem centers on the fact that about one-half million young people enter the labor force every year. Approximately 25% of college graduates are unemployed, and only about 17% can find jobs in their field. Data on employment, however, includes in the labor force those persons age ten and above. Nearly 75% of the unemployed are under 25 years of age. Over half are under twenty years of age, and 12% are under fifteen. One-half of those assigned to the large category "inexperienced unemployed" are not looking for jobs because they believe jobs do not exist, they have no sponsor, they have no one to approach, etc. Only 3% in this category are heads of households. Many in this category soon move out of this status by marrying or entering school, and many continue to be protected and provided for by the extended family system.

Underemployment is also considered a major problem but becomes less critical as aggregate data is broken down. The most seriously underemployed group is rural women working fewer than 20 hours per week. Most "underemployed" men, defined as those wanting more work, are already working 40 hours per week.

If unemployment and underemployment were considered critical problems, one might expect some public outcry which would be reflected in voting patterns. The Rand study finds that the unemployed are not agitating and that their voting preferences do not vary significantly from the rest of the Philippine population.

External Migration

Migration includes not only medical personnel and other professionals but also skilled and semiskilled workers. Filipino migrants residing in foreign countries in 1969 included

the following:

Asia and Africa	<u>38,000</u>
Skilled Workers (mostly in South Vietnam, Okinawa, Guam, Nigeria, Ethiopia)	12,000
Unskilled or semiskilled workers (Sabah, Malaysia)	26,000
United States	<u>125,323</u>
Permanent residents	94,325
Temporary residents	30,998
Canada	<u>15,000</u>

An increasing number of Filipinos are migrating to the United States since the liberalization of immigration laws in 1962 and 1965. The 1965 law gives preference to professionals and their dependents and abolishes the "national origins" quota system. This "brain drain" has been widely criticized in the Philippines. A Philippine government study in 1968 concluded, however, that the brain drain was not serious enough to have an adverse effect on the economic development program. Advantages of the migration include a solution to the problem of unemployment among professionals who are over-produced in the Philippines, advanced skills from those Filipinos who return, and a source of scarce foreign exchange from earnings of Filipinos employed by the U.S. in South Vietnam, Okinawa, and Guam. (According to a U.S.-Philippines remittance agreement, Filipinos employed in Vietnam were paid an amount for living expenses, and the balance was remitted to the Philippines. This amount reached approximately \$40 million in 1970 but will decline if the U.S. withdraws from Vietnam.)

Internal Migration

Migration of farmers from overcrowded areas to virgin lands has provided a way of absorbing the increase in rural population. A part of this migration has been at government expense (about US \$1,562.50 per farmer) and included the resettlement of 25,000 to 30,000 people by 1969. Because of the high cost of this resettlement, most colonization has come about under another government program which enabled settlers to acquire virgin land at their own expense, through homesteading, purchase, or lease. Over 173,000 deeds were issued from 1948 to 1957.

Little virgin land remains and pressure on all land is beginning to build. There have been clashes between Christian settlers and pagan and Muslim tribal groups, and landgrabbing of undeveloped land owned by absentee landowners has become a serious problem for law enforcement authorities. For the cities, the squatter population is rapidly increasing. (See chapter, Living Conditions)

Seasonal migration of agricultural workers, particularly in the sugar industry, provides a way for underemployed workers to earn additional income. It has been estimated that 10% of the sugarfield workers are migrants. Most migratory sugar workers return to their homes at the end of the harvest and work in farming or fishing.

Rural to urban migration has developed mainly because young workers come to the cities in search of better job opportunities, better education, and a better environment. Although detailed statistics are not available, one indication of the movement to urban areas is the decline in the percentage of the labor force employed in agriculture and related occupations, from 60.9% in 1960 to 56.4% in 1969. Indications of the growth of urban migration are apparent in statistics on the urban and rural labor force as shown on the next page.

Changes in Rural and Urban Labor Force
May 1965 to May 1969

Category	May 1965 (in millions)	May 1969* (in millions)	Percent Increase
<u>Population of Working Age (10 years and over)</u>			
Rural	13.6	15.2	11.8
Urban	6.4	8.0	21.9
<u>Labor Force</u>			
Rural	8.1	8.4	3.7
Urban	3.4	3.6	5.9
<u>Employed</u>			
Rural	7.5	8.0	6.7
Urban	3.0	3.3	10.0

*Preliminary

The urban migration has caused the growth of large squatter and slum populations in some urban areas. The Philippine press estimates that this population in Manila alone totals over 1 million persons, who reportedly try to feed, clothe, and house themselves on 90 centavoes (US \$0.14) a day per person. Efforts to resettle this population have been largely unsuccessful.

Conclusion

There are several implications of the economy that bear attention: First, the fact that a small portion of the population's work force (industrial workers) are gaining an increasingly large portion of the nation's income may increase the urban immigration that is already proving to be dysfunctional in many instances. In view of the migrant's poor education and training, he becomes a burden to industrialization rather than an asset. It is also obvious that urban systems as they now stand are ill-equipped to serve the influx from the rural areas. Closely associated with this phenomenon is the possibility that the consequent decrease in farm labor without the advent of adequate technology may reduce the already low and critical production of the agricultural sector. An off-shoot of these two phenomena may be that the relatively low economic development (compared to population increases) may undercut the rationale for further development. Likewise, obligations to, and/or failure to, repay foreign loans may slow development; especially since many projects are dependent upon the repayment of outstanding loans in order to secure more loans. It seems clear, finally, that the successful participation of the public sector in the economy may be necessary to generate economic development. This demand is made in light of the fact that the public sector has been traditionally small and relatively weak owing to a social structure that dictates the maintenance of a status quo that is unfavorable to long-range, efficient programs, but which, nevertheless, reflects the wishes of the people.

POPULATION

In 1970 the population of the Philippines is estimated at slightly more than 37 million. The average population growth ranges from 3.2 to 3.5 per cent; a yearly increase of 1 million Filipinos. If the current growth rate is maintained, the population of the Philippines will reach 110 million by the year 2000, almost tripling the population of 1970. These population estimates are based upon census data--the most recent from the census in 1960. The population growth rates are based upon these estimates, the number of registered live births, and registered deaths. There is no accurate data on the degree of under-registration of births and deaths, but a few surveys suggest under-registration of 10-30%. Although such under-registration complicates the data analysis and the accuracy of projections, it does not change the nature and magnitude of the population problem for the Philippines.

The country's population problem, however, is not one of number or density, but of growth. Since migration is inconsequential, population growth has been due to the surplus of births over deaths. The birth rates are estimated between 45 and 50 per thousand. There is reason to believe that this birth rate has been nearly constant over the past 70 years and that it has not declined to any important degree within recent years. The death rate is currently estimated at approximately 11 per thousand. Thus the rapid population growth can be credited to a declining death rate combined with a consistently high birth rate.

There are strong social and cultural influences which encourage families to have many children. Filipino wives who survive through their childbearing periods, (ages 15-44) produce an average of 6.8 children. Although it is not specified, it is assumed that this figure of 6.8 refers to the average number of live births each woman experiences.

In the Filipino culture, children are seen as gifts from God. Young couples usually have a child within the first year of marriage, and the childless couple is pitied. Most Filipino women marry before the age of twenty, and many add a child to their families every year or every other year.

The problems that population growth presents for the Philippines are many. The high birth rate experienced by the Philippines has created a young population; 46% are under age 15 years of age, while less than 3% are over 65. This young age structure results in a high dependency burden. Only half of the Philippine population is of working age (ages 15-64). On the average, therefore, one person of working age supports one dependent. This dependency ratio assumes that all those of working age are employed. Census figures for 1960 reveal that approximately 50% of those aged 15-64 were in the labor force and employed. Therefore, in the Philippines, one person who is working actually supports 1.5 additional persons. Other problems associated with the present population size and future growth are concerned with the shifting population distribution and the increasing burdens placed upon the labor market, schools, and food supplies.

The Philippines is slowly changing from a rural to an urban nation. Nearly one-seventh of the total population live in cities. From 1950 to 1960 urban growth proceeded at nearly twice the rate of total population growth. Cities with 50,000 to 100,000 inhabitants have grown the fastest, increasing from 2.2 percent of the total population in 1948 to 9.2 percent in 1960. This increasing concentration of people in cities has created grave problems. The squatter settlements and shanty towns around many cities are a direct consequence of heavy migration from the countryside. The pressures exerted by rural migrants for jobs, housing, potable water, sanitation, schools, and urban transportation have greatly compounded the country's development problems.

Even if the birth rate were to decline sharply in the near future, those who will attempt to join the labor force within the next 15 years already have been born. For every four persons who drop out of the labor force each year due to either death or retirement, fourteen youngsters are waiting to replace them. It is estimated that if the Philippine economy is to provide employment for all those who will be looking for jobs, the number of presently available jobs will have to be more than tripled by the year 2000.

In 1970 there were approximately 14 million persons of school age in the Philippines; by 1980 this group will equal 20 million. By 1980, the government hopes to enroll 98% of all seven-year-olds in the first grade. Should government efforts succeed, elementary school enrollment between 1968 and 1980 will increase by 40%, involving some 10 million people. For this purpose, approximately 10,000 new classrooms will have to be constructed annually and provided with teachers, equipment, and supplies. The government currently spends nearly 30% of the national budget on education.

At present food production and consumption also pose a major problem for the Philippines; the rapidly growing population will act to magnify this problem. In 1968 the University of the Philippines Population Institute estimated that in order to provide a balanced diet to the population by 1970, production of cereals would have to be increased 10-15%; fish and poultry, 30%; milk, 50%; beans and fats, 200%; and fruits and leafy vegetables, 400%. Dr. Carmen L. Intengan, Assistant Director of the Food and Nutrition Research Center, stated in 1967 that the attainment of self-sufficiency in food during the next decade would probably not be possible unless immediate steps are taken to produce increased amounts of food or reduce the population growth.

Currently in the Philippines there are over 30 separate organizations devoted to reducing the population growth rate. The United States Agency for International Development has been a major force in providing family planning assistance to the Philippine population. The Philippine government was willing to allow AID to sponsor private initiatives, but was itself initially unwilling to become involved. The task of providing family planning assistance was early identified as one more of management and cultural change than medical. USAID concentrated the program in the private sector, with competent private organizations providing assistance. For funds have been encouraged as conscious policies. Cost-per-family-planning acceptor recruited and serviced is the measure used to determine performance.

After several years of private activities in population, the government of the Philippines has become more involved. On February 19, 1969, President Ferdinand E. Marcos created the Commission on Population. The Commission concluded that a reduction in the high rate of population growth was in the vital interest of the nation and recommended the following policy elements to President Marcos:

- (1) to establish and adopt specific and quantitative population goals on the basis of reliable demographic data and expected demographic trends.
- (2) to promote the broadest understanding of the adverse effects on family life and national welfare of unlimited population growth and to provide the means by which couples can safely, effectively, and freely determine the proper size of their family.
- (3) to make family planning part of a broad educational program oriented toward the harmonious development of the individual personality, the family, and the nation.
- (4) to examine legal and administrative policies and measures affecting family size, and, if deemed essential, to revise such policies and measures to bring about a balance between family size and social and economic goals.
- (5) to continue efforts toward the further reduction of still high rates of morbidity and mortality (this recommendation is particularly significant, especially considering that 25% of all mortality is in infants under one year, most of whom are still in the first weeks of life. Forty-five percent of all mortality occurs in children under 5 years of age. In addition to the emotional and physical stress caused a family by the loss of a child there is an economic burden placed on that family and the society from the "wasted pregnancy.")
- (6) to adopt policies and establish programs guiding and regulating the flow of internal migration, and influencing spatial distribution in the interest of development progress.

- (7) to establish and maintain regular contact with international public and private organizations concerned with population problems.

On July 17, 1971, the Philippine Congress enacted a law establishing a "National Policy on Population." In addition to the Commission, the government created the Project Office for Maternal and Child Health, which is charged with the overall responsibility for administering a population program. Several private organizations and the University of the Philippines are also working in family planning.

For a predominantly Roman Catholic country, such legal actions on a national level are significant. President Marcos continues to stress family planning as a national priority and has ordered all government agencies to support the efforts of the Population Commission in every way possible.

Fiscal year 1971 was apparently a turning point in dealing with the population problem in the Philippines. In addition to the above-mentioned legislation, clinics providing family planning services increased from 300 in June 1970 to over 850 in June 1971, and plans call for a total of 1,300 by the end of 1971. Some of these clinics are integrated MCH centers and others provide only family planning assistance. Breakdown on the numbers of each are not available.

The goal of the population program is a sustained monthly rate of 50,000 acceptors by the end of 1972. If the rate of 50,000 acceptors per month can be reached by the end of 1972 and maintained for four years, the rate of population growth should fall from an estimated 3.2% at the beginning of 1970 to under 2.0% by the end of 1976.

USAID reported in August of 1971 that "there is every expectation that the 50,000 per month level will be reached ahead of schedule." This same report also states, "the chances of bringing the current annual population growth rate of about 3% to somewhat below 2% within the next five to seven years seem excellent." In July of 1971, USAID reported that by the end of FY 1971, annually 8% of fertile, married women were starting to use family planning. During FY 1972 it was expected that a rate of 10% would be reached, and that rate would be increased to 12% in FY 1973, with maintenance of that or a higher rate for several years. The plan is to reach a rate of 600,000 new acceptors annually. This compares with the June 1971 rate of almost 400,000 new acceptors per year, and 160,000 in June 1970. A January 1972 report from USAID states that more than 800,000 new acceptors were recruited by the end of 1971, thus exceeding expectations of the plan. Forty-two thousand more are expected to be added each month.

According to a June 1970 report from the Population Council some factors which are facilitating family planning efforts in the Philippines are the following:

- " (1) a growing number of research studies on fertility and family planning which show the readiness to accept and practice family limitation on the part of a sizable portion of the population.
- (2) the spread of knowledge on population matters through intensive efforts of mass media, visits of international experts in the field of medicine and the social sciences; seminars, conferences, and training programs for professionals and policy makers.
- (3) the large average size of the Filipino family and the unequal distribution of family income.
- (4) recent permissive action by the Government regarding family planning activities in its field units in the rural areas.
- (5) financial support for family planning activities from external assistance agencies.
- (6) increasing availability of family planning services throughout the country.

- (7) involvement of the management of industrial corporations and others whose interest it is to increase the efficiency of their employees by encouraging family planning.
- (8) positive action taken by the majority of Philippine medical schools to include population and family planning in the medical school curricula."

Factors that limit the development of family planning programs in the Philippines are:

- "(1) low level of education in the population.
- (2) organizations opposed to birth control.
- (3) early age at marriage and early and repeated childbearing.
- (4) lack of definite policy on sex education at elementary or secondary school levels.
- (5) lack of definite emphasis on the increasing density of population.
- (6) the absence of regular budgetary provisions for family planning services on a nationwide basis.
- (7) inadequate local appropriations to provide for training the people at the motivator and service levels; insufficient logistic support to supply the needed contraceptives, as well as the facilities to assure mobility of the workers and supplies.
- (8) lack of trained manpower--planners, administrators, and trainers who can provide leadership in planning and development of the program."

Support for the family planning program in the Philippines has come not only from the government and USAID, but from a variety of private and religious organizations, UNDP, WHO, the ILO, UNESCO, the World Bank, and private US foundations. The population problem as it is defined for the Philippines is not one of people being squeezed together by the overwhelming number of fellow citizens, but rather, it is one of limited services and commodities being available for the population in the present, with a promise for more severe limitations in the future if the population continues to grow at its present rate.

The Philippine population program described above is viewed by many to be one of the most promising programs in the world--promising in that it will enable the birth rate to decrease significantly. There is, however, disagreement on this point. In September of 1970 a report was prepared for the Agency for International Development by Alvin J. Harman of the Rand Corporation. In this report, Fertility and Economic Behavior of Families in the Philippines, Mr. Harman argues that the current population policy--that of educating and convincing married couples to practice some form of birth control--will not reduce the birth rate significantly for the Philippines. He also postulates that family planning information may lead to an increase in the birth rate. What he suggests is a combination of family planning education with other more indirect approaches including an increase in the educational level of women and a decrease in infant mortality.

Regarding education for women he says: "From the empirical results for example, one can see that the effect of increased female education not only directly reduces desired family size but also raises age at first marriage and labor force participation, which indirectly reduce family size still further." Infant mortality seems to affect the birth rate due to the "replacement" factor. Harman notes: "Additional births resulting from the replacement motivation appear to be sensitive not only to the family's own experience of the loss of a child (and especially to infant mortality), but also to its perceptions of the risk of child mortality in its community."

Evaluation of the Philippine population program so far is based on number of acceptors. Use-effectiveness figures are only estimates; the actual impact of the program remains unknown. Harman finds that "family sizes are not uniformly lower for families claiming to

practice birth control, nor has recent fertility been reduced by such use." In some cases it is felt that false knowledge of birth control methods, particularly the rhythm method, leads to more births--couples have the number of children they want rapidly, thinking they can prevent future births by using a method that is far from foolproof.

The point of this discussion is not to negate the value of the recent population programs in the Philippines. Education, distribution of contraceptives, and increasing awareness of the impact of many children on a family should help couples plan their families. The point is that these methods alone are not sufficient to dramatically reduce the rate of growth for the country. More research is needed on social factors to determine what direct and indirect approaches should be taken to lower the birth rate for the country.

HEALTH STATUS OF THE POPULATION

The diagnosis of the health situation of a community or population requires the availability of accurate and useful data which can be assembled into meaningful, action-oriented information. Frequently, these data are not available in the developing situation, and it is necessary to make judgements from limited data and data collected for different purposes. Although there are immense inaccuracies and difficulties in this process, the outcome can be information of sufficient accuracy to allow the rational development of national and international policies and programs. It is our hope that the following exploration of this data analysis will demonstrate the utility of our approach.

The derivation of a national health status from available mortality data and scant morbidity data can result in misplaced emphasis upon certain diseases and unawareness of significant problems not identified within the reporting system. The interpretation of mortality data carries with it certain significant problems:

- a. It provides only some indication of the underlying cause of death with no information about nonfatal or fatal, concurrent disease.
- b. Deaths reported are not necessarily certified by a physician. Such reports are questionable in part because of the deficiency of medical knowledge in diagnosis and because of the influence of medical fads among lay and paraprofessional personnel. These death certifications must generally be discounted.
- c. Most important, mortality data may provide little insight into the disease load carried by the live population.

In an advanced society, the limitations of these data are more important because of the increased role of the chronic and noncommunicable diseases. In the developing situation, where communicable diseases are the primary causes of death, mortality data are more useful because they accurately reflect the prevalent illnesses.

Many developing societies are in a state of transition in which the range of extremes is great. The rural areas are characterized by a traditional and agricultural social structure with poorly distributed facilities and few available services. This is especially true for health care and is accompanied by a high load of preventable disease.

By contrast, the urban areas are undergoing rapid transition with an influx of population, rapid urban growth, creation of urban slums, and outstripping of available resources: food, water, sewerage, sanitation, transportation, education, and employment. Health coverage, at least for the extreme moments of birth and death, is generally available although the quality of such coverage varies greatly. Modern sophisticated, comprehensive, and specialized care may exist within the cities although the availability of such services to large segments of these urban populations is frequently open to question.

It is because of the contrasts outlined above that it is generally necessary to deal separately with the health status of the rural and urban populations. Generally, there are four major considerations for the diagnosis of health in the community:

1. analysis of mortality data
2. analysis of morbidity data
3. analysis of disease-specific data, and
4. estimation of the coverage of the population

From the above four categories of data, the following judgements can be made:

1. Estimation of percent of population receiving regular health care

2. Estimation of percent of population receiving occasional health care
3. Estimation of percent of population receiving no health care
4. Definition of basic problems in health
5. Identification of potential intervention mechanisms
6. Identification of possible complicating factors (e.g. population growth)
7. Identification of the role of extra-sectoral factors

Mortality Data

Two sets of mortality data are used in this study: data published by the World Health Organization from 1965 and 1966, and more recent data published by the Department of Health, 1969. Although the WHO data are relatively old, they provide somewhat different insights into the health problems because of the way in which they have been organized. In addition, the patterns of death represented in both sets of data are remarkably consistent so that the variations that exist will not alter the conclusions that are drawn. In both sets of data, there is probably significant under-registration of births and deaths.

In one province, tests made in 1956 estimated 30% birth and 10% death underregistration. In 1961-62 a far more extensive survey indicated an underregistration of death by more than 27%. There is no estimate of the extent of underreporting for notifiable diseases.

Causes of Death

In 1966 there were 240,865 reported deaths of which nearly 60,000 were in infants under one year of age. The crude death rate was 7.2/1,000 population. The leading causes of death (presented in Tables 25a-e) are as follows: (1) influenza and pneumonia; (2) tuberculosis; (3) gastritis and enteritis; (4) bronchitis; (5) heart disease; (6) all accidents; (7) malignant neoplasms; (8) central nervous system vascular lesions (stroke); (9) birth injuries including postnatal asphyxia; and (10) nephritis and nephrosis.

In 1969, the ten leading causes of death represented nearly 63% of all deaths. The group consists of four communicable diseases (pneumonia, tuberculosis, gastro-enteritis and bronchitis), two degenerative diseases (heart disease and stroke), one nutritional disease (avitaminosis and other nutritional diseases), and the remaining are malignant neoplasms, accidents, and birth injuries. The rank order is essentially the same as in 1966. The pneumonias comprised 17.5% of all deaths; tuberculosis and gastro-enteritis comprised 11.3 and 5.9% of the deaths from all causes, respectively. Comparing the 1969 data with data from 1949 and 1959 shows a marked improvement over the years--improvement meaning a significant decrease in the deaths from preventable communicable diseases with a concomitant increase in the deaths from the degenerative diseases. During the past decade the tuberculosis death rate decreased by 16%, the beriberi death rate decreased by 64%, and the gastro-enteritis death rate decreased by 33%. During the same period, the death rate for malignant neoplasms increased by more than 37%.

These are remarkable changes, indicating the extent to which the socioeconomic status of the country has improved. Most of the diseases indicated above act as sensitive indicators of environmental hazards, nutritional adequacy, and access to preventive and therapeutic health care services.

Infant Mortality

Infant mortality statistics are commonly used as indicators of the relative level of development of a country and specifically of the combination of environmental hazards and availability of rudimentary perinatal health care. This is a highly sensitive indicator,

although the data in many situations understate the problem because many infant deaths are not reported. Absolute numbers of infant deaths and their ratios according to selected infant age groups are presented for the years 1961-1967 in Table 31. Throughout this seven-year period the rate has remained relatively constant and quite high, approximately 72 infant deaths per 1000 live births. By 1969 it was reported at 64.1, showing some improvement. This data indicates that no change in infant mortality has occurred during most of this decade, although it is approximately one-half of the 1951-1955 average. Apparently, the major strides were taken during the decade of the 1950's.

Infant deaths are especially important because they account for 25% of all deaths in the nation. With current knowledge, it is impossible to estimate the magnitude of the humanitarian and economic losses of such a toll. Nevertheless, it should be obvious that pregnancy has a negative influence upon agricultural and industrial productivity, increases demand for food and health care, and is psychologically and physically debilitating to the mother and family owing to the frequent deaths of children. This warrants further discussion of the pattern and cause of infant mortality.

Of all infant deaths, 50% occur within the first 28 days of life, and 34% occur within the first week. A specific breakdown of the cause of death during the respective week of life is not available; however, the significant causes of death within the infant period can be defined. The leading cause of death, accounting for more than one-third of all infant deaths, are the respiratory infections and afflictions, accounting for 21,529 in 1966 (this data excludes tuberculosis infections of the newborn). The second leading cause is the collection of ill-defined and unknown causes of death accounting for 12,529 deaths, approximately 20% of deaths in the infant age group. Most likely, many such deaths are ill-defined because of the lack of basic health care for the infant. The third cause is avitaminosis and other deficiency states accounting for 6,040 deaths, more than 10% of the total. Since the human infant is generally well-nourished even to the detriment of the mother's nutritional status, and remains well-nourished if he is breast fed, the high percentage of infant deaths attributable to nutritional deficiency states reflects the severely malnourished state of the pregnant woman or the inadequate postnatal nutrition of the infant (e.g. lack of breast feeding or chronic enteritis or parasitism). The fourth cause of death is the group of gastritis-enteritis which accounts for 5718 deaths. This group specifically omits diarrhea of the newborn for which no data are available and thereby drastically understates the magnitude of the diarrheal problems. Two other disease categories deserve special mention: tetanus and the infectious diseases of childhood.

In 1966 there were 3358 deaths attributed to tetanus, of which 2570, or 77%, were infants. In this instance, it is most probable that these are cases of tetanus neonatorum directly attributable to poor obstetric practice and hygiene. The rates of tetanus neonatorum can be used as very crude indicators of the minimum quality of obstetrical care. As the quality of care is improved by quite simple measures, tetanus neonatorum rapidly disappears.

The infectious diseases of childhood: measles, diphtheria, whooping cough, and other selected infectious diseases (respiratory tuberculosis, tuberculous meningitis, septicemia, and erysipelas) together account for a large number of the remaining infant and early childhood deaths. These diseases are of themselves important because many can be prevented or readily treated. However, they also reflect the very fragile health status of many infants and the threatening nature of their environment.

Childhood Mortality

Ages one to four

It was noted that infant deaths account for 25% of all deaths in the Philippines. Deaths in the early childhood period of one through four years account for an additional 20% of all deaths. The pattern of deaths remains basically the same (Table 25a): respiratory infections and ailments (including tuberculosis) account for 50% of deaths in this age group; gastritis-enteritis-dysentery account for more than 19% of deaths; and the remaining causes are accidents, non-meningococcal meningitis, measles, diphtheria, and nephritis and nephrosis. The lethality of measles reflects the poor nutritional status of the young child. The

occurrence of both measles and diphtheria reflect the inadequacies of basic preventive services (in this instance immunization of 50-80% of the susceptible child population). The occurrence and lethality of nephritis and nephrosis correlate with the presence of malaria and tuberculosis and is a complication of these diseases.

Ages five to fourteen

The causes of death in this age group are virtually the same as in the foregoing, with the new additions in certain years of cholera and malaria.

Adult Mortality

Ages 15-44

This age group represents those who have left school and constitute the bulk of the labor force. It also represents those who have managed to survive the ravages of early childhood. In this group, tuberculosis becomes the leading cause of death, constituting 25% of the deaths. This phenomenon is particularly noteworthy because the prevalence and lethality of tuberculosis correlates directly with the quality of housing and adequacy of nutrition. The tuberculosis disease process both in the febrile and non-febrile phases results in excess caloric consumption which wastes food or limits the available calories for work expenditures; thereby presenting certain economic costs which are examined in the chapter, Costs of Disease and the Costs of Inaction. In addition, it removes from society some of the workers who are presumably at the peak of their productivity. All of this occurs in the face of well-developed methodology for the prevention, detection, and control of the disease and a favorable benefit/cost ratio.

As before, accidents, respiratory conditions, gastritis-enteritis, and nephritis are important causes of death. Predictably, heart disease, cancer, and stroke also become important in this age group. Comparison of death rates from accidents for 1966 and 1967, separated into the categories of motor vehicle and all others, shows a doubling of the motor vehicle accident rate while the rate of all other accidents fell by 63% in this short period.

There are two other observations: first, that 7.4% of deaths in this age group are attributable to homicide and operations of war provides some insight into the extent of violence in this society; and second, that delivery and complications of pregnancy account for 5% of deaths again documents the need for significantly improved obstetrical care of the pregnant woman.

Ages 45-64 and Over

In the older age groups, the chronic and degenerative diseases take more prominence. Nevertheless, infectious diseases of the intestinal tract and the respiratory tract are still among the leading causes of death. In the age group 45-64 years, tuberculosis is the leading cause of death, accounting for 30,272 deaths in 1966 (a rate of 301.3/100,000). Tuberculosis accounts for 33.3% of all deaths in this age category.

Leading Causes of Death by Attendant

Professional attendance at the time of death for the ten leading cause of death is indicated in Table 24. The categories are divided into medically attended, interpreted to mean the attendance of a physician at or near (possibly shortly after) the time of death; not medically attended, presumably meaning that no physician or likely no health professional was in attendance; and not stated, interpreted to mean that no physician and probably no health professional was in attendance. Using these interpretations, and for these causes of death, an average of about 45% of those dying had no medical attention. This distribution varies according to the disease category. As a generalization, in the rapidly evolving illnesses (e.g. bronchitis), and those involving the poorest of the population (e.g. avitaminosis and malnutrition), medical certification is much common. About 60% of

these deaths occur without medical attention. It is also likely that these deaths are primarily in children who are dependent upon their parents to bring them to care. The more slowly evolving and symptomatic illnesses such as malignant neoplasms and heart disease more commonly have medical attention (60-70%). As a generalization, those who receive care related to the cause of death (hence medical certification) use the health officer somewhat more frequently than a private physician. This is probably directly related to the cost of care. These conclusions are further substantiated by data presented in Table 31 identifying the medical attendant (private physician, health officer, hospital) for those deaths medically certified and included in the ten leading causes of death. In the two illnesses heavily associated with poverty, low socioeconomic status, and rapid progression, the predominant source of care is the district health officer (a government employee). The hospital is rarely a source of care. By contrast, with malignant neoplasms, heart disease, stroke, homicide and accidents, the hospital is more commonly a source of care.

Conclusions

From the above discussion it can be stated that about one-third of all deaths correlate highly with the quality of housing and the nutritional status of the population (disease of the respiratory tract). Approximately 8% of all deaths (enteritis) related directly to the sanitary status of the environment: food handling, water supply, and sanitary sewerage disposal. This suggests that about 45% of all deaths can be readily influenced by alterations in the quality of the environment, housing, and food. In addition, other deaths might have been averted by access to health care. Nearly 11% of all deaths are ascribed to various categories of obscure causes and senility. The real percentage of the dying who have no access to health care is close to 40%.

II: Morbidity Data

It was noted earlier that there is significant underreporting of births and deaths. Although there is no accurate information, the situation for reporting of illness is certainly much worse. Nevertheless, the scant data available provides some insight into the prevalent illnesses, potential causes, and likely program opportunities. Although morbidity data are available for the various health regions, they are not of much comparative value because the rate of reporting may vary more than the differences in rate of illness.

The ten leading causes of morbidity for 1969 and the five-year average are presented in Table 20. All of these causes, except beriberi (a severe nutritional deficiency), are infectious in origin and fall into the clear pattern of respiratory illnesses, intestinal infections, infectious diseases of childhood and malaria.

Recent Trends

There are 41 notifiable diseases in the Philippines, all of which are communicable, except beriberi and the malignant neoplasms. During the decade of the 60's the death rate from the notifiable diseases (except neoplasms, typhoid, and paratyphoid which have shown increases) has shown a declining trend, but the incidence of new cases of bronchitis, diphtheria, whooping cough, tetanus, leprosy, and varicella (chickenpox) showed an increasing trend. The Philippine Department of Health attributes this increase to better diagnosis and reporting since the death rate showed a declining trend. However, the phenomenon could as easily be explained by the continued lack of adequate preventive services in the face of a growing population and continuing malnutrition. The declining death rate and increasing morbidity would be seen with slowly expanding rural curative health services. In any case, the trend clearly shows that preventive services, especially immunizations, have not been extended throughout the population.

The respiratory diseases are the leading cause of morbidity. Bronchitis has been the single leading cause since 1958, with the single exception of 1968 when there was an influenza epidemic. All of the causes except beriberi are infectious in origin and are influenced by geographic and climatic factors. The respiratory diseases, enteritides, and

the infectious diseases of childhood show definite seasonal characteristics. Geographical distribution appears to be relatively constant except for schistosomiasis which is highly endemic in Health Region 6; filariasis in Health Region 4; and malaria which affects mostly the hinterlands and newly opened areas of settlement. These diseases remain continuing impediments to development and agricultural production because of the morbidity, disability, and reduced work productivity of the population. Malaria can obstruct the opening of new lands for development. Table 18 presents a map of the eight health regions of the Philippines.

Quarantinable Diseases

Of the quarantinable diseases, only Cholera El Tor is present in the Philippines. In 1969 there were 1,427 reported cases and 174 deaths, giving a case fatality rate of more than 12%. This case fatality rate is far higher than need be since the disease is simple and inexpensive to treat if there is access to medical care. That such a high rate exists again reflects the problem of access to care. In well-organized programs for cholera control, a case fatality rate of from one to three percent is expected. Cholera has continued to be a major disease problem, accounting for 63,359 cases reported to WHO during the period 1961-1970. For 1971, the number of cases reported to WHO was approximately 2230. The continuing problem of cholera points to the major problems of environmental sanitation that have yet to be solved, especially the provision of safe water supplies and sanitary excreta disposal. The cost to the individual and society in suffering, illness, death and medical care is great. Because of the psychological impact of the disease and the international fear generated by the disease, the economic impact of cholera far exceeds the cost of medical care. Some of these considerations, and their implications for program planning in the prevention and control of cholera, are discussed in the chapter, Costs of Disease and the Costs of Inaction.

FUNCTIONING OF THE HEALTH CARE SYSTEM

Organization of the Department of Health

The Department of Health, centered in Manila, is in charge of all public health services and supervises, advises, and consults private health services. The Department is headed by the Secretary of Health who is assisted by two undersecretaries. The Undersecretary of Special Health Services supervises the Quarantine, Research and Laboratories, and the Dental Health Services Divisions. The Undersecretary of Health and Medical Services supervises the Bureau of Health Services (Preventable Disease, Environmental Sanitation, Maternal and Child Health, and Industrial Hygiene and Nutrition Divisions); the Bureau of Disease Control (Social Hygiene, Tuberculosis, Filariasis, Leprosy, Mental Health, Cancer Divisions); and the Bureau of Medical Services (hospitals).

Directly under the Secretary of Health are the Administrative Office, Health Education and Personnel Training, Disease Intelligence Center, Malaria Eradication Service, National Schistosomiasis Control Commission, and Food and Drug Administration. The Office of Administrative Services acts as a licensing authority for health professionals.

Each of the eight regional health offices (Table 17) supervises a regional health training center and a regional laboratory. Field operations include five main projects: Rural Health Units; Social Hygiene Services; Tuberculosis Control Services; Environmental Sanitation; and Filariasis Control Services.

The Department of Health receives assistance from the Food and Agriculture Organization (FAO), the International Children's Fund (UNICEF), the World Health Organization (WHO), and from the U.S. Most of the public health and health-related programs have some external financing.

From 1964-1967 the Department of Health has received an average of 6% of the total national appropriations; the Department of Education, in comparison, receives about 25%. The total expenditures of the Department of Health have grown 10 times while per capita expenditures have grown only 6 times, from P0.48 to P2.77 in 1966. Thus, the growth of the budget is consumed by an expanding population and rising costs and is not reflected in the expansion of programs. An example is found in the Rural Health Units, the fundamental unit of health care in the country.

Rural Health Units

A committee was formed in 1952 to make recommendations for the rehabilitation and improvement of health services in the Philippines. This committee was responsible for the creation and funding of the Rural Health Unit project, which concentrated on serving the community, particularly in rural areas, where 75-80% of the Philippine people live. Along with horizontal programs of general care, the RHUs also lend support to vertical programs such as tuberculosis control and maternal and child health care. In theory, personnel distribution is based on the population to be served. Because of transportation facilities and topographical features, however, this is not always practical.

The activities of the Rural Health Units include the "basic-seven" services which are necessary for the health protection of a local unit as recommended by the World Health Organization Expert Committee on Public Health Administration. These are communicable disease control, collection of health statistics, environmental sanitation, maternal and child health, health education, provision of nursing services, and medical care. These "integrated-health services" are geared towards the concept of preventive health. The average unit is supposed to be staffed by a rural health physician, a public health nurse, a midwife, and a sanitary inspector. This basic team does not exist in all units.

Though the theoretical basis for health care exists through RHUs, it is difficult to assess the impact of this program. Sketchy data are available as to how RHUs were mobilized

and staffed to deal with certain disease entities and epidemics, and despite an apparent surplus of health manpower, 1967 figures from the Second Conference on Population suggests that only 50% of the RHUs were completely staffed.

Recent legislation has complicated the situation by permitting Rural Health Unit physicians to have an outside private practice. This change is clearly not in the interest of the country since it will encourage a dual system, a low-quality "charity" system and a better private system. In other countries under similar conditions, screening of patients in public clinics as possible clients for the physician's private practice has occurred. Ultimately, the change will not benefit the physician since he will not be able to devote himself fully to either his public or private duties.

The savings in cost, health resources, and human misery resulting from the use of simple preventive measures are indisputable. Morbidity and mortality data from diseases preventable by immunization, however, suggest the inadequate protection of the population. (Table below) Reported figures on morbidity and mortality (1969) underestimate the true incidence of these diseases because of common under-registration of death by nearly 30%, because of even greater under-reporting of illness, and because of the large percentage of deaths and illnesses not certified by qualified medical personnel.

	Cases	Rate per 100,000	Deaths	Rate per 100,000
1. Diphtheria	1,626	4.4	701	1.8
2. Whooping Cough	25,542	68.7	98	.3
3. Typhoid	1,508	4.1	391	1.1
4. TB (respiratory)	154,416	415.6	27,518	74.1
5. Measles	25,298	68.1	2,515	6.8
6. Polio	665	1.8	252	.7
7. Tetanus	4,249	11.4	3,782	10.2

Since the victims of these diseases are principally children, the high case rate indicates the failure of the Rural Health Units, maternal and child health services, and school health services to deliver basic preventive services to children. This failure puts an added burden on treatment facilities.

Decreasing budget obligations indicate that the Rural Health Unit Program is falling behind in serving an expanding population, particularly in view of rising costs. Estimated budget obligations for RHUs for FY 1971 were less than the actual obligations for FY 1969.

BUDGET OBLIGATIONS-FY 1969, FY 1971 (in pesos)

	<u>Actual FY 1969</u>	<u>Estimated FY 1971</u>
1. Rural Health Units	55,728,076	51,127,434
2. Social Hygiene Services	374,347	616,272
3. Tuberculosis Control	1,938,762	3,952,162
4. Environmental Sanitation	389,308	641,071
5. Filaria Control	164,458	232,961

Hospitals

While the intention of the Rural Health Units is primarily to prevent disease and provide ambulatory care, the role of the government hospital is to cure disease. For this purpose the Department of Health allots approximately half of its budget. Various estimates have placed the percentage of the population who are medically indigent at 65 to 80%. In FY 1970, 90% of the 10,275 general beds in Department of Health hospitals and 10% of the 21,068 beds in private hospitals were free.

The distribution of hospitals (FY 1970) is as follows:

Total number of hospitals	737
Total beds/population (37 mil.)	1:678
Under the Department of Health	206
General Hospitals	193
Up to 25 bed capacity	119
Up to 50 bed capacity	31
Special Hospitals	5
Leprosaria	8
Private Hospitals	494

hospital development program increased hospital beds 5% and hospital personnel 8% from 1966-1969. In the same period, however, operational expenditures and cost per bed per day jumped 64% and 36% respectively. These increases generally reflected rising costs and not increased services and activities. Continuing low bed occupancy and the small size of most facilities also increased costs. (Table 42) In addition, 88 built but non-operating "ghost hospitals" were awaiting funds for staffing in 1967. Still others had been authorized by legislation.* The hospital development program has been more successful in building unnecessary hospitals than in instituting a needed program to develop worthy hospitals or to solve the problem of low bed occupancy when nearly half of all deaths are not attended by medical personnel.

Budget allocations for leprosaria are out of proportion to the magnitude of the disease. Leprosaria account for 4% of the hospitals, 3% of the personnel, and 9% of the hospital expenditures; they cost twice as much per unit of work as the skin clinics (FY 1969-1971). (In addition, WHO spent more in the Philippines in FY 1971 on leprosy fellowships (\$10,200) than on programs for tuberculosis control, schistosomiasis control, communicable disease fellowships, environmental health, public health fellowships, family planning, nutrition, and cancer control.)

A shift in emphasis from the leprosaria to the less costly skin clinics is indicated in a statement in the FY 1972 Philippine Budget. "With the intensive campaign being undertaken by the travelling skin clinics, it is believed that confinement in sanitarium will be centered only on those advanced cases of leprosy." This comment reflects current medical thinking on preventive and treatment measures for this only mildly communicable disease for which a large percentage of people have natural immunity. Infectiousness is lost in previously untreated patients in most cases within three months of continuous therapy with sulfones. Hospitalization is encouraged only for initiation of treatment, if indicated, or for rehabilitative care. Ambulatory treatment is recommended thereafter, and no special isolation procedures are needed in or out of the hospital. The Philippines, however, is continuing to spend about four times as much on hospital-based treatment as on early detection and out-patient treatment in an outreach program.

The pork barrel tradition of the society encourages the building of unneeded hospitals which serve as tangible evidence of political efforts on behalf of the electorate. With this concrete proof, no one could say that the political system had not tried to solve health problems, especially in the absence of data indicating that another hospital is not a solution.

School Medical and Dental Services Department of Education

Coverage of the school age population by health services is haphazard and inadequate; it is not keeping pace with the rising population. Four main activities are stressed: medical services (student records, height/weight norms, treatment and education); dental services; deworming, malnutrition and health education; and the Philippines-CARE feeding program.

* The "ghost hospitals" are an example of an ambitious government program which is passed without the necessary funds to make it fully operational.

Dental services are stressed more than medical services. In 1966-1967 there were five times as many dentists as doctors; the dentists were able to see 50% of the students compared to the 10% seen by school doctors. In FY 1970 and 1971 the cost per unit of work for dental services was almost twice that of medical services. Emphasis on dental services in view of the pressing medical problems of school children appears to be a misallocation of scarce resources. (Table 46)

Two other programs, supplementary feeding and deworming, are short-term, and their impact is consequently limited. Deworming is a relatively fruitless measure in view of the prospect of immediate reinfestation.

Dental Health Services

A WHO/UNICEF assisted project has been upgrading personnel and equipment. There is a limited number of flouridation projects.

There is conflicting information on the plans for expansion of these limited services. In 1970 there were only 292 rural dental health units serving 1,379 municipalities. One report indicated a five-year program to expand this number to one per municipality. The Four-Year Development Plan, however, expects only limited expansion.

Health Personnel

Traditionally, ratios of health personnel to population units have been used to assess the adequacy and supply of health manpower. These ratios provide a general, but crude, index of availability. Minimal personnel targets for the Second Development Decade have been stated by WHO as follows:

One physician per 10,000 population
One nurse per 5,000 population
One technician (laboratory, X-ray, etc.) per 5,000 population
One health auxiliary per 10,000 population
One sanitary engineer per 250,000 population
One sanitarian per 15,000 population
One midwife per 5,000 population

The above targets are only minimum requirements. The optimum number of personnel and the various categories needed depend upon the structure of the health care system, the health problems to be treated, the level of health education of the population, the relative role of preventive and therapeutic services, the demand of the population, the distribution of the population, and the transportation facilities and topographical conditions of the country.

Although the numbers of health personnel appear to be adequate to serve the Philippine population, there are aspects that strongly influence this apparent adequacy. One of these is the Exchange Visitors Program that allows medical personnel to study in the United States. From 1956 to 1966, this seems to have accounted for 40% to 50% of all the doctors and nurses that were licensed each year. Although this program has been questioned by the Philippine Government, no action has been taken to alter the program.

In 1963 there were 18,265 physicians in the Philippines, nearly a 1:1,700 doctor/population ratio. There were, however, only 668 in full-time government service. Since most of the private doctors and hospitals would be in the large towns and cities and since only 10% of private hospital beds are free, most private facilities would be out of reach of 65 to 80% of the people.

Distribution of physicians is a serious problem. In Manila in 1970 the ratio of doctors to population was 1:250 to 1:500. In rural regions the ratio was 1:5000.

The WHO minimal recommended ratio of 1 doctor to 10,000 persons has apparently been reached. In 1971, there were 1715 rural health physicians for an estimated 38,332,000

population, or 1 physician to 22,350 people. If physicians working for government hospitals are included, the ratio approaches the 1:10,000 level. When physicians employed by city health departments, Bureau of Public Schools, the Puericulture Centers, plus private physicians are considered, the number of physicians does not seem to be a problem. The above information indicates that the proper utilization and distribution of the present number of physicians should be emphasized. It is also clear that the number of physicians does not influence markedly the prevalent disease problems. The diseases are influenced not only by therapeutic medical care but also by other activities in the health sector and in other sectors.

The status of nurse manpower is, however, more critical. In the Rural Health Units there were only 34 more nurses than physicians in 1971. In half of the health regions there were fewer nurses than doctors. The ratio of nurses to doctors in government hospitals is slightly better. In no health region, however, are there twice as many nurses as doctors. In FY 1970 the ratio of nurses employed by the Department of Health was only 1:22,000. These shortages occur while more than 10,000 nurses are allowed to stay in the United States.

The question was raised at the Second Conference of Population in 1967 whether the structure of the Rural Health Unit was the best possible for optimum use of personnel. The public health nurse seems to have had more specific training in community public health work while the physician is confined to a hospital setting during his training. Primary care and preventive medicine could conceivably be handled by a well-trained nurse, lowering the cost of better, more adequate staffing of the Rural Health Units. Doctors could then spend more time in treatment, supervision, and training medical personnel.

In 1971, the ratio of midwives employed by Rural Health Units to population was 1:15,690, well below the WHO standard of 1:5000. The shortage of midwives further complicates the shortage of nurses and further burdens Rural Health Unit doctors and nurses with maternal and child health activities which could be performed adequately by midwives.

In 1971 Rural Health Unit staffing included 2,055 sanitary inspectors, a ratio to population of 1:18,653, approaching the WHO standard of 1:15,000. Considering the inadequacy of sanitation, particularly excreta disposal, the Department of Health needs more sanitary inspectors. These sanitarians could be invaluable in helping communities take inexpensive, simple measures to improve their sanitation, particularly since the provision of modern water supply and sewerage facilities is an expensive, long-range, and elusive goal. Because of administrative overlap, lack of training and data services, and cultural reluctance, these advisory duties are probably not being performed.

According to the Annual Report, FY 1970, 128 sanitary inspectors were trained by the Department of Health. It is not known whether other sources of training are available. The high morbidity and mortality from water-borne diseases indicate the priority for training and employing large numbers of personnel who have responsibility for inspection of facilities and the enforcement of standards.

The responsibility for providing community water supplies and sewage disposal facilities belongs to the independent National Waterworks and Sewage Authority (NAWASA). The Health Department and local health agencies have responsibility for checking the quality of the water and inspecting disposal facilities for human waste. It is not known whether the Department of Health has enforceable standards of sanitation. Some minimum standards of sanitation should be written and attempts should be made to enforce these standards, at least in public facilities.

Illustrative Examples of the Functioning of the Health Care System

The peculiarities of the Philippine social and political systems that prevent raising the standard of living are also responsible for failing to control disease entities. Flaws inherent in the system cannot be expected to change themselves. Changes have been proposed; the reasons they have not been implemented are the same reasons that they had to be recommended in the first place. Two examples are presented: tuberculosis and a short consideration of malaria.

The high incidence of tuberculosis is an indicator of the standard of living; a low standard of living and tuberculosis reinforce one another. The force needed to intercept this reinforcement cannot be expected to come from within the Philippine political system, because the system is self-perpetuating. This is demonstrated by two Assignment Reports on tuberculosis; one in 1967 and the other in 1971. The deficiencies found by the 1967 survey concerning the tuberculosis vaccination and treatment program are related to the following:

- 1) failure to repair broken equipment, especially mobile chest x-ray units, and refrigerators in which vaccine is stored;
- 2) irregular treatment as opposed to regular treatment;
- 3) poor staffing of clinics--absence or permanent departure of personnel with no subsequent replacements;
- 4) over-dependence on x-ray diagnosis (when many units were inoperable) rather than on sputum examinations;
- 5) failure to obtain available drugs;
- 6) lack of proper storage for drugs;
- 7) use of inappropriate drugs;
- 8) lack of operational and administrative records;
- 9) absence of adequate training manual for tuberculosis treatment personnel;
- 10) inability of people to reach clinics;
- 11) poor performance of all except nursing staff in the administration and delivery of tuberculosis programs;
- 12) over-staffing of clinics but poor distribution of personnel;
- 13) lack of supervision at all levels;
- 14) poor integration of tuberculosis programs into RHUs.

None of these deficiencies (with the exception of number ten: inability of people to reach clinics) is related to or caused by absolute limitations of physical resources, but are rather attitudinal consequences of the adverse social and political structure. This is exemplified by the fact that in the 1971 report the same pattern of deficiencies, as well as the added one of failing to implement the recommendations of the 1967 report, is found. These recommendations were simple and practical. Basically, they were:

- 1) make the mobile chest x-ray units stationary. Records showed that stationary clinics made more exams than the mobile ones owing to the mobile units' tendency to remain unrepaired, sometimes for years at a time;
- 2) supply microscopes to RHUs and train the personnel to take sputum smears to diagnose cases instead of relying on x-ray diagnosis, because sputum smears are cheaper and more reliable;
- 3) treat patients only with isoniazid because it is cheap and effective;
- 4) keep records of treatment;

- 5) develop a manual for RHU tuberculosis operations in order to raise and maintain the quality of care given;
- 6) vaccinate (BCG) all first graders because 95% coverage of this population can be obtained (and can be highly effective)¹;
- 7) redistribute personnel of RHU staffs for tuberculosis because the staffing is inefficient²;

The implementation of these recommendations depends upon the administrative capabilities to effect such change. Both studies emphasize that the physical and organizational framework for a successful tuberculosis vaccination and treatment program exists, but it lies unused or used badly because of administrative and attitudinal ineptness or apathy.

Presently, the government of the Philippines is responsible for 80% of the funds used to administer tuberculosis vaccination and treatment programs, even though the majority of this activity is carried out by private organizations. It appears that the private organizations responsible for this work are operating at something less than maximum efficiency; it would even suggest that an increase in the amount of money spent by both foreign and domestic sources is not the answer. The money presently allocated for tuberculosis activities is not being used effectively; it can therefore be assumed that more money would be used as poorly.

Malaria

Malaria continues to be a major health problem in the Philippines, hindering the development of many frontier areas such as Mindanao, Palawan and Northern Luzon. Malaria is the 6th leading cause of morbidity in the Philippines (1969) even though the case rate decreased from about 200 (per 100,000 population) in 1960 to 85 in 1969 and the death rate decreased from about 6 to 2 in the same time. In a country where there exists insufficient caloric intake, increased caloric needs of the ill population, and malabsorption due to extensive intestinal disease and parasitism, the debilitating effects of malaria are an added burden. A recent study has demonstrated that malabsorption also occurs in the acute phase of malaria and causes additional wasted calories. (Table 34)

The U.S. has supported malaria eradication in the Philippines continuously, beginning in FY 1953. USAID will end support in FY 1973 after an expenditure of nearly 10 million dollars matched by about 12 million dollars from the Philippines and with additional funds from WHO.

In principle, malaria eradication can be achieved by residual spraying of DDT or other insecticides on house interiors in a malarious area for a 3-4 year period or until transmission of the disease is interrupted. The remaining active cases are either cured by special treatment or become naturally non-infective.

During 1954-1957, 1,200,000 houses were sprayed each year for 4 years. Malaria was consequently reduced to the point that it appeared to be confined to remote frontier lands. With the extensive migration of settlers into these lands, however, malaria continued to spread.

¹Based on one case prevented per 300 vaccinations, of one million first graders there would be over 3 1/2 thousand cases prevented per year.

²Despite budget cuts, there has been an increase in the amount of money spent on personnel.

In 1960 the Malaria Eradication Service was decentralized. The program made little progress in the following six years because of administrative difficulties. In 1966 the program was again centralized and spraying was begun in 1968. In 1969 the number of houses to be sprayed was reduced to 1,000,000 from 1,600,000, and further reductions have been made in order to center attack on "hard core" areas where 10-15% of the population are infected.

The plan is to continue to turn over areas with low incidence of malaria to the Rural Health Units for surveillance. Additional funds and personnel can be diverted to high priority areas where more precise strategy based on better data and better use of resources can be applied. (Similar revisions of strategy have recently been made in other countries which have had continuing difficulties in fighting the disease.) It is assumed that by 1973 malaria will have been reduced to the point that the government of the Philippines will be able to continue eradication measures with its own resources.

Commentary

The battle against malaria over nearly two decades presents lessons to be learned for the planning of any future programs involving a long span of time, logistical precision, and continued administrative support.

Problems which have been observed in other large-scale projects in the Philippines and elsewhere occurred in the malaria program. The government's administration of the program was complicated by its tendency to spread itself too thin. In this way the Malaria Eradication Service would not have been criticized for servicing some areas within the country and not other areas (whose leaders would demand that services be rendered). As in other programs, the government responded more to political considerations than to epidemiological indicators and to the realities of resource limitations. The administrative problems were complicated by extensive external financing which was made available without reference to the absorptive capacity of the public sector. Recruitment of personnel was difficult and turnover was rapid. There were delays in the payment of workers and inadequate supervision of field personnel. There were also delays in the release of funds. The provision and maintenance of supplies, a perennial problem of the Department of Health, interrupted field operations. Reporting systems were complicated and hindered data feedback, a prerequisite to the necessary reorientation of priorities and other adjustments of long-term program.

In conclusion, some considerations for planning long-range programs include: workable data reporting, recording, and feedback systems; commitment to the shifting of resources to meet redefined priorities; minimum and optimum success criteria; the kind and amount of administrative machinery needed to provide sustained logistical support; the kind and amount of all resources required; the necessary environment for the success of the program compared to the existing environment; the secondary effects of the project (side effects not related to program objectives); and opportunity costs (loss of the chance to use the resources allotted to the project for other purposes). It should be noted that a well-administered and effective vertical program dealing with a common and important disease entity can provide the basic administrative and professional resources for building more comprehensive health services. The malaria program provides this potential.

Projected Need for Health Services and Personnel in the Seventies

With a projected population increase of 37% between 1970 and 1980 (median projections of Dr. F.W. Lorimer), expenditures of the Department of Health should be increased by 2.8 million pesos annually between 1968 and 1970, by 3,623,000 pesos annually between 1970 and 1975 and by 4,107,600 pesos annually between 1975 and 1980. The following paragraphs detail the estimated expenditures (Second Conference on Population) needed to maintain the currently inadequate level of health services.

The Rural Health Program: R.A. No. 3797 set a deadline of 1969 to fill the positions authorized under the program. After this time the rural health program will be integrated under general appropriations acts. If the program is to continue past 1969 at the previously authorized level of coverage of the population, 50 new units will have to be added every year

between 1970 and 1975 and 58 yearly after 1975 based on a ratio of one unit for every 20,000 population. Fully staffed, 50 to 58 new physicians, nurses, midwives, and sanitary inspectors will have to be recruited every year. The cost would be P1.3 million a year for 50 units from 1970 to 1975 and P1.5 million for the 58 additional units each year from 1975-1980.

Dental Health: In order to meet a ratio of an additional dentist for an increase of 100,000 population, 12 to 14 new dentists would need to be hired by the Department of Health. The amount involved for salaries of the new dentists and dental aides would be P75,000-P85,000.

School Medical and Dental Service: In order to maintain present levels of service (one physician to 55,000 to 60,000 and one school dentist for 14,000 pupils) with an average annual increase in school enrollment by 400,000, a total of 7 physicians, 28 dentists and 28 dental aides will have to be recruited every year in the seventies. At present salary scales an additional appropriation of about P230,700 annually would be needed.

Environmental Health: Less than 50% of the population have access to good water supply. Per capita costs of 1963-1964 constructions by the NAWASA were P20 computed by W. L. Reyes. With a goal of providing 75% of the population with water supplies by 1975 and taking into consideration the 50% backlog and the 1963-1964 per capita cost, the annual expenditure would be P33.5 million. An amount of P10.5 million for sewerage disposal would be required annually merely to keep up with the population increase.

Hospital Services: Under the 5-year Hospital Development Program for 1966-1971 the number of beds was to be increased from 20,225 to 22,500 including those in the so-called "ghost hospitals." The project envisions a total outlay of P223,475,000 at the end of the period.

W. L. Reye's estimates for the decade of the seventies presented at the First Population Conference (1965) are only one-half of the goal set in the 5-Year Hospital Development Program of the Bureau of Hospitals. Considering the low occupancy rates of existing hospitals, the approximate 50% allocation of Department of Health funds to hospitals, and the cost of construction, equipping and operating a hospital bed (P36,500), further allocation of resources in this area would be contraindicated.

Health Program of the Four-Year Development Plan, FY 1971-1974: Comprehensive strategy and quantified goals are conspicuously absent in the health program of the Plan. The following seven programs will be given priority during the four-year period, but it is not clear to what extent resources will be diverted to them or whether additional revenue will be made available.

1. Strengthening and Limited Expansion of Rural Health Services
2. Improvement of Hospital Facilities
3. Limited Expansion of Rural Health Dental Services
4. Control of Communicable Diseases
5. Environmental Sanitation
6. Drug Inspection (for purity and safety)
7. Family Planning

Conclusion:

It appears that the Philippines is losing ground in meeting the health needs of a rapidly growing population. The situation presented by rising costs and the need for continuing expansion of facilities would be difficult under the best conditions. These problems are greatly aggravated, however, by misallocations of resources, lack of logistical support, ill-defined programs, overlapping and ill-defined responsibilities of health workers, lack of usable data with which to establish priorities, and particularly the lack of an overall policy in the health sector.

The impact of disease upon a society has traditionally been considered in terms of the number of lives lost as a result of the disease, the number of ill or disabled persons afflicted with the disease, or the degree and length of suffering caused by the disease. While these considerations are essential, they do not identify the full burden placed upon the society. Disease also carries certain economic costs that are borne by the society--the direct costs of prevention and care and certain indirect costs which are often borne without the knowledge of the society. The direct costs can be consciously reduced through decisions to ignore the problem. Indirect costs, however, remain the same or increase if the disease problem is ignored. They can be reduced only through prevention or eradication of the disease. Some of these costs have been estimated in the following presentation. Emphasis is placed upon the indirect costs in order to illustrate the magnitude of the burden to society that results from failure to take appropriate action to control diseases; these are the costs of inaction. The examples used are tuberculosis and cholera.

The costs are presented in terms of approximate figures* which are based upon reasonable and conservative estimates of the situation. In virtually all instances, the estimates are low. For tuberculosis, direct and indirect costs have been computed in five categories:

1. The Direct Costs of Diagnosis and Care:

Tuberculosis activities are carried out in three sectors: private, local, and national. The Philippines Tuberculosis Society (PTS), created at the beginning of the century, represents the private sector. As a national voluntary organization, it raises funds from various sources, mostly direct and indirect government subsidies, and its local yearly expenditures amount to more than six million pesos. It has directed its attention to clinical, curative aspects. Its main activity has been the establishment and management of a large tuberculosis hospital near Manila (the Quezon Institute, which has about 1300 beds) and of twenty-four tuberculosis clinics, nine of them having attached pavilions with twenty to fifty beds. In spite of its important financial involvement, the government has no control over these PTS activities which so far are not coordinated with government activities.

The government is also responsible for operating special tuberculosis agencies, mainly chest clinics and BCG clinics. The total allotment for fiscal year 1968 was about two million pesos, which is about 2% of the national budget for health.

2. Indirect Costs of Educating Children Who Die Before They Become Productive:

The government spends an average of eighteen pesos per year per child on education. The number of children who die each year as a result of tuberculosis in the age group 5-9 is 6838. By taking the mean of this age (which makes the assumption that on the average each child finishes two years of school before he dies) and multiplying it times (18 X 6838), one can approximate the peso value of the wasted education; i.e., $2(18 \times 6838) = P246,168$, which is equal to about \$61,542.00.

3. Potential Years of Production Forfeited As A Result of Premature Death:

These economic losses have been estimated primarily for illustration and are presented to reflect the potential wealth that might have been generated had the preventable deaths been averted. These losses are based on minimal assumptions of performance using the minimal salary of P6.34/day for a 260 day/year (a regular five-day work week). These costs have been calculated for the male population over age 10 and under age 66. The costs are based upon the assumption that male life expectancy in the Philippines is 66 years, and had death from tuberculosis not occurred to the males ages 10-66 in a given year, the group on the average would have reached the life expectancy of 66 years. Using the age and sex distribution of

*The peso has been devalued to P6 = \$1 since the compilation of these figures, from P4 = \$1, so that the dollar estimates are inflated by 33.3%.

over 100 million dollars a year (which is at best a partial accounting). By comparison, what would it have cost to treat the 160,854 cases that were reported in 1969 or to prevent the new cases?

For example, in 1968 the government of the Philippines administered 600,000 BCG vaccinations at a total cost of \$21,420 (P85,680), or a cost of 3.5¢ per vaccination. The recommendation has been made that such vaccinations be aimed at children in the first grade because 95% of the children age 6 in the Philippines are in the first grade, while the attendance decreases rapidly thereafter (only two-thirds of them are still in grade III, and only one-third of the children make it to grade four). For a BCG vaccination program to be effective, it is estimated that 80% of the population must be immunized. It seems reasonable, then, to encourage a program that would successfully reach 95% of the population year after year. The cumulative result could surely prove worthwhile. (From WHO Consultant in Tuberculosis Assignment Report by Dr. P Mercenier, 1967.) The projected cost of vaccinating the approximately 2.5 million first-graders is \$100,000 per year; a considerably lower figure than the costs incurred by the society due to the disease.*

The prevention and/or cure of tuberculosis may merely allow the substitution and manifestation of another equally severe disabling and eventually fatal disease. Consequently, the person may never meet the life expectancy of his peers or equal his economic potential merely by health action limited to tuberculosis. Therefore, ascribing lost potential earnings by premature death to a specific disease may not be entirely useful, although the potential earnings are indeed lost by premature death. It is here that it is essential to move beyond the categorical disease interests of tuberculosis and to direct health action into the sphere of socioeconomic development to promote adequate nutrition, personal hygiene through education, proper housing, and industrial hygiene.

In using estimates of potential earnings which are lost because of premature death, certain basic and critical assumptions are made. Most important of these is that if death can be prevented and/or the disease can be prevented, that the individual is moved from a dysfunctional into a productive category (i.e., that the individual will have a life experience comparable to the "average male" and should meet the average life expectancy of 66 years), and that during this time he will have the potential to be at least as productive as the minimal wage earner. This assumption may not be correct except for certain diseases and causes of death. The fact that a man contracts tuberculosis which eventually becomes fatal, while many others do not, may suggest that he is in some way different from his fellow males-- he may be at high risk with low resistance, poor hygiene, and poor nutritional status.

Cholera

A summary example of comparing the costs of inaction with those of action taken to contain a disease is cholera. Extending, for illustrative purposes, the assumptions of Sheldon and Pollack as outlined in Syncrisis, Vol. I., from typhoid to cholera, we might approximate the caloric loss to the Philippine population caused by more than twenty-two hundred cases of cholera per year. With the assumption that each case requires an annual caloric increment of 49,000 calories (Table 34), these twenty-two hundred cases consume over 10.7 million calories per year. Translated into working man/days of 2400 calories each, this amounts to almost four and a half thousand full-calorie man/days of labor.

The disease also has other interesting aspects. Cholera in the Philippines is an endemic disease--it strikes the population year after year; all measures taken to prevent its continuance to this point have been ineffective. Second, the effect that cholera has on a population is very severe. People know that without proper treatment, a cholera victim risks a rapid and unsightly death. Third, there are two types of cholera: the El Tor strain and classical cholera. In both types, the number of cases with overt illness represent only a fraction of those who are infected and therefore capable of communicating the disease or becoming clinically ill themselves. With El Tor, however (the

* Based on one case prevented for every 300 vaccinations, of 1 million first graders there would be over 3 1/2 thousand cases prevented per year.

The third and best way of dealing with cholera, however, is by preventing the disease in the first place. In its Weekly Epidemiological Record (January 7, 1972), the World Health Organization states:

Cost-effectiveness and cost-benefit analyses of various cholera control programmes have shown that sanitation is both most effective and most beneficial from a financial point of view. Good standards of sanitation and personal hygiene make a country non-receptive for cholera. It is therefore concluded that all efforts should be made to improve sanitation and personal hygiene in each country and thus bring the permanent solution to the problem of cholera control.

In summary, it is obvious that improvements in sanitation and water supply effectively lower the morbidity and mortality for all infectious enteric diseases, whether they are bacterial, viral, or parasitic. In addition, improvements in environmental sanitation are generally permanent, whereas any effect of a cholera vaccination program is transitory. In terms of lives saved, obviously a diarrhea disease hospital would not only assure essentially 100% survival for cholera victims, but would also reduce the morbidity and mortality of patients with other diarrheas and dysenteries.

The discussions of tuberculosis and cholera illustrate various aspects of treatment methods that may not be producing the desired results. For instance, money spent to combat tuberculosis might better be spent for preventive services than for curative ones; and of all the ways of treating cholera, perhaps a method that guarantees almost 100% survival for other dysenteries and diarrheas as well as cholera is more advantageous than vaccination programs as they now exist. In both cases, the course of action presently employed to combat the disease is more expensive than potential alternate courses of prevention or treatment that promise a better success rate.

now-dominant strain), the percent of sub-clinical infections is much higher, approaching a ratio of one clinical case to ninety-five or ninety-nine sub-clinical infections. Fourth, cholera is very rapid in its onset and its resolution. A victim can become so dehydrated within a matter of hours that without medical attention he will die. Access to care facilities is therefore a critical aspect of adequate cholera control. The 12% fatality rate for the Philippines is high (the average is between 1 and 3% in a well run program) and may suggest poor access to cholera treatment facilities. Fifth, sophisticated medical equipment is not required for the effective treatment of cholera victims. Treatment is based on replacing body fluids lost through diarrheal episodes, and again, access to treatment is the critical factor. Effective treatment could well be provided by non-physicians. Sixth, the spread of cholera is dependent upon the contamination of food and water supplies by disease-carrying fecal matter. Cholera therefore represents one way in which man's contamination of his environment kills him. Seventh, the spread of cholera is culturally dependent upon peoples' indiscriminate defecation and on their unwillingness or inability to supply sanitary facilities that would make the population non-receptive to the disease.

There are basically three ways of dealing with cholera (four if it is not dealt with at all). One is by vaccinating against the disease. Vaccinations, however, prove only about 50% effective (Table 35), and protection against the disease decreases rapidly with time, (Time 35). At once, the problems with this method become clear:

- a) half of the people who would have contracted the disease will do so even if they are vaccinated and will possibly die without the aid of rehydration facilities;
- b) vaccinating gives people the illusion that they are protected from cholera when they are not. This is especially important when countries require cholera vaccination for international travel;
- c) the cholera vaccination treats nothing except cholera--there is no overlapping coverage of other disease entities.

The second way of dealing with cholera is through rehydration centers, the costs of which are more competitive than vaccination programs (Table 37) and have the following overlapping advantages. First, for anyone with cholera who can reach a rehydration center, his chances of recovery are almost 100%. (Table 37) Second, this 100% recovery rate also applies to similar diseases that are treated in the center, diseases which in many cases approach or exceed the number of cholera cases. (Table 37) For these reasons, it appears that money spent for vaccination programs would be better spent for rehydration centers when treating clinical cholera cases.

Various aspects of temporary and permanent rehydration centers are worth considering. Both centers treat cholera, only by definition the temporary center does so only sporadically while the permanent center is constantly available for cholera and other enteric infections. Unlike the permanent center, the temporary one relies on a surveillance system in order to plan its activity. Not only must the population know that the center exists and have access to it, but the center must somehow recognize the demand for its services and meet that demand. Meeting the demand for services requires proper administration of the centers, which in the case of the permanent center is somewhat simplified when compared to the temporary center. The very nature of the temporary center involves mobility and quick response, both of which are dependent upon efficient administrative capabilities. Such administrative capabilities have yet to make themselves visible in the Philippines. Both types of facilities obviously depend upon access for their success; in the case of temporary centers ability to get to the population, and in the case of the permanent centers ability of the population to get to the center. We have demonstrated that in the Philippines, adequate access does not exist. For urban areas, temporary centers have a better chance to succeed because of better access, while the reverse is true in rural areas. Program evaluations also show that the administrative capabilities to coordinate either facility do not exist. The rationale for permanent centers in rural areas is even stronger because they can be used to establish expanded health services for the population. They would not require sophisticated administrative machinery even though this remains their greatest obstacle.

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NUTRITION

The role of adequate nutrition in promoting and maintaining a high level of productivity cannot be ignored. In developing countries, people in lower socioeconomic groups spend from 80 to 90 percent of their income on food and direct a correspondingly significant portion of their effort toward procuring food. It is obvious that without a healthy population, food and other resources are either not produced, or, if produced, they are wasted. The loss of human potential cannot be accurately calculated, but the concept that days and years of productivity are wasted due to disease is legitimate. Some attempt is made to estimate these losses in the chapter, Costs of Disease and the Costs of Inaction.

In the Philippines, there appears to be an overall insufficient level of nutrition. There are, however, periods in life when nutrition is especially critical to the development of human beings, such as pregnancy, lactation, and early childhood up to 5 years of age.

Pregnancy is generally recognized by health personnel as a period of nutritional stress when a mother's needs for specific nutrients are increased from nine to sixty percent above normal. While energy needs increase by only ten percent, and then only during the second half of pregnancy, the needs for other nutrients increase to a greater degree shortly after conception. Thus, if there is to be normal fetal development without depletion of maternal reserves, the normal eating patterns of a pregnant woman must be modified in the early part of pregnancy.

In the Philippines, dietary intake by pregnant women does not differ conspicuously from lifetime diets. It is possible to conclude that the dietary habits established early in life persist even in the face of the increased requirements of pregnancy.

During lactation, in contrast to pregnancy, caloric needs are increased 50 percent so that dietary modifications require a substantial increase in the quantity as well as the quality of the diet. It is evident that from the outset, infants and mothers in the Philippines have a reduced chance of survival and an increased susceptibility to infection due to poor nutritional status.

Directly related to the period of lactation is the nutrition given to the infant. The child's growth during the years from birth to about 5 years of age is critical to his mental and physical development. This age group in the Philippines suffers a mortality rate of from 100 to 165 per 1000 live births.* Studies show that physical and probably mental retardation are the results of what appear to be widespread malnutrition and infectious diseases that are evident mostly in children. If the child survives, resources are then wasted in keeping the child alive. Moreover, the problem will grow exponentially, in the manner of the population, and will not be confined. As Table 6 shows (although production does not represent consumption or distribution), even though overall production is increasing, per capita production is staying roughly the same, and at the present time is falling. Here is a vicious circle at work. Malnutrition makes the child more susceptible to disease, and disease makes the child's malnutrition more acute. The result is that in a society with such a high birth and death rate there is a rapid turnover of life. Mothers become baby factories because children are not expected to live, and because they are not expected to live, mothers have many more children than they actually want or can support.

The social picture is of a society where individuals behave toward one another such that the total supply of goods and services generated is barely enough to keep the people alive. There is little incentive for individual members to increase their own contributions, even though as individuals they know how to and would enjoy having more than they have at the present time.

* Deaths in infants and early childhood to age 4 constitute 45% of all deaths recorded in the country.

There appears to be behavior motivated to reduce inequalities, to maintain good feelings between neighbors, and to make sure that no one perishes from hunger or lack of other basic necessities. This constellation of attitudes functions in a way to inhibit the economic development of the community since it restricts the increase of the total supply of goods which the group might produce.

It is thought that the amount of good in the world available to men is limited, and each person who receives some good does so at the expense of others. It is, therefore, improper to take credit for good fortune and reprehensible to refuse to share it with others. The proper attitude for someone receiving good fortune is to attribute it to luck or fate, and the proper behavior is to share it with specific individuals through known systems of reciprocity.

Such a system of reciprocal obligations begins with a gift given by the free will of the giver and with no agreed-upon form of repayment. Acceptance of the gift denotes recognition of one's membership in a specific group, with all the rights and responsibilities involved, agreement to be obligated to the donor, and willingness to make repayment with an item or service of greater value than the initial gift. The initial gift is almost always made to a person already potentially within the donor's in-group. Rejection of the gift means the rejector denies membership in the group or wishes to sever his ties with the group. It is impossible to reject a freely offered gift and maintain ties with the giver and his associates.

Guthrie (1970) has described this entire process as leveling, or, avoidance behavior. Economically and nutritionally it serves to keep the rural and peasant population of the Philippines at a subsistence level. As an example, where in other cultures a farmer keeps as many hens as he finds optimally productive, in the Philippines, farmers keep only as many hens as they can watch, which may be only three or four. The same is true of pigs or cows. The reason for this is that if a farmer's peers feel he has more than he can use, the farmer is guilty of taking more of the limited good than he deserves, and his neighbors feel no compunction about stealing or killing his livestock. Such a non-productive attitude has important implications to nutrition.

Another closely related socioeconomic phenomenon is the absence of an adequate and reliable marketing mechanism needed to stimulate agricultural or industrial production. Traditionally, demand has kept at a minimum. Consequently, production is kept at a minimum. Once such avoidance behavior has been acquired, the mere execution of it is reinforcing. It extinguishes very slowly in the absence of repeated aversive experiences, and it remains at a very high level with the help of repeated aversive episodes. For example, it takes only a few rumors to keep crop production low; whereas it takes phenomenal sales to break out of the cycle of non-productivity.

Dietary Intake

A compilation of surveys shows the following trends in the diets of school-age children in the Philippines (War on Hunger, November, 1967). First, calories appear to be deficient by at least 20% of the recommended amount. The Food and Nutrition Research Center of the Philippines recommends a daily intake of 2,200 calories for adults, but studies indicate (Handbook for the Philippines, February, 1969) that the actual daily intake is about 1800 calories, though it is probably higher during the harvest season when the workload is heaviest and lower during the slack season. The FAO Production Yearbook (Food and Agriculture Organization of the United Nations, based upon production figures, estimates that of the average 1990 calories ingested daily (1969 figures), 1263 are from cereals and 197 are from sugars and sweets, totalling 1460 calories. All sources of protein total slightly over 200 calories, and fruits and vegetables add only 95 calories.

In contrast, the typical diet of a United States citizen consists of 1/2 as much cereal, more than six times as much meat, eleven times as much milk, and more than two and a half times as much sugar (FAO figures, 1970). Also, the recent Philippine figures represent a decline from a high of 2020 calories per day during the period 1963-65. This decrease represents an increase of population over production capabilities. Taking into consideration the fact that 2000 calories per day is considered maintenance level intake, and 2400 calories

per day is sufficient for adequate activity to produce enough for that day and the next, the Philippine average of 1990 (or 1800 by other estimates) is inadequate for basic sustenance, manual labor, or disease prevention. Additional losses are also incurred by disease processes. (see chapter, The Costs of Disease and the Costs of Inaction.)

Secondly, protein intake, approximately 30% coming from animal sources, represents about 10% of the caloric intake. This is low compared to most countries. Furthermore, the caloric inadequacies dictate that the protein be used for energy in accordance with the body's needs rather than for body maintenance.

The value of even small amounts of animal protein in supplementing the low-quality protein of rice cannot be overemphasized, especially under the conditions of nutritional stress such as those imposed by lactation, for example. The ultimate value of the protein, however, is determined by the adequacy of the caloric intake.

Reports by mothers on the use of meat, fish, poultry, and eggs give the impression that they constitute a significant portion of the diet. The amounts fed, however, may be so small as to make only minor contributions to the nutritive intake. For example, in the Cagayan Valley-Batanes region the portion of meat per person per day was only 26 grams; in urban Manila the amount of leafy and yellow vegetables was 44 grams, and in Llocos Mountain Province region, the amount of milk was 20 grams and the amount of eggs 6 grams. Infants are likely to receive even smaller portions, if any (Guthrie, 1964). Bantegue and Sumagni (1966) report that compared with recommended daily allowances, the supply of protein in the Philippines is 48.9% adequate.

Carabao (water buffalo) is the leading source of meat and the principle beast of burden on Philippine farms. There is a strong demand for carabao meat since it is about 1/2 the price of beef. Calub (1970) shows that consumer panelists scored carabao slightly superior to beef in terms of flavor and juiciness but considered beef slightly superior to carabao meat in tenderness and overall desirability.

In some areas meat is rarely used, reflecting eating patterns of the area where meat is used only for special occasions such as weddings, fiestas, and funerals, and even then it is allocated to the adults, with infants the least likely to share it.

Thirdly, carbohydrates make up about 75% of the diet in many parts of the Philippines. Of this, a great deal is rice. Estimates are, in fact, that rice makes up 2/3 of the total diet. A study shows that a mere 10 percent of the total population used enriched rice regularly; another 9 percent used it occasionally; 45 percent had not even heard of it; and 28 percent had heard of it but did not use it (Guthrie, 1964). Furthermore, it is customary to wash the rice several times before cooking. This further depletes the nutrient value.

Highly polished rice, the kind exclusively used in many parts of the Philippines, loses almost all of its vitamin B during processing. Without a national marketing mechanism, it is unlikely that people will ever realize the advantages of enriched rice, because individual producers have neither the inclination nor the facilities to carry out the process of enrichment. Cultural acceptance is also critical to introducing enriched rice into the Filipino diet. Habits such as washing the rice (which depletes the nutrient value) and regarding brown rice as a lower class food (brown rice, if not washed, is highest in nutrients of any strain except enriched rice) are two such obstacles that must be overcome. Beriberi is one of the disease consequences of an inadequate diet. The lack of vitamin B1 in the Filipino diet is responsible for beriberi, a major contributing cause of death in the Philippines.

Directly related to the low caloric intake of the average Filipino is the fact that about 85% of the population suffers from intestinal parasitism. It is obvious that not even the present inadequate food supply can be used by a person if he suffers from intestinal parasitism. The portion of the nutrition actually used by a person in the Philippines must, therefore, be considerably less than a subsistence level.

Deficiencies in the following nutrients also exist to a greater or lesser degree, according to locality: vitamin A, riboflavin, ascorbic acid, and iron.

Dietary Variances Associated with Socioeconomic Conditions

It appears that dietary deficiencies are directly related to economic status. A study by Quiogue (1970) confirms (by analysis of the important indicators of quality of diet in relation to household incomes) that an inverse relationship exists between income and the proportion of cereals and starchy roots and sugar in the diet. As stated earlier, the amount of rice in the average Filipino diet is already excessive, and the less money a family has, the more rice (probably polished rice) it consumes. Guthrie (1964) found that the level of education of the parents was not reflected in the adequacy of nutritional practices, with many of the less desirable practices being found in infants of the more highly educated parents. The low level of nutrition is therefore primarily limited to buying power.

In an evaluation of the protein and other nutrient intake of 200 pre-school children in Metropolitan Manila (Alejo, Peralta, and Pascual, 1962), the authors found that based on recommended daily allowances for Filipinos, the protein intake was inadequate in the lower income groups, nearly adequate in the middle income groups, and adequate in the high income groups. Compare these results with those of a nutrition survey of the Southern Tagalog region (Matawaram, Bulatao-Jayme, Piedad, Gervasio, and Moran, 1965), which showed signs suggestive of vitamin A deficiencies to be most common, followed by riboflavin, niacin, ascorbic acid, iodine, thiamine, and vitamin D deficiencies and notice that no economic breakdown is included in the latter survey because, in fact, all the people are in a lower income group, even though some may be well-educated.

In developing countries, high infant mortality rates have been associated with the following factors: failure to breast feed, early weaning of infants to starchy gruels, and failure to supplement the diet after six months of age (when breast milk is no longer adequate to support a normal growth rate), and environmental hazards (especially the lack of safe water).

Data collected in four communities at varying distances from the urban center of Manila reveal surprisingly few significant differences in maternal and infant feeding practices among them. (Guthrie, 1969) The diets of lactating mothers fall below established nutritional standards, with calcium, vitamin A, and vitamin C being their most obvious needs. The almost universal use of polished rice also suggests suboptimal intakes of riboflavin and thiamine (vitamin B1).

Therefore, one of the apparent dysfunctions of the rapid urbanization and modernization of the Philippines is exhibited in the weaning of children. As mothers migrate to more urban environments, they adopt the attitudes of urbanization. They believe that early weaning is socially desirable, and for some mothers early weaning is imperative because they themselves have jobs. Early weaning is desirable, though, only for higher income groups, because they are the only ones who can supply sufficient nutrition for the child once he is weaned. As one moves farther from Manila, the tendency is increasingly to wean later (up to 18 months), and the reason given for this is almost always economic; the women can more easily breast-feed the child than they can provide an adequate substitute for the breast milk. Urban mothers, however, wean the child even though they have no sufficient source of nutrition. Furthermore, early weaning may complicate the high birth rate.

Disease Patterns

Beriberi is the main nutritional and disease-associated problem in the Philippines. Although there are hazards in comparing statistics, in 1961, 70% of the deaths in the Philippines were from various infectious diseases, while the comparable figure for the United States for the same year was 6%, or 11 times that of the U.S. The death rate in the 1 to 4 year age group which the WHO suggested as an index of nutritional status (1963) was 9.4 per 1000 population while that of the U.S. was 1.1, or about 9 times more. These figures indicate a close relationship between infection and nutrition. (Bulatao-Jayme, 1963)

In an examination of nutrition in four Tagalog communities, Guthrie (1969) found that the birth and death rates for each municipality showed a birth rate ranging from 35 to 52 per 1000 population and a mortality rate of the first five years of 107 to 163 per 1000 live

births. The death rate is sufficiently high to suggest malnutrition. Although most deaths were attributed to infectious conditions such as bronchitis, pneumonia, and measles, malnutrition and beriberi were mentioned occasionally. Since there was often no medical doctor in attendance, the reliability of the data on cause of death was questioned even by those responsible for keeping records.

Airoso (1966) found a slightly higher number of illnesses per child among working mothers compared with non-working mothers, a finding that underlines the effect upon nutrition of urbanization.

The malnutrition score by weight standard (Bulatao-Jayme, 1965) showed that 23.9% of children 1-3 years of age, 13.4% of pre-school children 4-6 years of age, 17.8% of infants 6-11 months of age, and 16.7% of children 7-9 years of age are malnourished. Mundo (1969) cites preventable infections and malnutrition as the leading causes of infant mortality. By associating these two studies, the number of children who would not have contracted an infection had they been well-nourished might indicate that malnutrition is actually the greatest factor in infant mortality.

Medical care given to the Philippine population is also inadequate. In his survey of infant and maternal nutrition in four Tagalog communities, Guthrie (1969) found that 42% of the babies had never been seen by a doctor. Forty-nine percent of infants had been seen when sick, and only 8% had had at least one routine check-up. Guthrie also estimated that a physician had attended only 15% of the births in the communities.

Likewise with advice as to the feeding practices of infants, Guthrie (1964) found that the extent to which mothers had only the advice of relatives and friends or had no advice at all varied from 86% in the barrio to 17% in the middle class urban area. There are a number of reasons for the lack of medical attention. Mundo cites some of these factors (Philippine Journal of Pediatrics, 1969). First, the Philippine archipelago appears to have been "chopped up" into 7,107 islands. The lack of good roads makes inland transportation difficult in most rural areas. Second, the level of income of about 70% of the population is so low that they can hardly provide for their basic needs. Third, as of 1966, the estimated population was 33,477,000 of which 48.74% were below 15 years of age, showing a high dependency load or burden for the active Filipino worker. Fourth, there are over 15 million children and only 500 pediatricians. Fifth, the rural health service does not reach every corner of the archipelago. There are only 1,434 rural health units under the Department of Health and 624 semi-private active Puericulture Centers.

Assistance Programs

In its publication, A Survey of Foreign Economic and Technical Assistance Programs in the Philippines (1965-66), the Agency for International Development describes and lists the seven sources of assistance projects that are active in the Philippines. The sources are: United Nations Agencies, Bilateral Assistance Agencies, United States Technical and Economic Assistance programs in the Philippines, Regional Cooperative Groups, Financial Institutions, U.S. Voluntary Agencies, and Private Agencies and Organizations. Many of the programs have a nutritional element.

During the last three years, the Philippine Department of Health, with assistance from the United States Agency for International Development (USAID), has implemented a comprehensive national nutrition program with targets of infants and children to age 6 years, and pregnant and lactating mothers. The program has major long term objectives of (1) establishing nutrition education as a component of public health and (2) eradicating malnutrition from the pre-school population.

The rehabilitation or child feeding component is primarily to show the mothers, the community, and others interested in the problem that most cases of malnutrition will respond readily to correct feeding. There are now 32 primary mothercraft Nutrition Demonstration Centers operated by the Department of Health. These are considered as extensions of the Rural Health Units that comprise the health services outreach into the predominantly rural population of the Philippines. The 1,434 rural health units may serve as an adequate base upon

which to build a nutrition service. However these centers cannot deal with the primary economic problems nor the effect of urbanization.

Conclusions

In light of the apparent nutritional needs of the Philippine population, establishing a policy that relates nutrition, agricultural production, and health through a reliable and adequate marketing system to encourage production may be in order. Also, since it is presently not feasible or practical to cure intestinal parasitism, it is advisable to encourage programs of prevention through eradication of infectious areas and the proper disposal of human waste, thereby decreasing the food value lost to parasites. Finally, considering the relatively negative impact that urbanization has upon nutrition, it seems reasonable to encourage rural development or the development of non-urban, semi-industrial communities that would offer many of the advantages of urban dwelling without the attendant lower nutritional status and dietary habits.

THE FOUR-YEAR ECONOMIC DEVELOPMENT PLAN

The document, Major Development Projects identifies those projects requiring external assistance financing and that are contained in the Four-Year Development Plan. It is produced by the Government of the Philippines to show its concern with coordinating appropriate planning and development projects.

The Four-Year Development Plan, covering Fiscal Years 1971-1974, provides a set of coordinated policies and development strategies for achieving the general economic goals of effecting maximum growth consistent with stability and a more equitable distribution of income and wealth.

The basic target of the plan is a gross national product (GNP) of P36,300 million (in constant 1967 prices) by FY 1974, from P27,783 million during 1969. The anticipated growth rate for FY 1970 and FY 1971 are 5 and 4.5 percent, respectively. After FY 1971, the rate is expected to reach 6.5 percent by 1974. The Plan's estimates of an annual growth rate averaging 5.5 percent for 1971-74 represents a real per capita income growth of about 2 percent per year because of the reported population growth.

Agriculture

In agriculture, the goals include: the increased production of cereals and plant and animal protein; the expanded production of rural agricultural products for domestic use and exports; and a much wider implementation of the land reform program throughout the country by FY 1974. All of these goals are consistent with the recommendations that have been drawn from this study. The overall desire is to increase agricultural output by 6.23 percent annually, maintaining the sector's approximately 34 percent share of the net domestic product.

Industry

In industrial activity, the growth rate of production in manufacturing and mining is to average 6.25 percent and 18.5 percent, respectively. Approximately P8.114 million or 30 percent of the total gross fixed capital formation, in constant 1967 prices, will be required to achieve these goals over the four-year period.

The other major development areas which will receive government support include transportation, mainly for the construction of roads and bridges; water resource development, inclusive of power and irrigation; education; housing; health; and other social services.

The Major Development Projects fall into two categories: those which take place in the Public Sector, and those which take place in the relatively smaller Private Sector.

Public Sector Projects \$184.68 Million and P5.49 Billion (in 1970 prices)

The projects in the Public sector cover several general areas, such as agriculture, education, infrastructure, and industry. Some of the most important infrastructures requiring external finance are water resources, transportation, power and electrification, telecommunications, and some special regional authority projects. Water resources infrastructure covers irrigation, water supply, and flood control. Transportation refers to highways, railways, airports, and seaports. Some authority projects are the Laguna de Bay Hydraulic Control Structure, Water Supply Plant, and West Bay Industrial Estate Projects. In general, these infrastructure activities are designed to take full advantage of the interdependence among individual sectors in industry and agriculture.

* Parts of this section are taken from Major Development Projects, Republic of the Philippines, 1971, pp. 1-5.

Feasibility studies for most of these projects have been conducted either by the United Nations Development Program (UNDP), the United States Agency for International Development (USAID), the World Bank, or the Asian Development Bank. A number have been accomplished through the auspices of other bilateral assistance programs, such as those covered by the Colombo Plan.

The Private Sector \$0.5 Billion and P2.15 Billion (in 1970 prices)

In the Private sector, projects are geared to the Fourth Investment Plan and the Second Export Priorities Plan. The Investment Priorities Plan (IPP) is a catalogue of various investment activities considered desirable from the viewpoint of sustaining rapid economic growth and development. These industrial undertakings are those which are to be carried out principally by the Private sector.

Such coordination is important because projects are planned in such a way that they are directed towards pioneer or preferred areas, or in general, towards areas of the highest priority. Thus, private industrial projects are made to fit properly in the overall public development program, and vice-versa. The effects of this coordination will not only be in terms of the incentives that the infrastructure projects will provide to the specific industrial activities, but also in terms of their implications for a more balanced regional development.

Discussion

Specific examples can be pinpointed to show that planners recognize the interrelationships among various projects. For instance, the upper Pampanga River Project is tied to the agricultural development of central Luzon, which happens to be a major area of social discontent.

The logic of such linkages is the rationale that land reform alone will not be able to provide adequate comfort to agrarian unrest unless the land productivity via agricultural infrastructure is enhanced. Thus, it is expected that the construction of irrigation systems, such as the Magat Multi-Purpose Project in Isabela, the Balog-Balog Project in Tarlac, and the Balington Project in Nueva Ecija, will serve more than one purpose. To further support these projects, transportation infrastructure is being pushed. Improved roads, bridges, ports, and airports will eventually develop more effective marketing and distribution channels, at the same time lowering substantial private overhead costs. The ultimate effect is a higher velocity of internal commerce.

Examples such as the one above show that the Government of the Philippines has employed appropriate planning machinery, and the overall impression is of a government deeply involved in synergistic plans and policies that show a sufficient amount of coordination and interrelation. It appears that the Government of the Philippines has defined priorities and has planned on a realistic time scale (their plans range generally from 5 to 10 years). What they have done is a difficult task and a good example of inter-sectoral planning. It is also a necessary process that is rarely done. As of now, they are at the beginning of their projects, and certain funding and implementation details have either not been finalized or depend upon other projected accomplishments for their finalization. This cannot be avoided, yet it is still to be regarded with care. The Philippines has defined a difficult and enthusiastic path of development, and there are understandably parameters that have yet to be accounted for.

As indicated in the section on the Philippine economy, however, the Philippine Government's success at implementing development projects in the past has been less than sterling. Failures of previous development plans have been attributed to such things as failure to raise money through taxation, the low rate of savings by the people and by the government, the low level of coordination between projects, the general apathy of the people, and a political system whose priorities favor local (pork-barrel) expenditures or no expenditure at all. If present figures are to be believed, the results from the first year of the new Philippine development projects are more successful than forecasted. If this is the case, then it may be the beginning of a new era in agricultural and industrial advancement, this time with the emphasis on the public sector rather than on the private sector.

On the other hand, Major Development Projects for the Philippines may merely indicate that although plans have been constructed and coordinated by able and imaginative planners, their plans may fall victim to a political and social system that denies their success.

Commentary

Nutrition and environmental sanitation are the two areas where improvement would have the greatest, most dramatic effect on the health of the Philippine people.

There is no question that increasing the nutritional intake of the population is of high priority to the Philippine government. The new high-yielding seed varieties, fertilizers, and other technology have proved themselves capable of increasing output and points to self-sufficiency in food production in the future. The government is eager to keep up this initial momentum as the country devotes itself to the "Green Revolution."

In this next stage of agricultural development, the goals are specific and well-planned: expansion and diversification of output; increasing efficiency of distribution and marketing, which includes the by-product of some price stability for the farmer and consumer; and improvement of yield per acre to lower the unit cost, which improves the competitive position of Philippine products on the world market.

Most encouraging are the prospects for protein output by the development of livestock and fish production. The stated objectives for the short run are to maximize livestock production by emphasizing fast-multiplying animals like poultry and swine and to increase fish output to self-sufficiency levels. The long-run objectives are to improve the quality of livestock in order to maintain accelerated production and to develop infrastructures such as fish terminal markets, processing and storage plants, cooperative associations to cut costs, and government-supported research into the industry's potential.

To reduce the current need for importation of feed grains, the government will encourage the production of corn, sorghum, and soybeans as a basis for livestock feed. The Plan also notes the benefit for small-scale factories producing protein-rich by-products of these crops.

The long chapter on Agriculture (the first chapter under "Sectoral Programs") elaborates the different priorities and establishes coordinated goals for interrelated activities within the agricultural sector. Detailed plans for specific projects are noted, and a series of numerical tables show the exact targets for the current and projected fiscal years.

This detailed structure is conspicuously absent in Chapter VI, "Water Supply and Sewerage" (which is three pages long rather than twenty-eight). The situation is described candidly. At the end of FY 1969, only about 16.7 million people (or about 4% of the population) had access to adequate and clean water. Even the largest and most expensive waterworks system, the Manila and Suburbs Waterworks, was inadequate, serving inefficiently only 3 million people (see chapter on Living Conditions). The Interim Construction Program of NAWASA (National Waterworks and Sewerage Authority) failed to remedy this inadequacy by 1970, as planned. The Program began in 1964, to be completed in 1968. In 1970 it was still unfinished. In 1970, the second phase was to have begun in order to plan and maintain long-range construction to meet the increasing demand on the water system during the next decade. Because of the delay in the Interim Construction Program, it is assumed that the Manila and Suburbs Waterworks System will again lag in meeting the demand. Long-range construction will probably begin in FY 1972, assuming that planning is completed in FY 1971.

Outside of Metropolitan Manila, only about 3 million people will gain access to potable water by FY 1974 under the Plan. Projected numbers of people who will benefit from potable water in Metropolitan Manila were not cited.

The only sewerage system cited in the Plan is that for Manila and its suburbs. Construction of a sewerage system will proceed under a master plan (prepared with the technical and financial assistance of the UNDP) involving a 10-year phased construction program. The

Plan also mentions the need for flood control and drainage in conjunction with sewerage systems. Although flood damage is a recurrent problem, no specific course of action is mentioned.

In a supplement to the Four-Year Development Plan, Major Development Projects (1971), a USAID loan for the development of a comprehensive national plan for water and sewerage systems is described.

"A USAID loan has been secured for scale which will result in a format for the purpose of conducting a study for the formulations and initiation of a plan on a nationwide scale which will result in a guideline format for a strongly managed, efficient, locally controlled water and sewerage system throughout the country. Six local waterworks systems have been selected. When completed, this study will provide the basic guidelines in programming for local systems. This sector is presented in more detail in the presentation of the Power and Electrification Phase." The writers of this study are sufficiently confused as to what this means.

Two tentative conclusions can be drawn: When the Government speaks of waterworks, they have specific plans in mind for the control of water resources to irrigate, to produce electricity, to reduce floods, and to service industry. The fact that only 4% of the population have access to potable water and even fewer to sanitary conditions produced by adequate sewage disposal is a widely admitted crisis. That a crisis is proclaimed by both politicians and people does not mean that they see the crisis or its solution in concrete terms. Proclaiming a growing crisis when individuals do not actually observe specific degrees of deterioration may actually lead to a feeling of safety from impending doom. It can't, after all, be that bad. When knowledge about health is lacking, some diseases are accepted as the norm and others as a matter of fate. Obviously, many people survive even though they drink water that has been described as deadly.

The second hypothesis is that the government is reluctant to carry out any long-range, expensive, and thankless project; the government is accurately responding to the desires of the Philippine people in its reluctance. Studies indicate that the people elect their representatives primarily on the basis of honesty and personal qualifications, and on the basis of help given and promised to their region in the form of services and public-works projects. Legislators are aware of the vote-getting power of the pork-barrel patronage. They are beholden to local politicians who in turn have promised the delivery of services to the people whose votes he has collected for the national candidate.

The working relationship between all these factions explains why politicians are vague about the specific projects they support when talking about national problems. They do not see themselves lobbying for the implementation of national economic policies, and they do not need to become experts on technical issues. It seems inevitable that a politician would favor the realization of a short-term, conspicuous, local project that would be readily attributed to him rather than an elaborate project that might never succeed and might mean the sacrifice of regional advantage to the national good. There has not emerged in significant numbers among Philippine voters a "modern" voter: one who is dedicated to nationalism, technological change, and the development and use of capital to promote far-reaching national development. This modern voter, if he is to effect change, will have to give up the idea of "pork" for everybody in favor of allocating limited capital to selected priorities.

SOURCES OF AID TO THE PHILIPPINES

There are a number of economic and other inputs into the Philippines. The Agency for International Development represents only a small part of the overall picture of assistance programs. USAID makes this clear in A SURVEY OF FOREIGN ECONOMIC AND TECHNICAL ASSISTANCE PROGRAMS IN THE PHILIPPINES.

In this compilation, USAID divides its data into seven categories. Each category is responsive in a manner unique to its economic or social base.

1. The United Nations programs, for example, are interested primarily in surveying present resources and upgrading the techniques by which those resources can best be taken advantage of.
2. The countries involved in Bilateral Assistance Programs (Australia, Canada, France, Germany, Japan, Italy, and the Netherlands) customarily offer training for Filipinos. This training takes the form of exchange programs, scholarships, and the funding of fundamental education.
3. The plans that fall under the interests of U.S. Technical and Economic Assistance (these include AID, The Peace Corps, United States Education Foundation in the Philippines, and the Export-Import Bank of Washington) are usually of a developmental nature. Included are the development of industry, resources (both human and natural), rural development, and public service improvement.
4. The Regional and Cooperative groups involved in the Philippines (Asian Productivity Organization, the Colombo Plan, and the Southeast Asian Treaty Organization) are basically interested in the inter-governmental organization of Asian countries and cooperative economic development.
5. The Financial Institutions (the World Bank and the International Monetary Fund) are interested in financing productive investments and promoting international stability by financing its members.
6. The U.S. Voluntary Agencies concern themselves primarily with grassroots programs of community development, relief, self-help, health, and education.
7. Many of the Private Agencies and Organization are religious and therefore promote their sect along with education, medical care, and agricultural aid.

A Crisis in Ambiguity: Political and Economic Development in the Philippines, by the RAND Corporation

The image of a country in deep economic trouble being harassed by the threat of political upheaval is dispelled by the RAND Corporation's investigation. The Philippines has undeniable problems: economic irregularity, unemployment, dissidence, and crime; but, if we are to credit the RAND study with valid testing techniques, the dimensions of these problems have been distorted by the ineffectiveness of information systems within the country. According to RAND, policy makers in the Philippines do not lack the political framework within which to construct meaningful programs, but rather lack the information that is necessary to develop such programs. Inadequate reporting systems, linked with the undeniable tendency of politicians to maintain the status quo (most voter response shows that Filipinos are satisfied with the government as it is) produce a climate that is not conducive to innovation or even to change. The climate for change is further polluted by the pork-barrel orientation of political activity and the attention of politicians to constituency demands that supersede more efficient, long-term planning.

Ironically, most Filipinos feel that their government is a positive force in their lives and that their lives can be changed for the good through government programs. Considering the

relatively unimpressive history of government programs, the Philippine people remain optimistic, and, given the opportunity, might react in a dramatic manner to relevant, well-planned government programs.

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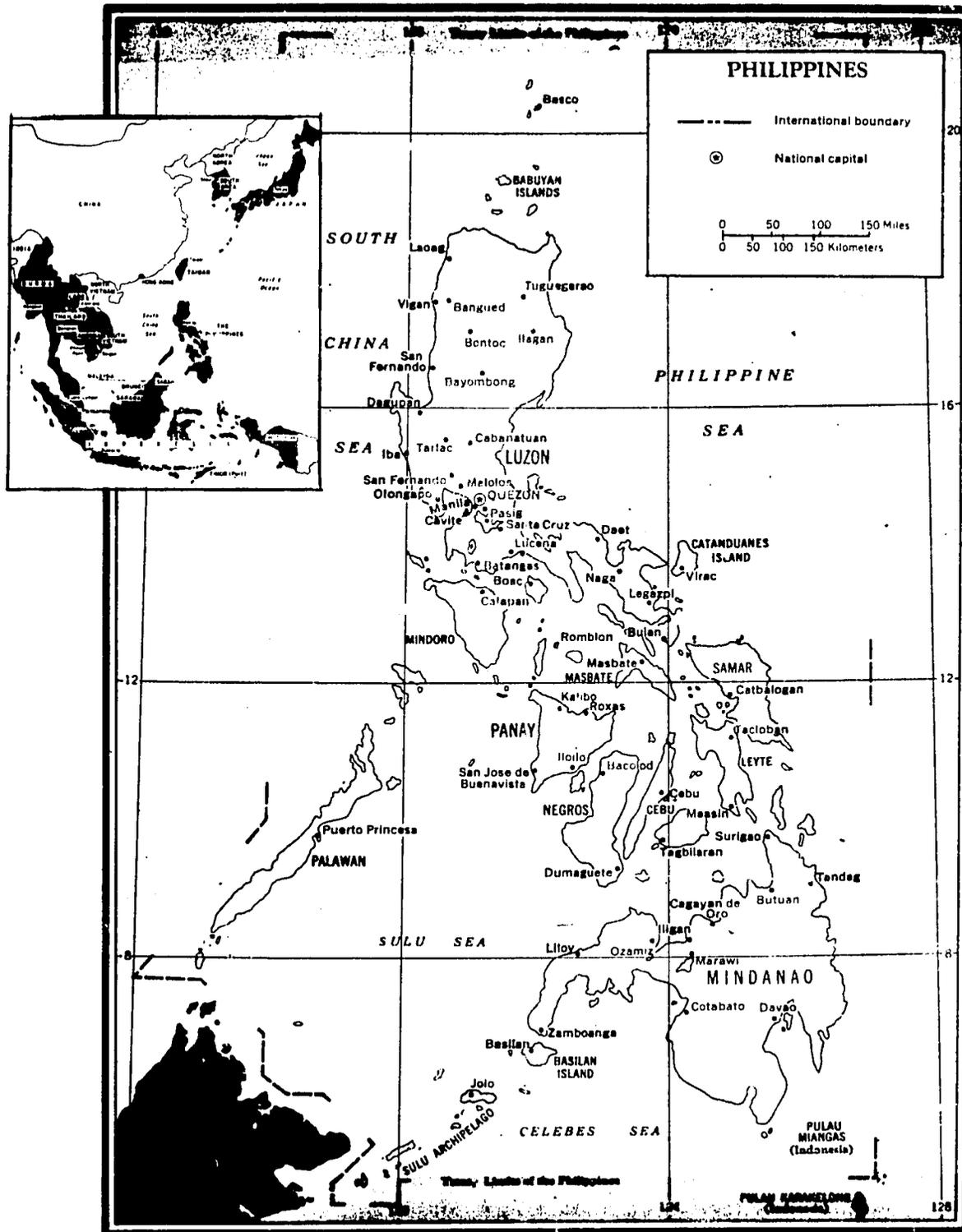
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TABLES

Table 1

MAP OF THE PHILIPPINES



STRUCTURE OF EMPLOYMENT AND PER CAPITA INCOME OF SELECTED COUNTRIES, 1969
 U.S. DOLLARS
 (Thousands)

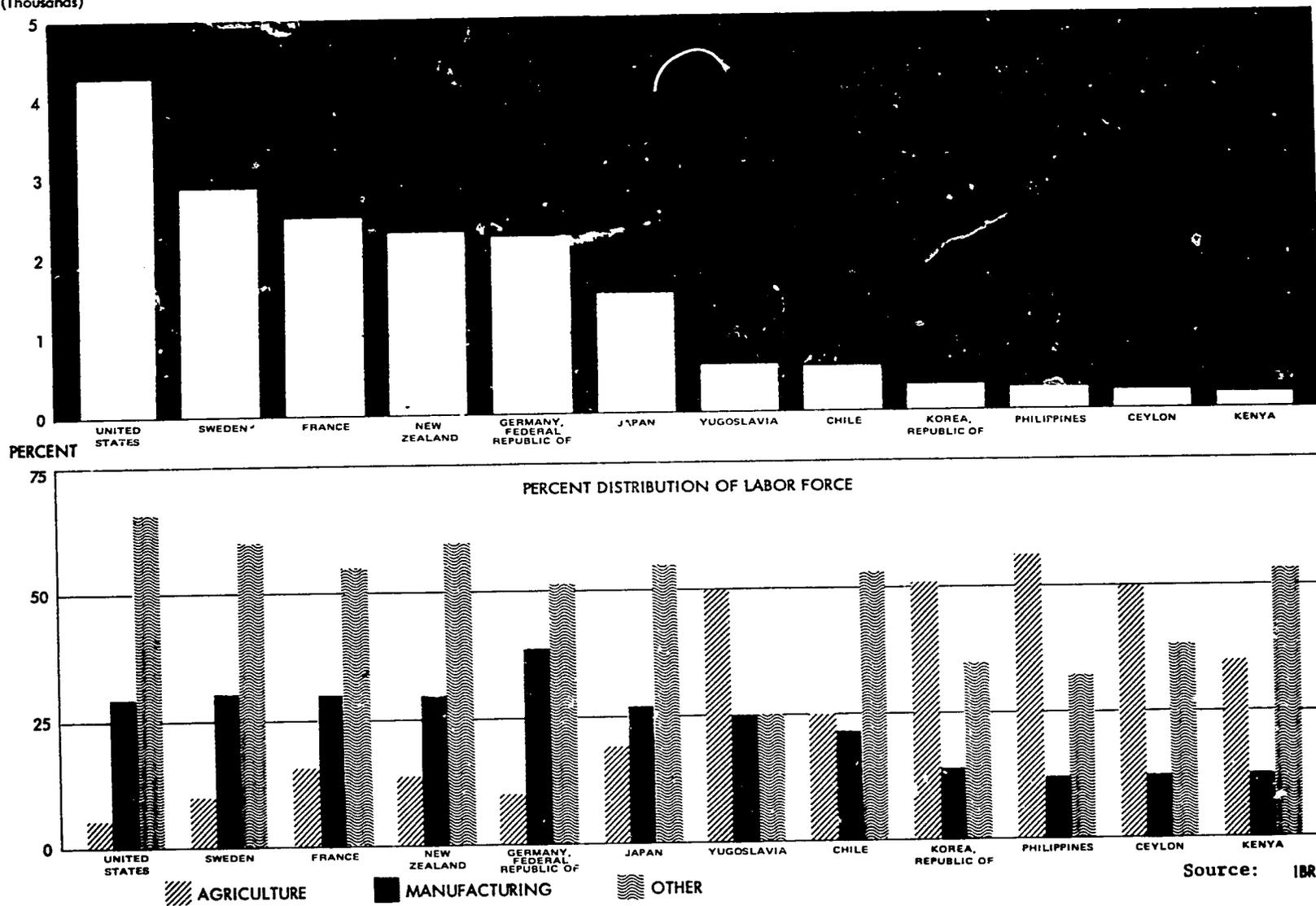
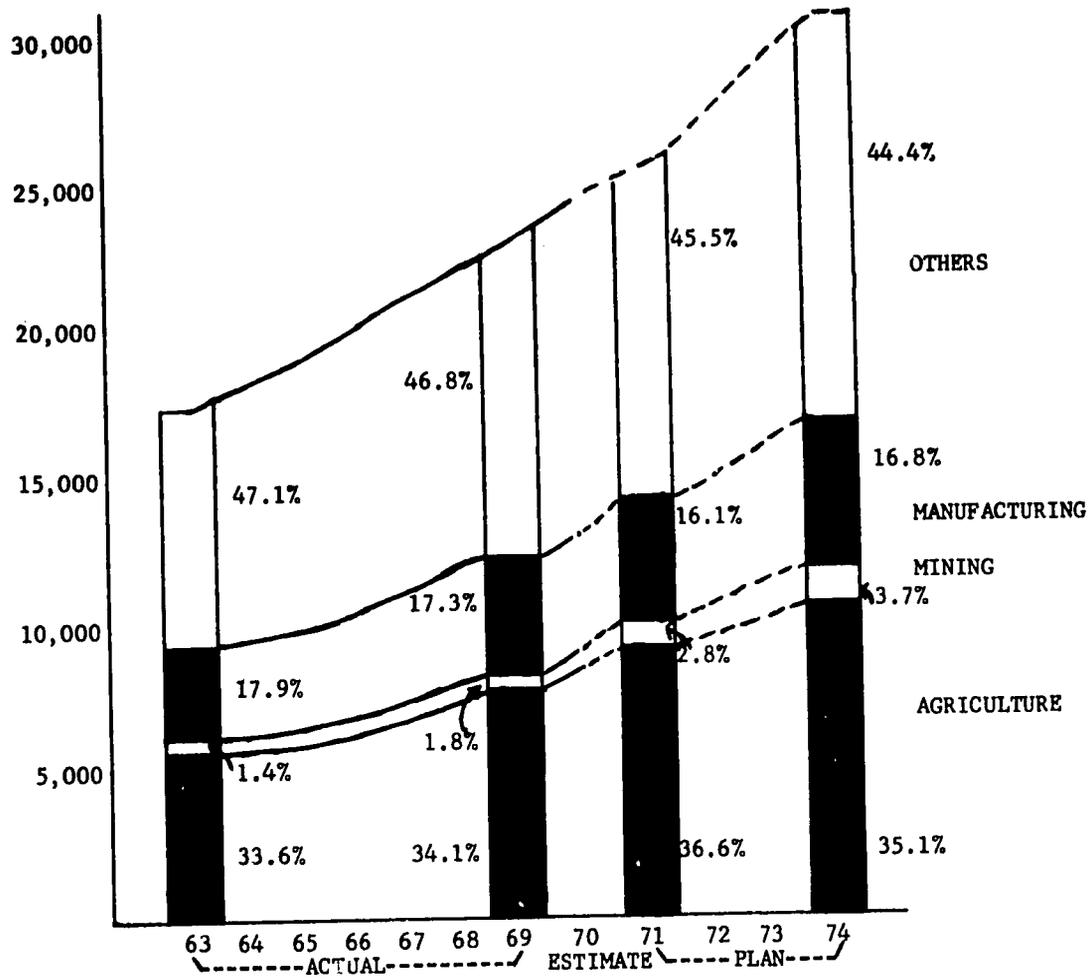


Table 3

NET DOMESTIC PRODUCT BY SECTOR ORIGIN
IN MILLION PESOS AT FY 1967 PRICES
AND PERCENTAGE CONTRIBUTION



Source: Four-Year Development Plan
FY 1971-1974

SELECTED ECONOMIC TRENDS

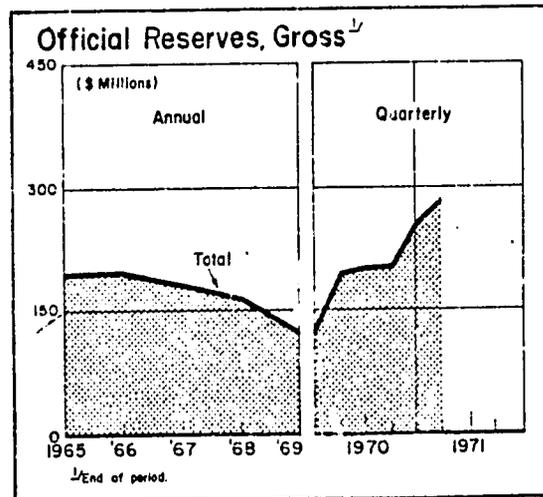
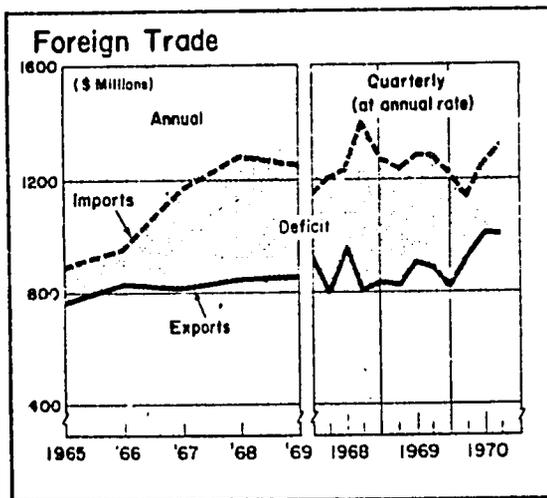
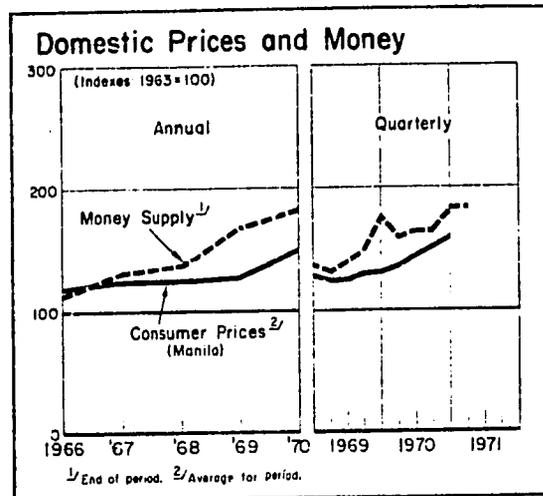
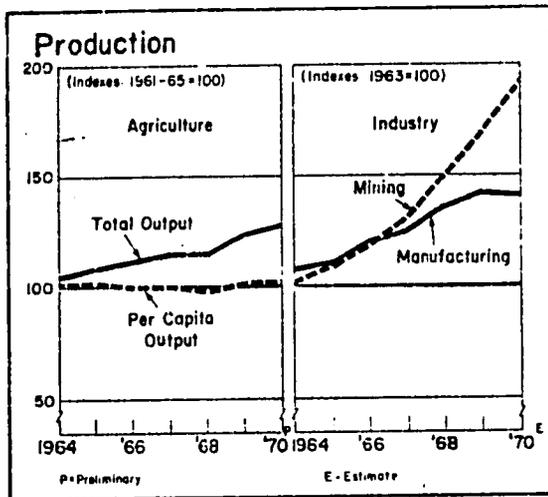
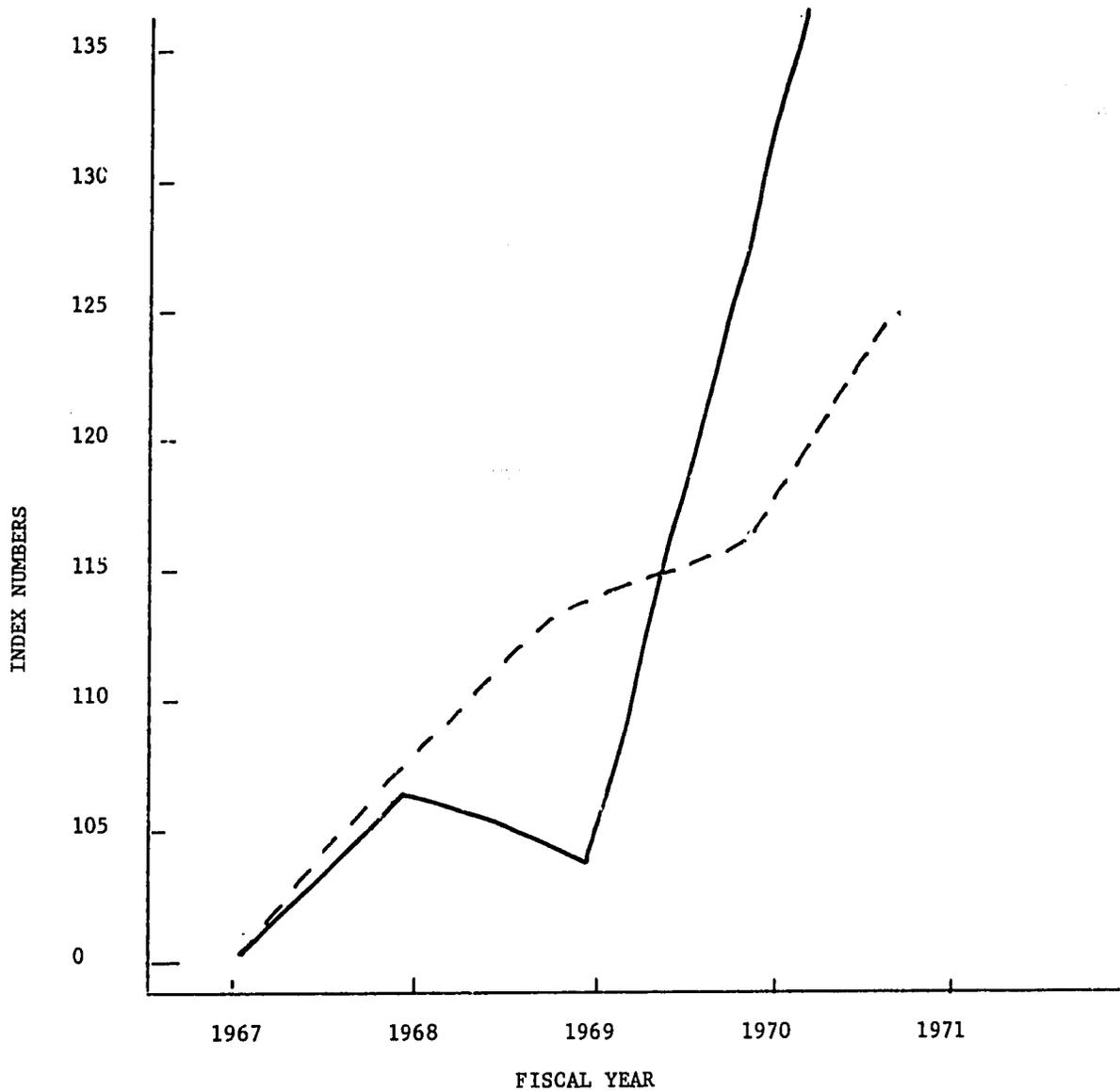


Table 5

CONSUMER PRICE INDEXES IN THE PHILIPPINES (FY 1967=100) AND PER PUPIL COST INDEXES IN PUBLIC ELEMENTARY SCHOOLS (FY 1967=100) 1966-67 to 1970-71



Legend:

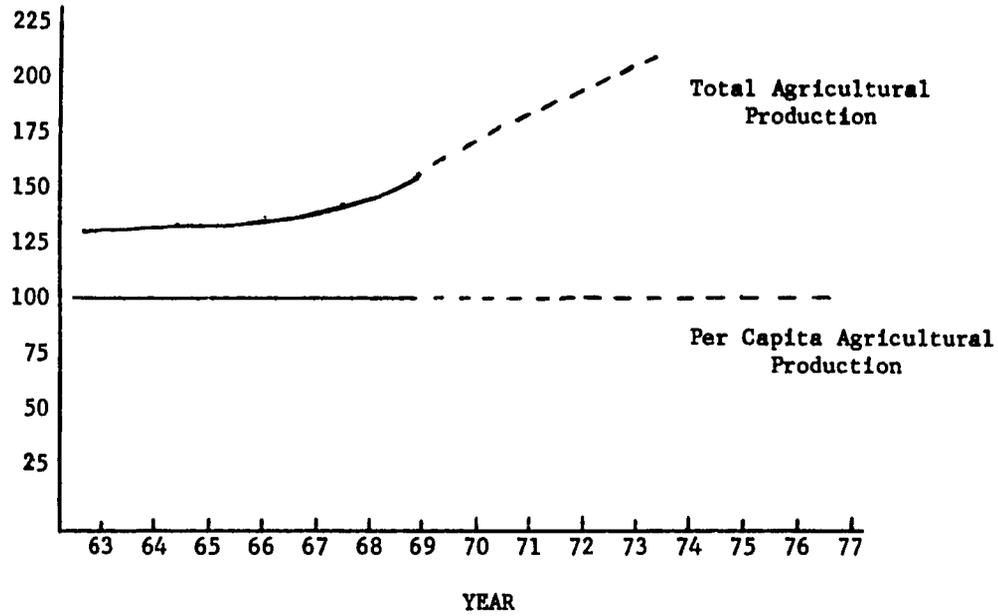
— Consumer Price Index
- - - Per Pupil Cost Index

Source: The Fookien Times Yearbook, 1971

Table 6

FAO COMPARISON OF TOTAL AGRICULTURAL PRODUCTION
WITH PER CAPITA AGRICULTURAL PRODUCTION
PHILIPPINES

INDICES



Base 1952-1966=100

Source:
FAO Production Yearbook, 1970

Table 7

SELECTED ANNUAL TRENDS

†	ITEM	UNIT	1960	1967	1968	1969	1970	1971
1	A. POPULATION (Mid-year) Annual Growth: 3.4% Percent Urban: 34%	Thousands	27,410	34,656	35,883	37,158	38,420	39,730
2	PRODUCTION							
	B. AGRICULTURE^a							
	1. Total production index	1961-65=100	87	111	115	124	131	140 ^P
	2. Per capita production index	"	98	97	97	101	103	107 ^P
	3. Sugarcane	1,000 MT	12,830	15,280	15,510	16,450	21,440	23,760 ^P
	4. Rice, rough	"	3,700	4,170	4,440	5,230	5,340	5,440 ^P
	5. Copra	"	1,080	1,430	1,380	1,200	1,340	1,750 ^P
	6. Corn, shelled	"	1,210	1,440	1,730	2,010	2,000	2,010 ^P
1,6	C. INDUSTRY/MINING							
	1. Manufacturing production index ...	1963=100	83	125	137	142	142	146 (3 mos)
	2. Cement	1,000 MT	800	1,710	2,560	2,950	2,450	1,517 (6 mos)
7	3. Mining, index	1963=100	91	131	150	169	196	229 (9 mos)
	4. Coal	1,000 MT	150	70	32	69	48	
	5. Iron ore (metal content)	"	640	940	830	940	1,070	640 (6 mos)
	6. Copper (metal content)	"	44	86	110	131	160	92
3	D. FORESTRY/FISHERIES							
	1. Fish catch	1,000 MT	470	770	940	980		
	2. Roundwood production	Mill.cu.mtr	6.2	10.3	11.4	12.0		
3,4	E. ELECTRICITY							
	1. Total production	Million KWH	2,730	6,250	7,000	7,700		
	2. Per capita production	FWH	100	180	200	210		
5	F. GROSS NATIONAL PRODUCT **							
	1. Total GNP, current prices	Bill. pesos	n.a.	n.a.	30.0	33.1	39.9	48.1
	2. Total GNP, current prices	Million US\$			7,683	8,483	10,230	12,340
	3. Total GNP, 1970 dollars	"	5,801	8,561	9,091	9,739	10,230	10,890
	4. Plus imports of goods and services	"	787	1,433	1,551	1,512	1,489	
	5. Minus exports of goods and services	"	643	1,222	1,166	1,123	1,340	
	6. Equals total available resources	"	5,945	8,772	9,476	10,128	10,379	
	7. Private consumption	"	4,577	6,066	6,631	7,100	7,485	
	8. Gov't consumption (incl.defense)	"	454	736	824	990	807	920
	9. Gross fixed investment	"	826	1,867	1,903	1,976	1,903	2,080
	10. Change in stocks	"	88	103	113	162	122	190
	11. Change in total GNP, 1970 dollars	Percent		+6.0%	+6.2%	+7.1%	+5.0%	+6.5%
	12. GNP per capita, 1970 dollars	Dollars	212	247	253	262	266	274
	DOMESTIC FINANCIAL DATA							
	G. PRICE INDEXES							
6	1. Wholesale prices: Manila	197=100	83	117	120	121	145	167
6	2. Consumer prices: Manila	"	68	125	125	127	149	177
7	3. Consumer prices: Philippines	"	86	125	126	128	148	174 (9 mos)
6	H. MONEY SUPPLY INDEX^o							
	1963=100							
	I. CENTRAL GOVERNMENT FINANCES							
	- (Fiscal year ending June 30) -							
	1. Total revenues	Mill. pesos	2,630	2,895	3,258	3,746	4,719 ^E	
	2. Total expenditures	"	3,373	4,133	4,357	4,849	5,094 ^E	
	3. of which: Defense	"	(371)	(447)	(513)	(663)	(730)	
	4. Deficit (-) or surplus	"	-743	-1,238	-1,099	-1,103	-375	
	Method of Financing:							
	5. Domestic resources (net)	"	562	485	898	1,007	248	
	6. Foreign borrowing (net)	"	181	753	201	96	127	
9	J. EXTERNAL PUBLIC DEBT							
	1. Total outstanding as of Jan. 1 ^o ..	Million US\$		294.9	335.6	399.9	641.8	
	2. Annual payments	"		20.3	-	-	97.6	
	3. Amortization	"		(13.6)	-	-	(24.8)	

† - Numbers indicate basic sources listed on next page. n.a. or blank space = not available; a dash indicates zero.
P - Preliminary. E - Estimate. o - End of period. † - Based on disbursements; for coverage of data see General
Note on Debt in Regional Section. * - Less than one-half the unit shown. ** - Converted at 3.9 pesos per U.S. \$.
a - Bulk of crop harvested in year stated.

Table 8

SELECTED ANNUAL TRENDS (cont'd)

†	ITEM	UNIT	1960	1967	1968	1969	1970	1971
FOREIGN TRADE								
6	K. COMMODITY TRADE							
	1. Exports, f.o.b.	Million US\$	550	812	848	855	1,062	948 (11 mos)
	2. Imports, c.i.f.	"	-263	-1,172	-1,280	-1,254	-1,210	-1,200
	3. Trade balance	"	-103	-360	-432	-399	-148	-252
SELECTED TRADING PARTNERS								
7, 10	L. Exports to: 1. United States	Million US\$	268	351	383	344	440	351 (10 mos)
	(f.o.b.) 2. Japan	"	120	274	293	292	421	303
	3. Netherlands	"	45	43	39	30	44	44
	4. Communist bloc	"	3	*	-	-	-	-
7, 10	M. Imports from: 1. United States	"	257	402	415	358	347 ^E	248 (10 mos)
	(c.i.f.) 2. Japan	"	131	329	352	362	379 ^E	292
	3. Indonesia	"	19	25	26	30	29 ^E	24
	4. Communist bloc	"	1	-	-	-	-	-
6	H. MAJOR EXPORTS (f.o.b.)							
	1. Coconut products	Million US\$	178	215	236	163	192	212 (11 mos)
	2. Sugar	"	134	142	144	149	178	166
	3. Wood	"	92	177	216	226	221	168
7	O. MAJOR IMPORTS (f.o.b.)^a							
	1. Machinery and transp. equip.	Million US\$	217	406	443	444	401	266 (7 mos)
	2. Petroleum and products	"	60	94	106	107	119	78
	3. Cereal and preparations	"	25	85	41	38	33	25
	4. Dairy products	"	24	29	35	37	32	22
6	P. EXPORT PRICES							
	1. Copra	\$ per 100 lbs	8.17	7.34	8.82	7.86	7.53	6.97 (6 mos)
	2. Sugar (Manila)	"	5.31	6.60	6.78	6.89	5.93	6.30
6	Q. TERMS OF TRADE (Exp + Imp)	1963=100	114	97	103	102	103	90 (11 mos)
	1. Export price index	"	103	104	109	111	122	114
	2. Import price index	"	90	107	106	109	116	127
PAYMENTS & RESERVES								
11	R. BALANCE OF PAYMENTS (selected items)							
	1. Balance on goods and services ...	Million US\$	-144	-211	-320	-380 ^P	-149	-
	2. Private direct investment (net) ..	"	29	-9	-3	-6	-29	-
	3. Official grants (net) ^b	"	59	72	44	47 ^P	26	-
	4. Official loan receipts (net)	"	22	-42	35	14	19	-
6	S. OFFICIAL RESERVES, GROSS^c							
	1. Gold	Million US\$	127	180	161	121	251	197 ^F 1972 ^c
	2. SDR ^a	"	15	60	62	45	56	332 432 (Feb)
	3. IMF gold tranche position	"	7	-	-	-	-	73 74
	4. Foreign exchange	"	105	119	100	76	195	- 18
6, 7	T. OTHER OFFICIAL FOREIGN ASSETS, GROSS^d	Million US\$						309 340
	U. COMMERCIAL BANK FOREIGN ASSETS, GROSS^e	"	76	146	152	135	128	148
	V. CENTRAL BANK LIABILITIES^f	"						
7	X. COMMERCIAL BANK LIABILITIES^g	"	4	104	118	130	142	280
6	Y. EXCHANGE RATE (official)^h							
	1. IMF par value	Pesos/US \$	2.00	3.90	3.90	3.90	3.90	3.90

† BASIC SOURCES:

- UN "Monthly Bulletin of Statistics."
- USDA Economic Research Services (ERS) special calculations.
- UN "Statistical Yearbook."
- UN "World Energy Supplies" and A.I.D./W estimates.
- Based on national data adjusted by US Embassy and A.I.D./W.
- IMF "International Financial Statistics."
- Central Bank "News Digest," "Statistical Bulletin" and "Philippine Financial Statistics."
- Based on US AID replies to A.I.D. Form 10-74 as adjusted by PPC/SR.
- IBRD.
- IMF/IBRD "Direction of Trade."
- Tables on pages 11 & 12; data based on IMF reports.

n.s. or blank space = not available; a dash indicates zero. * - End of period. E - Estimate. P - Preliminary.
^a - Less than one-half the unit shown. ^a - Total imports, f.o.b. (million dollars): 1960, \$604; 1967, \$1,062; 1968, \$1,150; 1969, \$1,132; 1970, \$1,090. ^b - Includes reparations from Japan. ^c - Beginning December 1971 gold is valued at \$38 an ounce and foreign exchange at realigned exchange rates.

Table 9

SUPPLEMENTARY ECONOMIC INDICATORS

1	SA. GROSS DOMESTIC PRODUCT, BY ACTIVITY^{a, b}				
	1. Agriculture, forestry, fishing	Unit Percent	1955 34.8	1960 31.4	1965 34.4
	2. Mining	"	1.4	1.1	1.8
	3. Manufacturing	"	15.8	18.6	17.3
	4. Construction	"	4.2	3.4	3.6
	5. Transport, communication, utilities	"	4.8	4.9	4.2
	6. Trade and finance	"	15.2	15.5	14.5
	7. Public administration, defense, other	"	23.8	25.1	24.2
a - See also GNP on page 5. b - Net Domestic Product.					
2	SB. LABOR FORCE (See also page 3 and Note below)				
	1. Percent of total population	Unit Percent	1955	1960	1965
	2. Female component	"		31.1	32.6
	3. Wage and salary earners	"		25.6	32.1
	<i>Sector of Employment:</i>				
	4. Agriculture	"	Not Available	27.2	34.8
	5. Mining	"		60.5	52.7
	6. Manufacturing	"		0.3	0.2
	7. Construction	"		9.8	10.6
	8. Transport	"		2.1	2.6
9. Other	"		2.4	3.2	
3	SC. DEMOGRAPHIC DATA (See also pages 3-5 and Note below)				
	<i>Population, by Age and Sex (1967):</i>				
	1. Total	Unit Percent	Total 100.0	Male 50.4	Female 49.6
	2. Less than 5 years	"	19.2	9.7	9.5
	3. 5-14 years	"	27.6	14.1	13.5
	4. 15-19 years	"	10.6	5.4	5.2
	5. 20-39 years	"	26.2	13.2	13.0
	6. 40-59 years	"	12.3	6.1	6.2
	7. 60 plus	"	4.1	1.9	2.2
	<i>Births and Deaths:</i>				
8. Infant mortality (under 1 year per 1,000 live births) ...	Unit Ratio			1969 83	
9. Birth rate (live births per 1,000 population)	"			45	
10. Death rate (per 1,000 population)	"			10	
5	SD. EDUCATION (See also page 4 and Note below)				
	1. Students	Unit 1,000	1955	1960	1965
	2. Primary	"			
	3. Secondary (general)	"	3,499	4,198	5,816
	4. Vocational	"	522	564	1,038
	5. Teacher-training	"	51	95	142
	6. Teachers	"	-	-	3
	7. Primary	"			
	8. Secondary (general)	"	92	117	185
	9. Vocational	"	20 ^a	22	31 ^a
	10. Teacher-training	"	a	3	"
	11. Student Enrollment Ratios	Percent	-	-	n.a.
	12. Primary as % of 5-14 Age Group	"	54	56	65
	13. Secondary as % of 15-19 Age Group	"	25	25	35
14. Primary & Secondary as % of 5-19 Age Group	"	46	47	57	
* - Secondary students include general, vocational and teacher-training. a - Vocational education included with secondary (general).					

n.a. - Data not available.

E - Estimate.

P - Preliminary.

† Sources:

1. GNP - National Economic Council.
2. ILO Yearbook.
3. UN Demographic Yearbook.

4. International Demographic Statistics Center, Bureau of the Census.
5. UNESCO.

Note: Breakdowns of demographic and education data may be based on different population aggregates, but the differences should not substantially affect the ratio comparisons.

Table 10

SELECTED INDEXES OF PRICES AND MOVEMENTS OF REAL WAGES
PHILIPPINES
(1949 = 100)

	Retail Prices, Manila		Wholesale prices of commodities for home consumption, Manila			Real wages in in- dustries in Manila and suburbs	
	<u>All Items</u>	<u>Cereals</u>	<u>Food</u>	<u>Manufactured Goods</u>	<u>Machinery & Trans. Equip- ment</u>	<u>Skilled Laborers</u>	<u>Unskilled Laborers</u>
1950	101.5	88.1	88.5	117.0	110.8	100.8	85.9
1955	93.5	74.3	85.0	105.4	124.2	108.5	117.2
1960	110.1	81.4	93.7	129.9	183.4	102.2	107.0
1965	137.8	110.9	124.9	151.3	234.4	88.0	101.9
1966	147.3	129.1	137.2	154.4	237.0	86.2	102.3

Source: Central Bank of the Philippines, Statistical Bulletin (18), December 1966.

Table 11

CENTRAL GOVERNMENT FINANCES

ITEM	Fiscal Year ending June 30					1971 ^E
	1967	1968	1969	1970		
	Millions of Pesos					
A. REVENUE - TOTAL	<u>2,630</u>	<u>2,895</u>	<u>3,258</u>	<u>3,746</u>	<u>4,719</u>	<u>1,210</u>
1. Domestic revenue	<u>2,616</u>	<u>2,877</u>	<u>3,238</u>	<u>3,611</u>	<u>4,496</u>	<u>1,153</u>
a. Taxes on income and profits	565	668	836	944	1,095	281
b. Sales, turnover and excise taxes ..	1,014	1,139	1,272	1,415	1,551	397
c. Taxes on international trade	497	542	584	613	708	182
d. Other tax revenue	126	142	173	255	679	174
e. Nontax revenue	414	386	373	384	463	119
2. From foreign grants	14	18	20	135	223	57
a. U.S. Government	5	9	7	116	191	49
b. Other	9	9	13	19	32	8
B. EXPENDITURE - TOTAL	<u>3,373</u>	<u>4,133</u>	<u>4,357</u>	<u>4,849</u>	<u>5,094</u>	<u>1,306</u>
1. Current	<u>2,386</u>	<u>2,723</u>	<u>3,156</u>	<u>3,815</u>	<u>3,966</u>	<u>1,017</u>
a. Defense (Total)	371	447	513	663	730	187
b. Agriculture	125	138	202	201	201	52
c. Education	758	836	937	1,066	1,122	288
d. Health	118	136	169	214	211	54
e. Transportation and communication..	209	242	268	245	243	62
f. Commerce and industry	58	72	71	82	58	15
g. Interest payments	77	92	113	140	152	39
h. Other	670	760	883	1,204	1,249	320
2. Capital	987	1,410	1,201	1,034	1,128	289
a. Agriculture	85	81	101	59	189	48
b. Education	42	36	50	66	38	10
c. Health	5	7	14	22	3	1
d. Transportation and communication..	199	279	293			
e. Industry and power	612	933	539	885	898	230
f. Other	44	74	204			
C. DEFICIT (-) OR SURPLUS (+)	<u>-743</u>	<u>-1,238</u>	<u>-1,099</u>	<u>-1,103</u>	<u>-375</u>	<u>-96</u>
D. FINANCING THE DEFICIT	<u>743</u>	<u>1,238</u>	<u>1,099</u>	<u>1,103</u>	<u>375</u>	<u>96</u>
1. Domestic sources (net)	<u>562</u>	<u>485</u>	<u>898</u>	<u>1,007</u>	<u>248</u>	<u>64</u>
2. Foreign borrowing (net)	<u>181</u>	<u>753</u>	<u>201</u>	<u>96</u>	<u>127</u>	<u>32</u>
a. U.S. Government	53	43	16	58	33	8
b. Other	128	796	185	38	94	24

*Converted at 3.9 pesos per dollar. E - Estimated.

Source: Form A.I.D. 10-74.

NOTE: Form A.I.D. 10-74 is a standardized compilation of a country's central government finances covering all the budgetary and extrabudgetary accounts of the central government sector except the operations of government enterprises and social insurance funds.

Revision No. 254
March 1972

A.I.D. (PPC/SR)

Table 12

BALANCE OF PAYMENTS
(Millions of U.S. Dollars)

ITEM	1966	1967	1968	1969	1970
A. BALANCE ON GOODS AND SERVICES^a	65	-211	-385	-389	-149
1.a. Exports, f.o.b.	844	838	876	874	1,082
b. Imports, f.o.b.	-853	-1,062	-1,150	-1,132	-1,090
Trade balance	-9	-224	-274	-258	-8
2. Nonmonetary gold ^b	(16)	(17)	(18)	(20)	(20)
3. Freight and insurance	-55	-78	-87	-78	-78
4. Other transportation	14	11	7	-16	-13
5. Travel	-1	18	-20	-10	68
6. Investment income ^c	-37	-76	-97	-78	-130
7. Other government	74	93	110	74	52
a. U.S. military expenditures	(57)	(79)	(96)	(59)	(31)
Total services	79	45	-24	-23	-40
8. Other private	74	13	-111	-131	-141
B. UNREQUITED TRANSFERS	96	186	135	155	121
9. Private	52	114	91	106	95
a. Pensions paid war veterans by U.S.	(43)	(87)	(59)	(62)	(64)
10. Government (net)	44	72	44	49	26
a. U.S. grants (net)	(6)	(6)	(6)	(9)	(9)
b. Reparations from Japan	(33)	(60)	(27)	(35)	(13)
c. Other	(5)	(6)	(11)	(5)	(4)
C. CAPITAL FLOWS[†]	-105	32	282	258	300
Nonmonetary sectors					
11. Private direct investment ^c	-15	-9	-3	-6	-29
12. Other private long-term	2	12	105	84	158
a. Loan receipts	41	48	175	174	344
b. Loan repayments	-38	-31	-59	-86	-192
c. Other	-1	-5	-11	-4	6
13. Other private short-term	-17	12	174	58	76
14. Local government	-	-	-	-	-
15. Central government (net)	-23	-44	37	13	17
a. Loan receipts - total	28	4	71	40	78
b. Loan repayments	-47	-46	-36	-20	-59
c. Other liabilities	2	3	2	2	2
d. Assets	-6	-5	-	-3	-4
Monetary sectors					
16. Commercial banks	-82	-56	8	29	19
a. Liabilities	-53	-31	14	12	12
b. Assets (incr. -)	-29	-25	-6	17	7
17. Central Bank	30	117	-32	68	59
a. Loans received	18	106	-33	68	59
b. Assets	12	11	1	-	-
D. 18. ALLOCATION OF SDR's	-	-	-	-	18
E. RESERVES AND RELATED ITEMS	-	14	73	40	-116
19. Liabilities (use of Fund credit)	-	-	55	-	14
20. Assets	-	14	18	40	130
a. Monetary gold	-5	-17	-1	16	-11
b. Reserve position in the Fund	-23	28	-	-	-
c. Foreign exchange	28	3	19	24	119
F. NET ERRORS AND OMISSIONS	-56	-21	-112	-64	-174

NOTE: Item numbers correspond to those used by IMF. Blank spaces indicate data not available.
[†] - Excluding reserve flows, which are included in Group E.
 Source: International Monetary Fund, "Balance of Payments Yearbook."

SEE REVERSE SIDE FOR FOOTNOTES

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 March 1972

A.I.D. (PFC/SR)

Table 12a

BALANCE OF PAYMENTS (CONT'D)

n.a. or blank spaces = not available; a dash indicates zero.

a - Balance on Goods and Services:

	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
1. Exports of Goods and Services	1,137	1,222	1,166	1,123	1,340
2. Imports of Goods and Services	<u>-1,122</u>	<u>-1,433</u>	<u>-1,251</u>	<u>-1,512</u>	<u>-1,436</u>
3. Net	65	-211	-385	-389	-149

b - Nonmonetary gold included in commodity trade.

c - Data exclude reinvested earnings of foreign-owned companies.

Table 13

LOANS AND GRANTS FROM ABROAD
(U.S. Fiscal Years - Millions of Dollars)

U. S. PROGRAM	U. S. OVERSEAS LOANS AND GRANTS-NET OBLIGATIONS AND LOAN AUTHORIZATIONS			REPAYMENTS AND INTEREST	TOTAL LESS REPAYMENTS AND INTEREST
	1969	1970	TOTAL 1946-1970	1946-1970	
A. OFFICIAL DEVELOPMENT ASSISTANCE					
A. I. D. AND PREDECESSOR AGENCIES - TOTAL	5.1	8.0	309.4	27.3	282.1
Loans	-	-	57.7	27.3	30.4
Grants	5.1	8.0	251.6	-	251.6
FOOD FOR PEACE - TOTAL	9.5	13.6	163.7	10.0	153.7
Title I - Total	-	10.0	62.0	10.0	52.0
REPAYABLE IN U.S. DOLLARS - LOANS	-	10.0	29.5	3.9	25.6
PAYABLE IN FOREIGN CURRENCY-Planned for Country Use (Loans)	(-)	(-)	32.5	6.1	26.4
(Grants)	(-)	(-)	(12.8)	(-)	(12.8)
Title II - Total	9.5	3.6	101.7	-	101.7
EMERGENCY RELIEF, ECON. DEVELOP. & WORLD FOOD PROGRAM	0.1	-	6.5	-	6.5
MILITARY RELIEF & RECONSTRUCTION	9.4	3.6	95.2	-	95.2
OTHER OFFICIAL DEVELOPMENT ASSISTANCE	3.5	2.5	881.4	117.3	764.1
Peace Corps	3.5	2.5	31.2	-	31.2
Other	-	-	850.2	117.3	732.9
TOTAL OFFICIAL DEVELOPMENT ASSISTANCE	18.1	24.1	1,354.5	154.6	1,199.9
Loans	-	10.0	213.7	154.6	59.1
Grants	18.1	14.1	1,140.8	-	1,140.8
B. OTHER OFFICIAL					
EXPORT-IMPORT BANK LONG-TERM LOANS	21.2	9.6	201.7	125.1	78.2
TOTAL ECONOMIC	39.3	33.7	1,557.4	279.7	1,278.1
Loans	21.2	19.6	417.0	279.7	137.3
Grants	18.1	14.1	1,140.8	-	1,140.8
MILITARY ASSISTANCE PROGRAM - (Chg. to FAA Approp.)^a	18.8	-	434.8	-	434.8
Credit Assistance	-	-	-	-	-
Grants	18.8	15.7	434.8	-	434.8
(Additional Grants from Excess Stocks)	(0.7)	(0.2)	(22.9)	(-)	(22.9)
OTHER MILITARY ASSISTANCE GRANTS	-	-	132.9	-	132.9
TOTAL MILITARY	18.8	15.7	567.7	-	567.7
TOTAL ECONOMIC AND MILITARY	58.1	49.4	2,125.5	279.7	1,845.8
Loans	21.2	19.6	417.0	279.7	137.3
Grants	36.9	29.8	1,708.5	-	1,708.5
OTHER PROGRAMS					
ASSISTANCE FROM INTERNATIONAL AGENCIES - COMMITMENTS				D. A. C. COUNTRIES (EXCLUDING U.S.) OFFICIAL BILATERAL ODDS EXPENDITURES	
	FY 1969	FY 1970	FY 1946-70	DONOR	CY 1968
TOTAL	20.5	73.7	283.8	TOTAL	CY 1969
IBRD - World Bank	12.5	59.0	217.0	Japan	CY 1960-69
Int'l Finance Corp.	-	7.4	23.8	Canada	79.2
Asian Dev. Bank	5.0	2.5	7.5	Germany	59.4
UNDP - Special Fund	1.5	3.9	18.1	Other	368.3
UNDP - TA (CY)	0.6	0.3	8.1	Japan	60.0
Other UN (CY)	0.9	0.6	9.3	Canada	10.1
				Germany	7.4
				Other	1.6
				Japan	49.2
				Canada	7.1
				Germany	1.3
				Other	1.8
				Japan	312.1
				Canada	30.3
				Germany	19.0
				Other	6.9
ASSISTANCE FROM COMMUNIST COUNTRIES (LOANS AND GRANTS EXTENDED)					
1969 (Calendar Year)..... -					
1970 (Calendar Year)..... -					
Cumulative thru 1970..... -					

^aLess than \$50,000.
^bAnnual data represent deliveries; total through 1970 is the cumulative program.

Table 14

ESTIMATED POPULATION
Number & Percent Distribution By Age & Sex
PHILIPPINES
1969

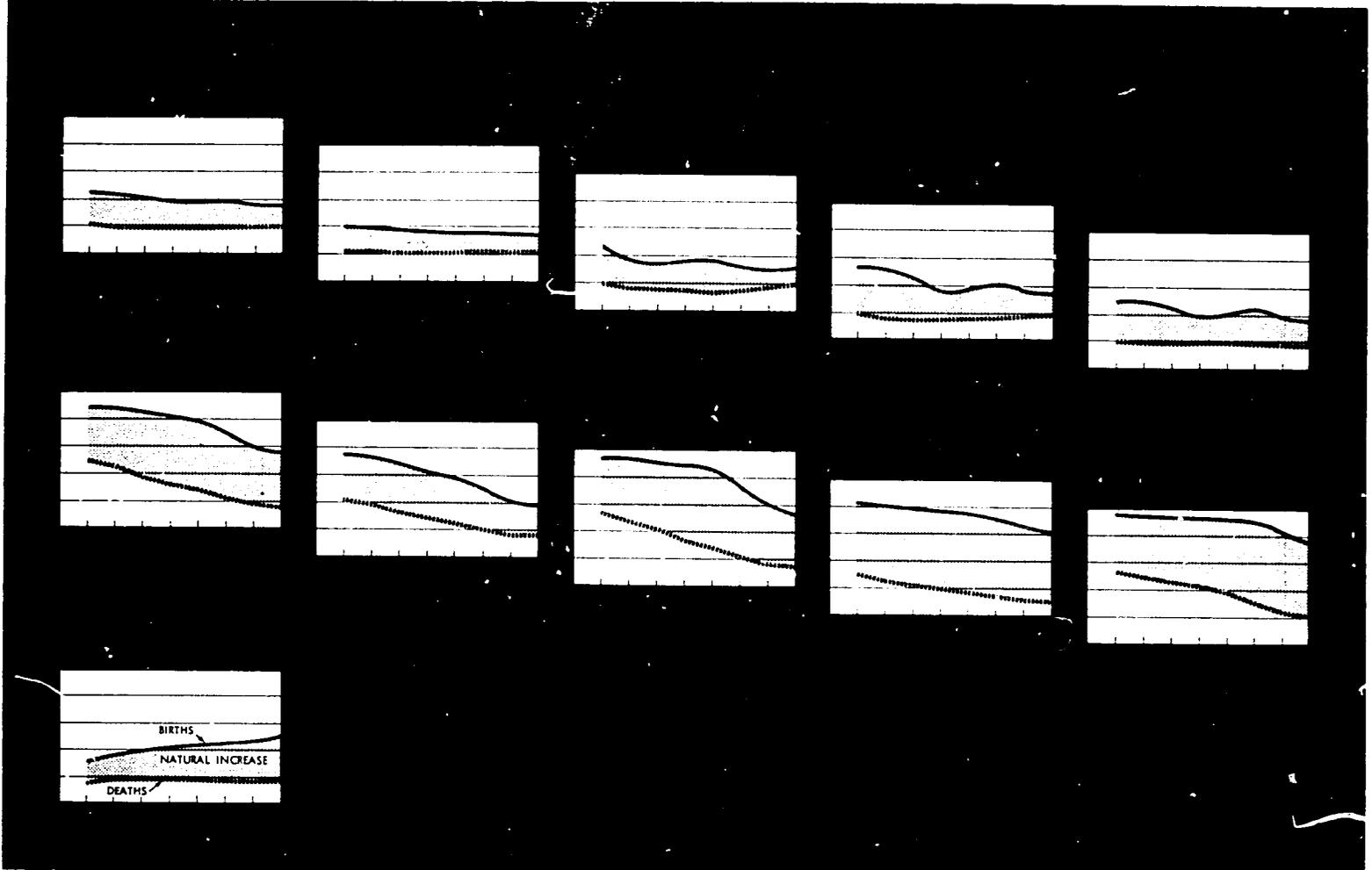
Age	Population			Percent Age Distribution		
	Both Sexes	Male	Female	Both Sexes	Male	Female
ALL AGES	37,158,000	18,741,000	18,417,000	100.00	100.00	100.00
Under 1 yr.	1,566,000	796,000	770,000	4.21	4.25	4.18
1 - 4 yrs.	5,569,000	2,821,000	2,748,000	14.99	15.05	14.92
5 - 9 yrs.	5,668,000	2,874,000	2,794,000	15.25	15.33	15.17
10 - 14 yrs.	4,615,000	2,355,000	2,260,000	12.42	12.57	12.27
15 - 19 yrs.	3,943,000	2,007,000	1,936,000	10.61	10.71	10.51
20 - 24 yrs.	3,219,000	1,633,000	1,586,000	8.66	8.71	8.61
25 - 29 yrs.	2,612,000	1,319,000	1,293,000	7.03	7.04	7.02
30 - 34 yrs.	2,139,000	1,074,000	1,065,000	5.76	5.73	5.78
35 - 39 yrs.	1,760,000	883,000	877,000	4.74	4.71	4.76
40 - 44 yrs.	1,456,000	727,000	729,000	3.92	3.88	3.96
45 - 49 yrs.	1,223,000	609,000	614,000	3.29	3.25	3.33
50 - 54 yrs.	1,026,000	508,000	518,000	2.76	2.71	2.81
55 - 59 yrs.	821,000	402,000	419,000	2.21	2.14	2.28
60 - 64 yrs.	604,000	292,000	312,000	1.63	1.56	1.70
65 - 69 yrs.	415,000	198,000	217,000	1.12	1.06	1.18
70 yrs. and over	522,000	243,000	279,000	1.40	1.30	1.52

Source:
 Philippines Health Statistics, 1969

FERTILITY, MORTALITY AND NATURAL INCREASE IN POPULATION FOR SELECTED REGIONS, 1950-2000

(Per Thousand)

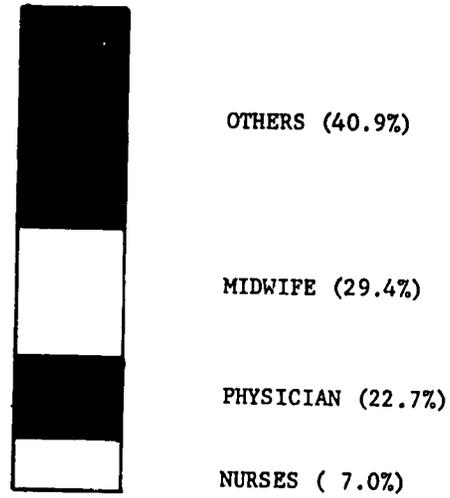
*Philippines is included in East Asia



Source: IBRD

Table 16

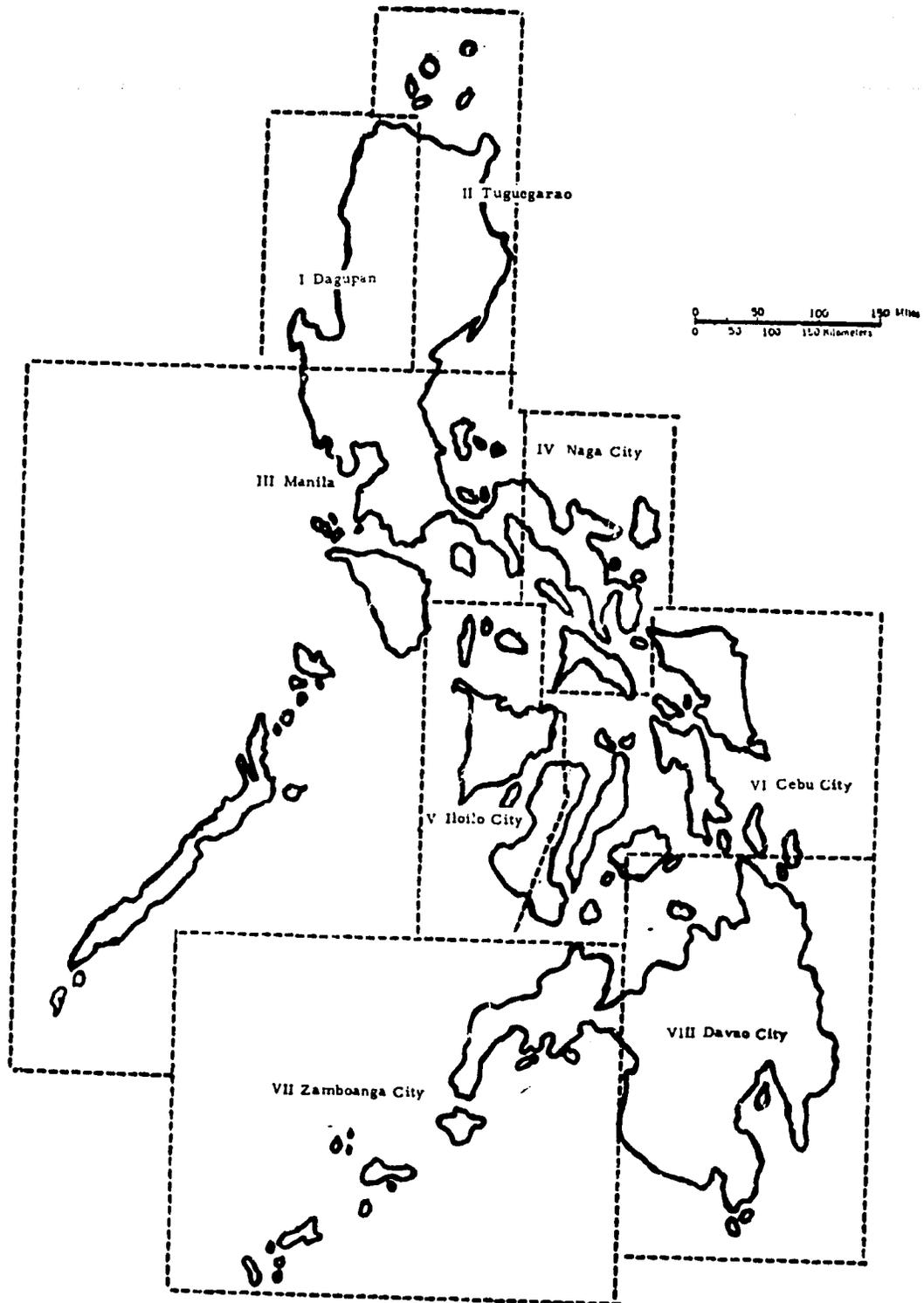
BIRTHS BY ATTENDANT
PHILIPPINES
1969



Source:
Philippines Health Statistics, 1969

Table 17

EIGHT HEALTH REGIONS OF THE PHILIPPINES



Source: Progress in Public Health in the Philippines

Table 18

**LIVEBIRTHS: NUMBER & PERCENTAGE DISTRIBUTION
BY ATTENDANT & HEALTH REGION
PHILIPPINES
1969**

A R E A	TOTAL BIRTHS	BIRTHS ATTENDED BY				PERCENT ATTENDED BY			
		M.D.	Nurse	Midwife	Others	M.D.	Nurse	Midwife	Others
PHILIPPINES	1,015,784	230,199	71,618	298,733	415,234	22.7	7.0	29.4	40.9
REGION 1	118,377	13,929	9,733	33,825	60,890	11.8	8.2	28.6	51.4
REGION 2	47,219	1,476	4,013	12,412	29,318	3.1	8.5	26.3	62.1
REGION 3	398,279	150,527	23,146	132,026	92,580	37.8	5.8	33.1	23.3
REGION 4	60,384	6,144	3,781	19,399	51,060	7.6	4.7	24.2	63.5
REGION 5	60,921	12,340	8,112	18,272	22,197	20.3	13.3	30.0	36.4
REGION 6	144,196	21,162	9,460	36,107	77,467	14.7	6.6	25.0	53.7
REGION 7	53,278	6,790	6,957	18,353	21,178	12.7	13.1	34.4	39.8
REGION 8	113,130	17,831	6,416	28,339	60,544	15.8	5.7	25.0	53.5

Source:
Philippines Health Statistics, 1969

Table 19

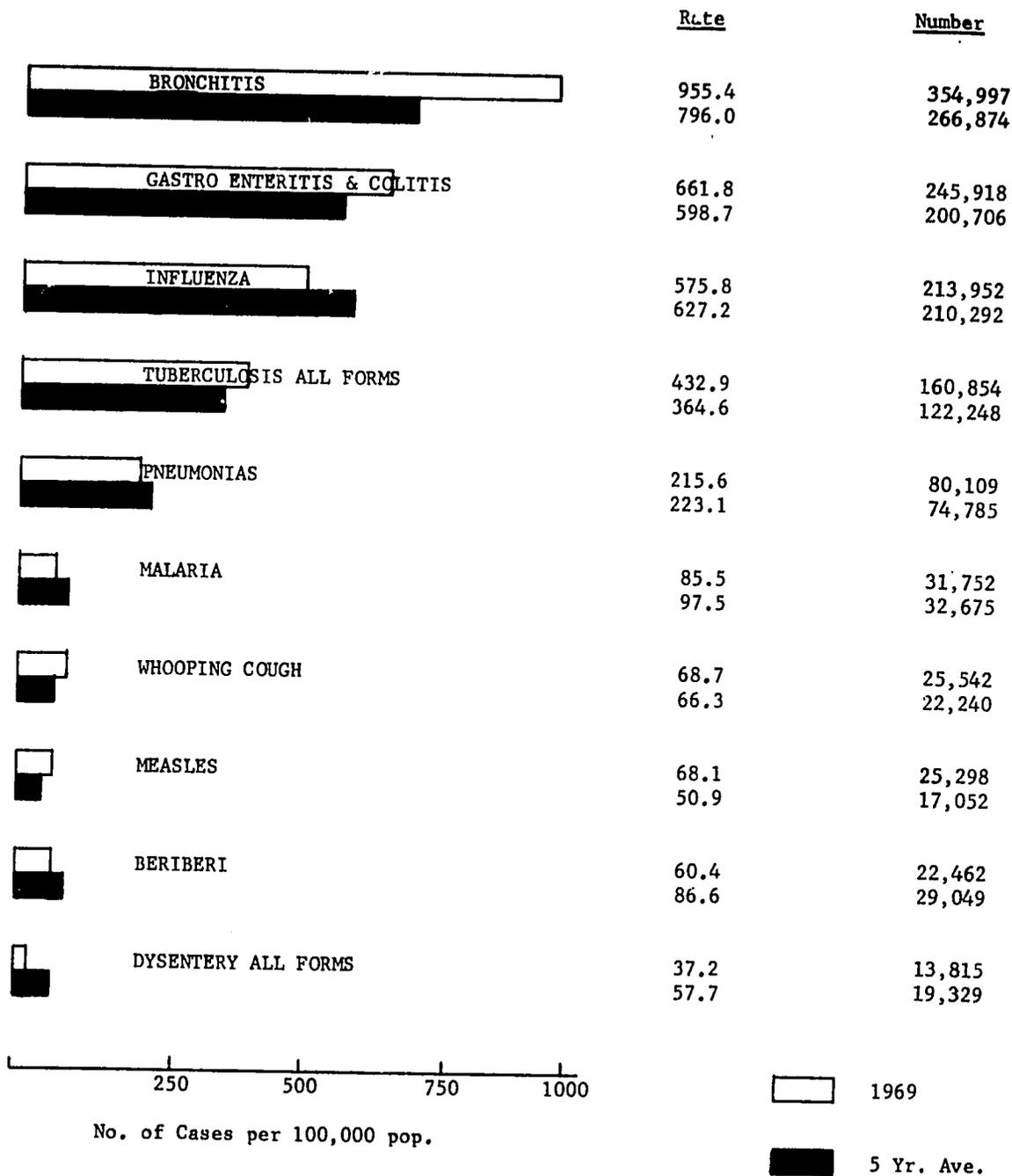
LIVEBIRTHS, DEATHS & CRUDE RATES; INFANT & MATERNAL
BY HEALTH REGION
PHILIPPINES
1969

A R E A	BIRTHS		DEATHS		DEATHS UNDER 1 YR.		MATERNAL DEATHS	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
PHILIPPINES	1,015,784	27.3	255,785	6.9	65,142	64.1	2,047	2.0
REGION 1	118,377	28.6	28,588	7.0	6,793	57.4	173	1.5
REGION 2	47,219	33.5	12,477	8.9	3,331	70.5	108	2.3
REGION 3	398,279	37.9	81,425	7.7	23,875	59.9	499	1.3
REGION 4	80,384	24.8	22,886	7.1	4,854	60.4	226	2.8
REGION 5	60,921	14.5	24,800	5.9	5,703	93.6	121	2.0
REGION 6	144,196	23.2	47,363	7.6	10,237	71.0	471	3.3
REGION 7	53,278	17.1	12,591	4.0	3,267	61.3	168	3.2
REGION 8	113,130	26.2	25,655	5.9	7,082	62.6	281	2.5

Source:
Philippines Health Statistics, 1969

Table 20

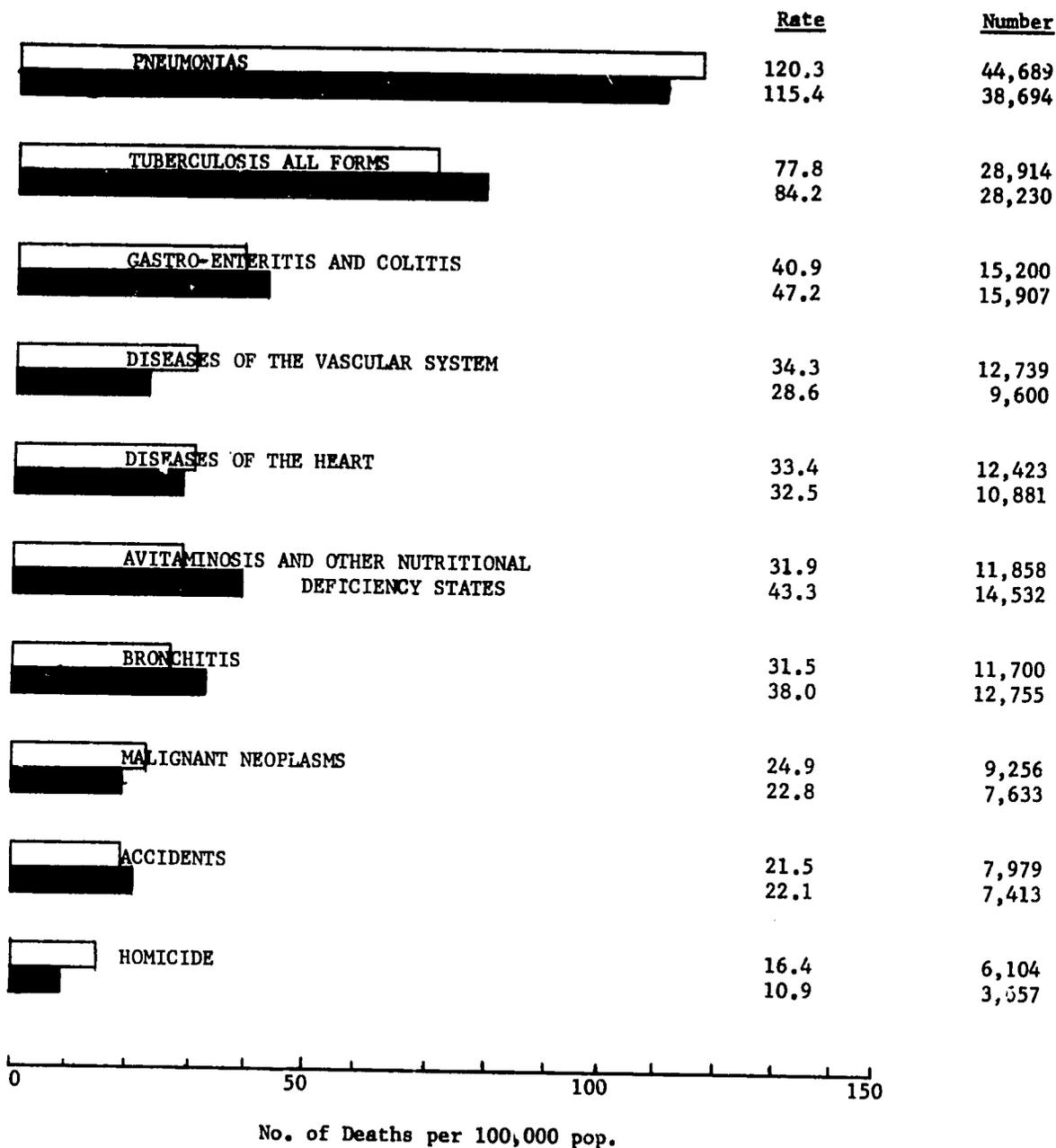
MORBIDITY: LEADING CAUSES
 RATE/100,000 POP.
 PHILIPPINES
 5 YEAR AVE. (1964-1968) & 1969



Source:
 Philippines Health Statistics, 1969

Table 21

TOTAL MORTALITY: LEADING CAUSES
RATE/100,000 POP.
PHILIPPINES
5 YR. AVE. (1964-1968) & 1969



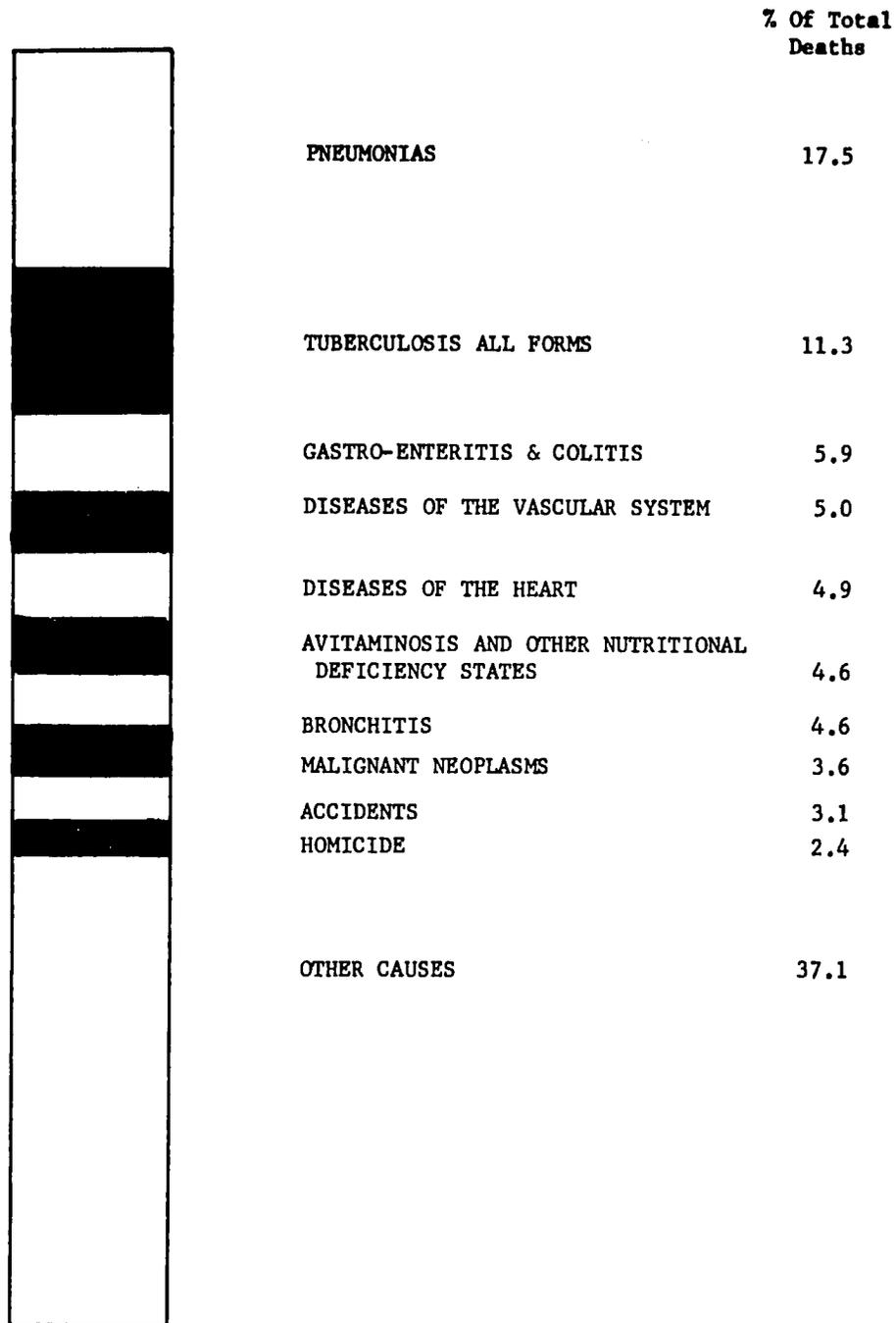
□ 1969

■ 5 Yr. Ave.

Source: Philippines Health Statistics, 1969

Table 22

**TOTAL MORTALITY: LEADING CAUSES
(Percent Distribution)
PHILIPPINES
1969**



Source:
Philippines Health Statistics, 1969

Table 23

MORTALITY: TEN LEADING CAUSES BY ATTENDANT
No. & Percentage Distribution
PHILIPPINES
1969

Cause of Death	TOTAL DEATH	Medically Attended		Not Medically Attended		Attendance Not Stated	
		Number	%	Number	%	Number	%
1. Pneumonias	44689	23283	52.1	13571	30.4	7835	17.5
2. Tuberculosis All Forms	28914	16402	56.7	7349	25.4	5163	17.9
3. Gastro-enteritis and colitis	15200	8525	56.1	4210	27.7	2465	16.2
4. Diseases of the Vascular System	12739	8118	63.7	2703	21.2	1918	15.1
5. Diseases of the Heart	12423	7649	61.6	3040	24.5	1734	13.9
6. Avitaminosis and Other Nutritional Deficiency States	11858	4336	36.6	4886	41.2	2636	22.2
7. Bronchitis	11700	4652	39.8	4329	37.0	2719	23.2
8. Malignant Neoplasms	9256	6434	69.5	1522	16.4	1300	14.1
9. Accidents	7979	4107	51.5	2390	29.9	1482	18.6
10. Homicide	6104	3336	54.7	1615	26.4	1153	18.9

Source:
Philippines Health Statistics, 1969

Table 24

**MORTALITY WITH MEDICAL ATTENDANT:
TEN LEADING CAUSES BY ATTENDANT
No. & Percentage Distribution
PHILIPPINES
1969**

Cause of Death	Deaths Medically Attended	Deaths Attended By			Percent Attended By		
		Private M.D.	Health Officer	Hospital	Private M.D.	Health Officer	Hospital
1. Pneumonias	23,283	7,833	10,254	5,196	33.6	44.1	22.3
2. Tuberculosis All Forms	16,402	5,124	7,816	3,462	31.2	47.7	21.1
3. Gastro-enteritis and colitis	8,525	3,262	3,117	2,146	38.3	36.5	25.2
4. Diseases of the Vascular System	8,118	2,718	2,842	2,558	33.5	35.0	31.5
5. Diseases of the Heart	7,649	2,736	2,404	2,509	35.8	31.4	32.8
6. Avitaminosis and other Nutritional Deficiency States	4,336	1,380	2,679	277	31.8	61.8	6.4
7. Bronchitis	4,652	1,543	2,840	269	33.2	61.0	5.8
8. Malignant Neoplasms	6,434	2,474	1,918	2,042	38.5	29.8	31.7
9. Accidents	4,107	824	1,808	1,475	20.1	44.0	35.9
10. Homicide	3,336	351	1,717	1,268	10.5	51.5	38.0

Source:
Philippines Health Statistics, 1969

Table 25

THE TEN LEADING CAUSES OF DEATH
ALL AGES
PHILIPPINES

Cause of Death	Deaths			Death rates per 100,000 Population			% of each cause to all causes		
	1964	1965	1966	1964	1965	1966	1964	1965	1966
ALL CAUSES	214,936	241,305	240,865	687.4	746.0	719.5	100.0	100.0	100.0
1. Influenza and pneumonia	31,149	38,059	38,258	99.6	117.7	114.3	14.5	15.8	15.9
2. Tuberculosis	25,553	28,687	28,721	81.7	88.7	85.8	11.9	11.9	11.9
3. Gastritis, duodenitis, enteritis, colitis, except diarrhea of the newborn	15,882	14,658	18,541	50.8	45.3	55.4	7.4	6.1	7.7
4. Bronchitis	11,916	13,951	13,665	38.1	43.1	40.8	5.5	5.8	5.7
5. Heart disease	8,998	10,990	10,654	28.8	34.0	31.8	4.2	4.6	4.4
6. All accidents	6,763	7,476	7,542	21.6	23.1	22.5	3.1	3.1	3.1
7. Malignant neoplasms, including neoplasms of lymphatic and haematopoietic tissues	6,657	7,186	7,382	21.3	22.2	22.1	3.1	3.0	3.1
8. Vascular lesions affecting central nervous system	4,842	5,481	4,719	15.5	16.9	14.1	2.3	2.3	2.0
9. Birth injuries, postnatal asphyxia and atelectasis	4,220	4,659	4,126	13.5	14.4	12.3	2.0	1.9	1.7
10. (a) Infections of the newborn (b) Nephritis and nephrosis	4,032	4,426	4,403	12.9	13.7	13.2	1.9	1.8	1.8
All other causes	94,924	105,732	102,854	303.6	826.9	307.2	44.1	43.7	42.7

Source: Philippines Health Statistics, 1969

Table 25a

THE TEN LEADING CAUSES OF DEATH
1-4 YEARS
PHILIPPINES

Cause of Death	Deaths			Death Rates per 100,000 Population			% of each cause to all causes		
	1964	1965	1966	1964	1965	1966	1964	1965	1966
ALL CAUSES	38,503	47,065	48,195	839.9	988.3	973.4	100.0	100.0	100.0
1. Influenza and pneumonia	12,510	16,546	16,015	272.9	347.5	323.5	32.5	35.2	33.2
2. Gastritis, duodenitis, enteritis, colitis, except diarrhea of the newborn	6,856	7,078	8,817	149.6	148.6	178.1	17.8	15.0	18.3
3. Bronchitis	5,247	6,638	6,543	114.5	139.4	132.2	13.6	14.1	13.6
4. Tuberculosis	1,215	1,527	1,486	26.5	32.1	30.0	3.2	3.2	3.1
5. Measles	882	1,882	1,311	19.2	39.5	26.5	2.3	4.0	2.7
6. All accidents	721	779	935	15.7	16.4	18.9	1.9	1.7	1.9
7. Non-meningococcal meningitis	613	590	636	13.4	12.4	12.8	1.6	1.3	1.3
8. Nephritis and nephrosis	5.0	716	693	11.1	15.0	14.0	1.3	1.5	1.4
9. Dysentery, all forms	399	471	503	8.7	9.9	10.2	1.0	1.0	1.0
10. Diphtheria	350	412	362	7.6	8.7	7.3	0.9	0.9	0.8
All other causes	9,200	10,426	10,894	200.7	218.8	219.9	23.9	22.1	22.7

Source: Philippines Health Statistics, 1969

Table 25b

THE TEN LEADING CAUSES OF DEATH
5-14 YEARS
PHILIPPINES

Cause of Death	Deaths			Death Rates per 100,000 Population			% of each cause to all causes		
	1964	1965	1966	1964	1965	1966	1964	1965	1966
ALL CAUSES	15,600	16,262	18,264	179.9	181.9	197.4	100.0	100.0	100.0
1. Influenza and pneumonia	3,591	3,969	4,335	41.4	44.4	46.9	23.0	24.4	23.7
2. Gastritis, duodenitis, enteritis, colitis except diarrhea of the newborn	2,283	1,700	2,268	26.3	19.0	24.5	14.6	10.5	12.4
3. All accidents	1,249	1,232	1,439	14.4	13.8	15.6	8.0	7.6	7.9
4. Bronchitis	875	1,012	1,080	10.1	11.3	11.7	5.6	6.2	5.9
5. Tuberculosis	762	1,014	1,082	8.8	11.3	11.7	4.9	6.2	5.9
6. Heart disease	468	591	546	5.4	6.6	5.9	3.0	3.6	3.0
7. Nephritis and nephrosis	329	403	433	3.8	4.5	4.7	2.1	2.5	2.4
8. Non-meningococcal meningitis	320	383	485	3.7	4.3	5.2	2.1	2.4	2.7
9. Dysentery, all forms	284	285	355	3.3	3.2	3.8	1.8	1.8	1.9
10. (a) Cholera (b) Measles (c) Malaria	249	294	360	2.9	3.3	3.9	1.6	1.8	2.0
All other causes	5,190	5,379	5,881	59.8	60.2	63.5	33.3	33.0	32.2

Source:
Philippines Health Statistics, 1969

Table 25c

THE TEN LEADING CAUSES OF DEATH
15-44 YEARS
PHILIPPINES

Cause of Death	Deaths			Death Rates per 100,000 Population			% of each cause to all causes		
	1964	1965	1966	1964	1965	1966	1964	1965	1966
ALL CAUSES	33,108	35,494	36,136	259.9	269.4	265.1	100.0	100.0	100.0
1. Tuberculosis	8,261	9,078	9,062	64.8	68.9	66.5	25.0	25.6	25.1
2. All accidents	3,255	3,722	3,558	25.6	28.3	26.1	9.8	10.5	9.8
3. Influenza and pneumonia	2,344	2,541	2,538	18.4	19.3	18.6	7.1	7.2	7.0
4. Homicide and operations of war	2,232	2,348	2,676	17.8	17.8	19.6	6.7	6.6	7.4
5. Heart disease	1,976	2,350	2,247	15.5	17.8	16.5	6.0	6.6	6.2
6. Deliveries and complications of pregnancy, childbirth, and puerperium	1,777	1,694	1,796	13.9	12.9	13.2	5.4	4.8	5.0
7. Malignant neoplasms, including neoplasms of lymphatic and haematopoietic tissues	1,648	1,694	1,847	12.9	12.9	13.6	5.0	4.8	5.1
8. Gastritis, duodenitis, enteritis, colitis, except diarrhea of the newborn	1,074	725	766	8.4		5.6	3.2		2.1
9. Nephritis and nephrosis	714	725	764	5.6	5.5	5.6	2.2	2.0	2.1
10. (a) Vascular lesions affecting central nervous system	640	817	745	5.0	6.2	5.5	1.9	2.3	2.1
(b) Ulcer of stomach and duodenum		731			5.5			2.1	
All other causes	9,187	9,794	10,137	72.1	74.3	74.3	27.7	27.5	28.1

Source: Philippines Health Statistics, 1969

Table 25d

THE TEN LEADING CAUSES OF DEATH
45-65 YEARS
PHILIPPINES

Cause of Death	Deaths			Death rates per 100,000 Population			% of each cause to all causes		
	1964	1965	1966	1964	1965	1966	1964	1965	1966
ALL CAUSES	29,367	30,995	30,272	938.8	958.1	905.0	100.0	100.0	100.0
1. Tuberculosis	9,245	9,798	10,080	295.6	302.9	301.3	31.5	31.6	33.3
2. Malignant neoplasms, including neoplasms of lymphatic and haematopoietic tissues	2,820	2,964	2,880	90.2	91.6	86.1	9.6	9.6	9.5
3. Heart disease	2,553	2,849	2,759	81.0	88.1	82.5	8.6	9.2	9.1
4. Vascular lesions affecting central nervous system	1,852	2,019	1,685	59.2	62.4	50.4	6.3	6.5	5.6
5. Influenza and pneumonia	1,513	1,657	1,510	48.4	51.2	45.1	5.2	5.3	5.0
6. Ulcer of stomach and duodenum	937	1,057	1,015	30.0	32.7	30.3	3.2	3.4	3.4
7. All accidents	924	1,032	957	29.5	31.9	28.6	3.1	3.3	3.2
8. Nephritis and nephrosis	896	909	975	28.6	28.1	29.1	3.1	2.9	3.2
9. Gastritis, duodenitis, enteritis, colitis, except diarrhea of the newborn	888	491	538	28.4	15.2	16.1	3.0	1.6	1.8
10. Hypertension without mention of heart	541	773	795	17.3	23.9	23.8	1.8	2.5	2.6
All other causes	7,218	7,446	7,078	230.8	280.1	211.7	24.6	24.1	23.3

Source:
Philippines Health Statistics, 1969

Table 25e

THE TEN LEADING CAUSES OF DEATH
65 YEARS AND OVER
PHILIPPINES

Cause of Death	Deaths			Death Rates per 100,000 Population			% of each cause to all causes		
	1964	1965	1966	1964	1965	1966	1964	1965	1966
ALL CAUSES	43,202	51,131	47,614	5,275.0	6,123.5	5,588.5	100.0	100.0	100.0
1. Tuberculosis	5,539	6,775	6,607	676.3	811.4	775.5	12.8	13.3	13.9
2. Heart disease	3,741	4,881	4,703	456.8	584.6	552.0	8.7	9.5	9.9
3. Vascular lesions affecting central nervous system	2,220	2,474	2,010	271.1	296.3	235.9	5.1	4.8	4.2
4. Malignant neoplasms, including neoplasms of lymphatic and haematopoietic tissues	1,776	2,011	2,210	216.8	240.8	259.4	4.1	3.9	4.6
5. Influenza and pneumonia	1,493	2,061	1,826	182.3	246.8	214.3	3.5	4.0	3.8
6. Nephritis and nephrosis	1,244	1,369	1,327	151.9	164.0	155.8	2.9	2.7	2.8
7. Hypertension without mention of heart	741	1,038	1,163	90.5	124.3	136.5	1.7	2.0	2.4
8. Ulcer of stomach and duodenum	688	823	791	84.0	98.6	92.8	1.6	1.6	1.7
9. Gastritis, duodenitis, enteritis, colitis, except diarrhea of the newborn	557	391	514	68.0	46.8	60.3	1.3	0.8	1.1
10. All accidents	385	458	421	47.0	54.9	49.4	0.9	0.9	0.9
All other causes	24,818	28,850	26,042	3,030.3	3,455.0	3,056.6	57.4	56.5	54.7

Source: Philippines Health Statistics, 1969

Table 26

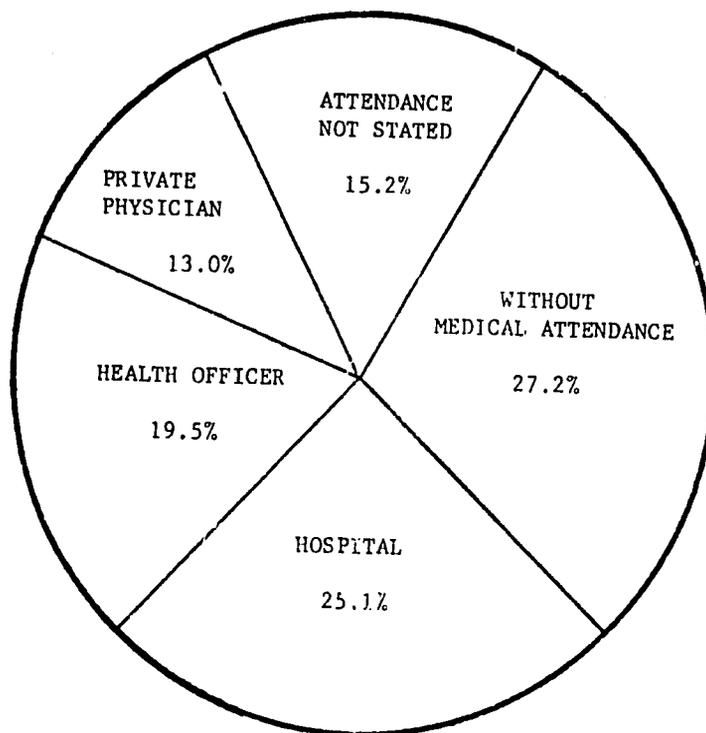
MORTALITY: 17 GROUP CAUSES
No. & Percentage Distribution
PHILIPPINES
1969

GROUP CAUSE	Number	% of Total Deaths
Deaths From All Causes	225,785	100.0
1. Diseases of the Respiratory System	55,240	21.6
2. Infective and Parasitic Diseases	43,954	17.2
3. Senility and Ill-defined Conditions	28,296	11.1
4. Certain Diseases of Early Infancy	25,813	10.1
5. Diseases of the Digestive System	23,739	9.3
6. Diseases of the Circulatory System	17,942	7.0
7. Accidents, Poisoning, and Violence	7,386	5.6
8. Allergic, Endocrine System, Metabolic and Nutritional Diseases	14,019	5.5
9. Diseases of the Nervous System and Sense Organs	11,685	4.6
10. Neoplasms	9,683	3.8
11. Diseases of the Genito-Urinary System	4,468	1.7
12. Deliveries and Complications of Pregnancy, Childbirth and the Puerperium	2,047	0.8
13. Congenital Malformation	1,752	0.7
14. Diseases of the Blood and Blood Forming Organs	1,464	0.6
15. Diseases of the Bones and Organs of Movement	609	0.2
16. Mental, Psychoneurotic, and Personality Disorders	328	0.1
17. Diseases of the Skin and Cellular Tissue	360	0.1

Source:
Philippines Health Statistics, 1969

Table 27

MATERNAL DEATHS BY ATTENDANCE
(Percent Distribution)
PHILIPPINES
1969



Source:
Philippines Health Statistics, 1969

Table 28

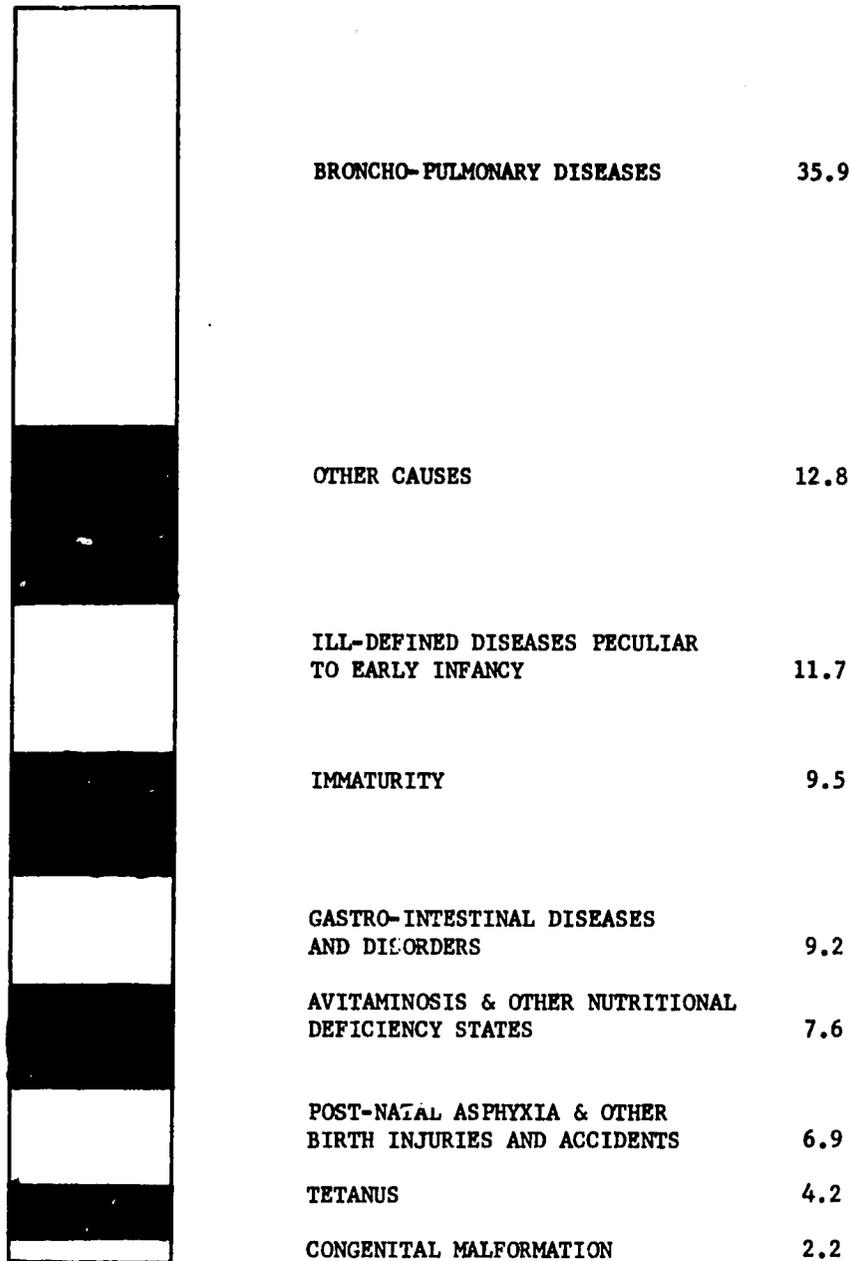
MATERNAL MORTALITY: BY ATTENDANT
No. & Percentage Distribution
PHILIPPINES
1969

MAIN CAUSE	Medically Attended				Not Medically Attended	Attendance Not Stated
	Total Attended	Private M.D.	Health Officer	Hospital		
ALL CAUSES						
Number.....	1,180	267	400	513	556	311
%	57.6	22.6	33.9	43.2	27.2	15.2
Sepsis of pregnancy, childbirth and puerperium						
Number.....	53	5	22	26	27	16
%	55.2	9.4	41.5	49.1	28.1	16.7
Toxemias of pregnancy, and puerperium						
Number.....	141	28	28	85	44	23
%	67.8	19.9	19.9	60.2	21.2	11.0
Hemorrhages of pregnancy, childbirth and puerperium						
Number.....	672	166	268	238	374	198
%	54.0	24.7	39.9	35.4	30.1	15.9
Abortions						
Number.....	62	16	21	25	47	21
%	47.7	25.8	33.9	40.3	36.2	16.1
Other complications of pregnancy, childbirth and puerperium						
Number.....	2238	49	55	134	57	46
%	69.8	20.6	23.1	56.7	16.7	13.5
Delivery without mention of complications						
Number.....	14	3	6	5	7	7
%	50.0	21.4	42.9	35.7	25.0	25.0

Source:
Philippines Health Statistics, 1969

Table 29

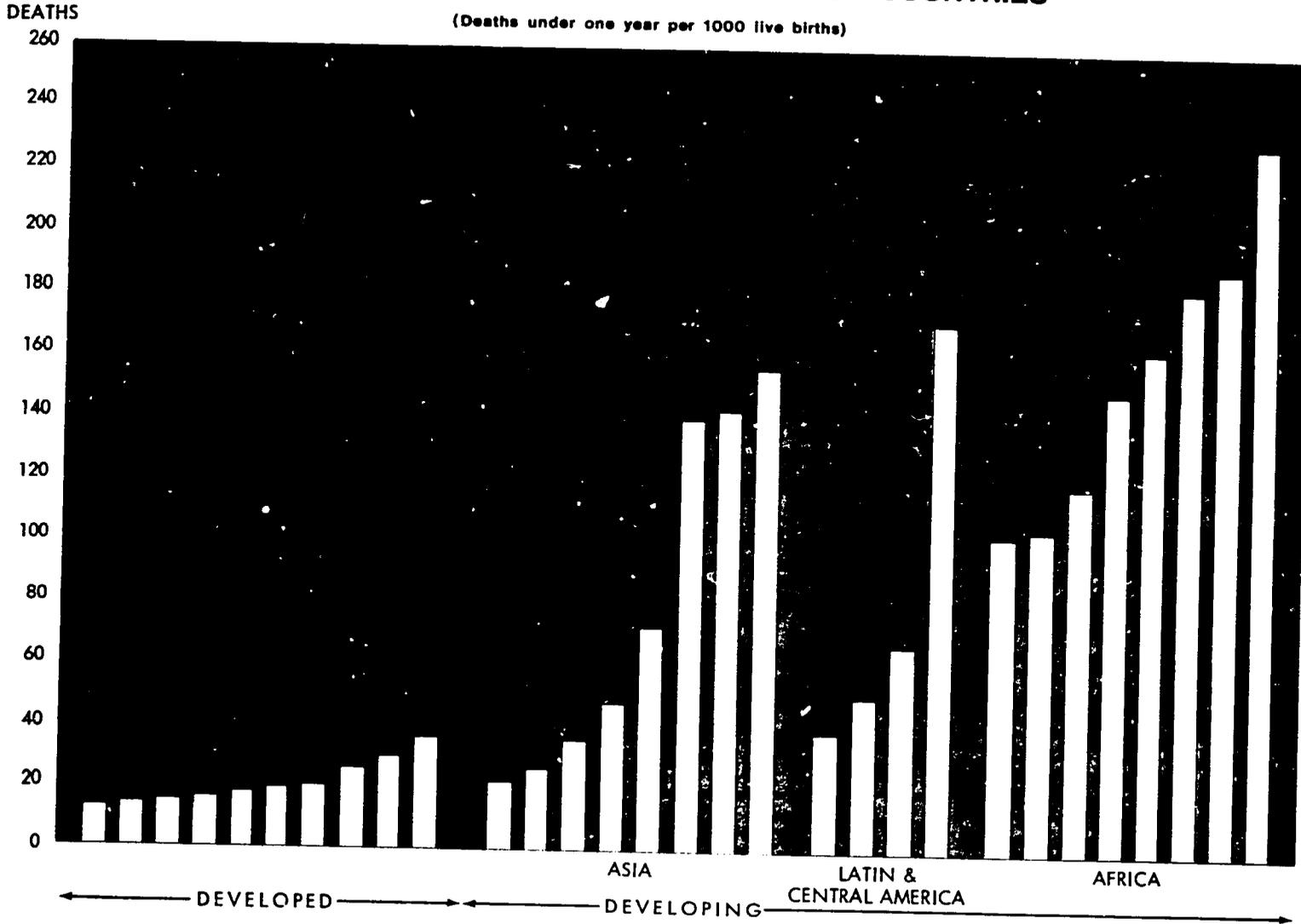
INFANT MORTALITY BY GROUP CAUSES
 (Percent Distribution)
 PHILIPPINES
 1969



Source: Philippines Health Statistics, 1969

INFANT MORTALITY RATES IN SELECTED COUNTRIES

(Deaths under one year per 1000 live births)



Source: IBRD

Table 31

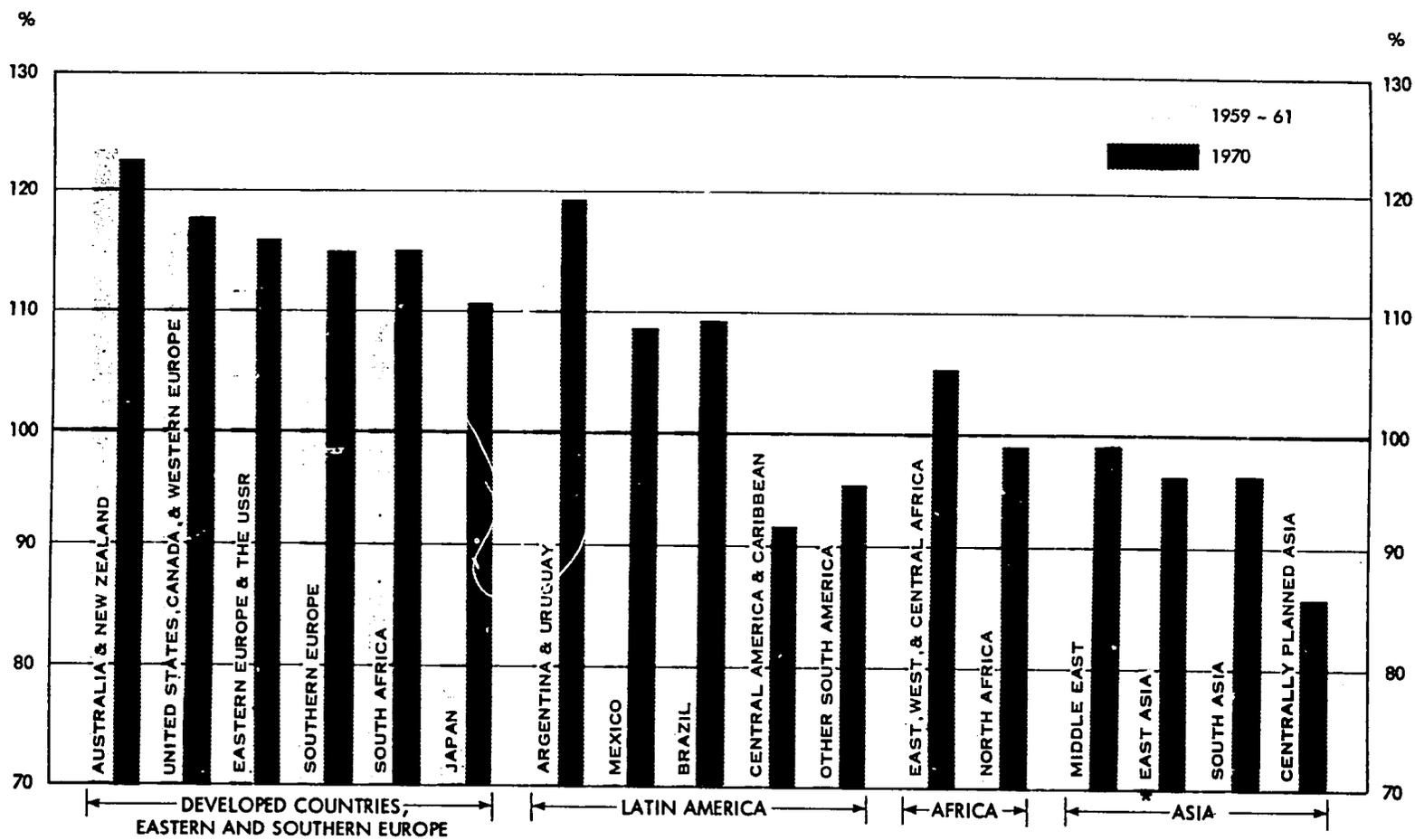
INFANT MORTALITY: TEN LEADING CAUSES BY ATTENDANT
No. & Percentage Distribution
PHILIPPINES
1969

C A U S E	Medically Attended				Not Medically Attended	Attendance Not Stated
	Total Attended	Private M.D.	Health Officer	Hospital		
1. Pneumonias						
Number.....	9,819	3,157	2,039	4,623	4,489	3,460
%	55.3	32.1	20.8	47.1	25.3	19.4
2. Ill-defined Diseases peculiar to early infancy						
Number.....	3,064	752	1,708	604	3,211	1,336
%	40.2	24.5	55.7	19.3	42.2	17.6
3. Immaturity						
Number.....	3,423	835	1,380	1,208	1,735	1,039
%	55.2	24.4	40.3	35.3	28.0	16.8
4. Gastro-enteritis and Colitis						
Number.....	3,564	1,414	1,151	999	1,195	1,053
%	61.3	39.7	32.3	28.0	20.6	18.1
5. Bronchitis						
Number.....	2,221	747	1,360	114	1,702	1,483
%	41.1	33.6	61.2	5.2	31.5	27.4
6. Avitaminosis & Other Nutritional Deficiency States						
Number.....	1,870	642	1,147	81	1,869	1,221
%	37.7	34.3	61.3	4.4	37.7	24.6
7. Postnatal Asphyxia and Atelectasis						
Number.....	2,634	340	674	1,620	950	399
%	66.1	12.9	25.6	61.5	23.9	10.0
8. Tetanus						
Number.....	1,390	484	516	390	856	492
%	50.8	34.8	37.1	28.1	31.8	17.4
9. Nutritional Maladjustment						
Number.....	532	118	359	55	668	283
%	35.9	22.2	67.5	10.3	45.0	19.1
10. Congenital Malformations						
Number.....	866	248	246	372	378	199
%	68.7	28.6	28.4	43.0	26.2	5.1

Source:

Philippines Health Statistics, 1969

**CALORIE INTAKE AS PERCENTAGE OF ESTABLISHED STANDARDS,
BY MAJOR REGIONS AND COUNTRIES, 1959-1961 AND PROJECTED 1970**



*China, Indonesia, Korea, Malaysia, Philippines, Singapore, Thailand

Source: IBRD

Table 33

ESTIMATED METABOLIC REQUIREMENTS
OF SELECTED DISEASES

DISEASES	INCREASE IN METABOLIC REQUIREMENTS		PERCENT INCREMENT IN BASIC ANNUAL CALORIC REQUIREMENTS PER CASE
	Acute Phase (duration)	Pro-or-Post- Dromal Phase (duration)	
Tuberculosis Respiratory	* 22% (3 months)	7% (9 months) 10 kg. Wt. Loss	11.0) 8.8) 19.0%
Malaria	* 18% (2.5 months)*	5 kg. Wt. Loss	3.8) 4.4) 8.2%
Dysentery	* 4% (20 days)	4 kg. Wt. Loss**	2.2) 3.5) 5.7%

* Including 30, 4-hour paroxysmal episodes at 60% increase in requirements.

** Extrapolations based on 2400 calorie minimum daily requirements and each kg. of body weight equivalent to 7700 calories.

Source: Institute for Defense Analyses

Table 34

ESTIMATED ANNUAL CALORIC INCREMENTS REQUIRED BY SELECTED DISEASES

Disease	Annual Incremental Requirement per Patient	Calories of Labor to Produce Patients Increment (1)
Tuberculosis Respiratory	173,400 (2)	10,900 (3)
Malaria	71,800	4,500
Dysentery	49,000	3,000

(1) Based upon a input/output conversion ratio of 1/16 calories

(2) Derived by $(19.8\% \times 2400 \text{ cal} \times 365 \text{ days} = 173,400)$ rounded

(3) Derived by $(173,400 \div 16 = 10,900)$ rounded

Source: Institute for Defense Analyses

Table 35

EL TOR CHOLERA VACCINE
EFFECTIVENESS IN NEGROS
OCCIDENTAL

<u>Interval</u>	<u>Effectiveness (%)</u>
I. Hospitalized and Home Diarrhea	
<u>One Dose</u>	
0-6 months	49%
6-12 months	0%
<u>Two Doses</u>	
0-6 months	55%
II. Inapparent Infections (in household contacts)	
<u>One Dose</u>	
0-8 months	24%

Source:

Personal Communication from R. Northrup, NIH, 1972

Table 36

EFFECT OF PREVENTIVE VACCINATION OF EPIDEMIC WAVE 1969-72 - NEGROS OCCIDENTAL

<u>Severity of Disease</u>	<u>Number of Cases</u>	<u>Effectiveness %</u>	<u>Cases Prevented</u>	<u>Cases Remaining</u>
Hospitalized cases	1,766	55	971	795
Mild diarrheas	5,739	55	3,156	2,583
No symptoms	<u>32,631</u>	<u>35</u>	<u>11,421</u>	<u>21,210</u>
Total	<u>40,136</u>		<u>15,548</u>	<u>24,588</u>

Source:
 Personal Communication from R. Northrup, NIH, 1972

Table 37

SUMMARY OF THE OPERATIONS OF TWO RURAL CHOLERA
HOSPITALS WITH A COMPARISON OF THE COSTS FOR AN
IMMUNIZATION PROGRAM TO COVER THE SAME POPULATION

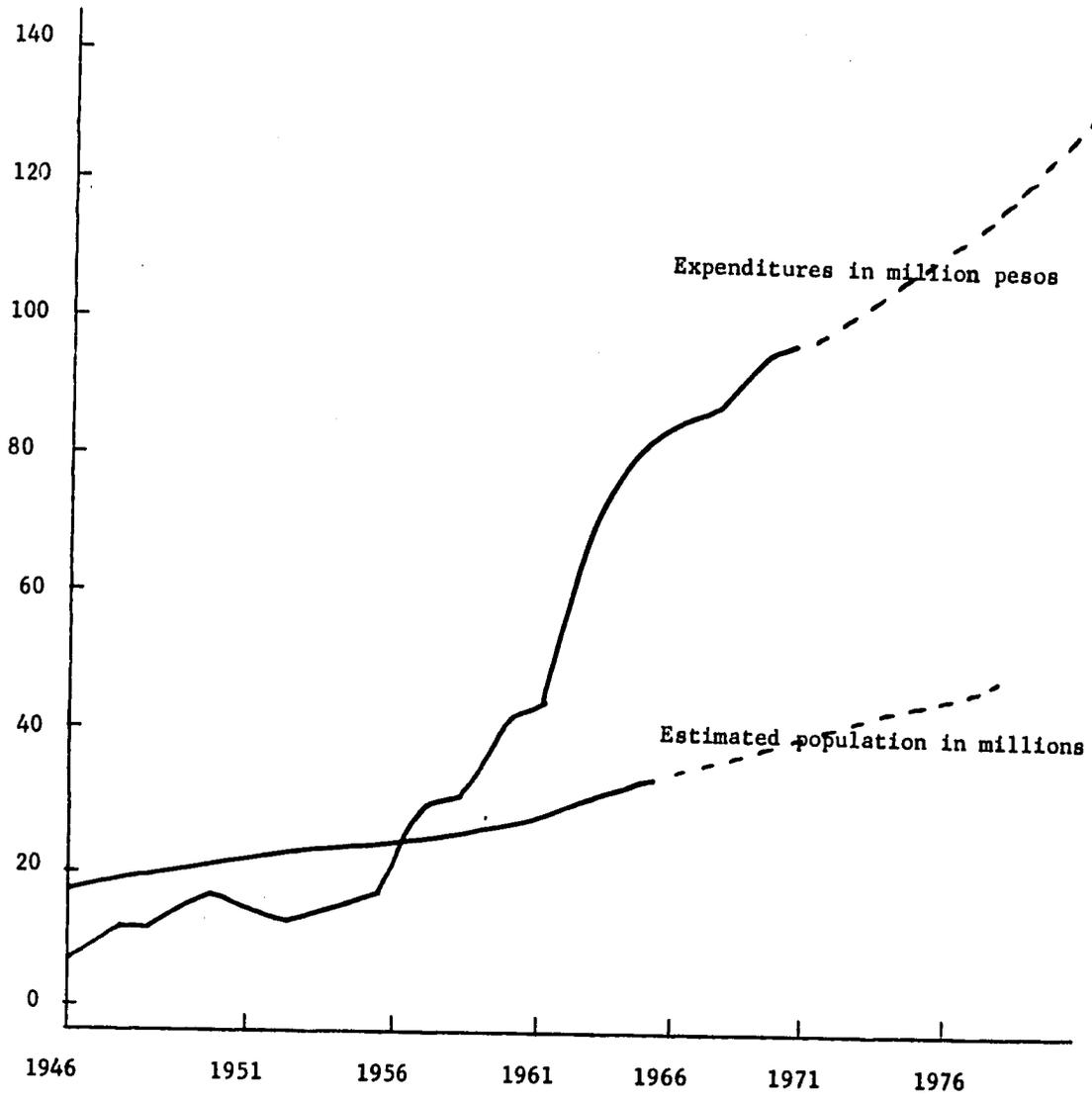
	<u>Perm. Hosp.</u> <u>(Matlab)</u>	<u>Temp. Hosp.</u> <u>(Rangpur)</u>
Estimated Population Served	750,000	180,000
Duration of Operation	12 mos.	3 mos.
No. of Beds	15-50	5-15
Ambulance Support	14 speed boats	2 vehicles
Total Cases Treated	6,432	642
Cholera	1,743	399
Non-cholera Diarrheas	4,689	243
Cholera Deaths	4	4
Cost of Operation	Rs. 287,000	Rs. 34,000
Estimated Cost of Vaccine Program	Rs. 204,000	Rs. 49,000
Percent Survival for Patients Treated	99%+	99%+

Source:

Personal Communication from R. Northrup, NIH, 1972

Table 38

ANNUAL EXPENDITURES, DEPARTMENT OF HEALTH AND ESTIMATED POPULATION, PHILIPPINES, 1946-1966; AND MINIMUM ANTICIPATED EXPENDITURES AND POPULATION PROJECTIONS, 1967-1980



Source: Philippine Population in the Seventies

Table 39

ANNUAL APPROPRIATIONS, TOTAL EXPENDITURES, ESTIMATED
POPULATION AND PER CAPITA EXPENSE FOR HEALTH,
DEPARTMENT OF HEALTH, SELECTED YEARS

Year	<u>Appropriation</u>		Total Expenditures in Pesos	Estimated Population	Per Capita Expense Pesos
	Amount in Pesos	Per cent of Total			
1950	16,060,789	5.5	15,060,789.36	20,315,800	0.74
1955	32,472,653	5.8	27,729,365.90	23,757,600	1.17
1960	64,978,731	7.2	56,487,840.86	27,410,000	2.09
1965	118,195,197	5.6	86,804,215.00	32,345,000	2.68

Source: Second Conference on Population, 1970

Table 40

**ACTIVITIES OF RURAL HEALTH UNITS
FOR SELECTED YEARS**

<u>ACTIVITIES</u>	<u>1953-1954</u>	<u>1955-1956</u>	<u>1965-1966</u>
Consultations	880,978	2,418,504	3,950,094
Treatment	1,700,778	2,669,073	6,840,888
Operation	10,290	28,249	53,690
Attendance at Residence	857,536	2,354,155	13,563,623
Deliveries	16,579	45,514	233,521
Sanitary Campaigns	497,942	1,366,979	1,967,536
Immunization	819,800	2,250,571	16,950,890
Health Education	232,106	637,191	4,930,270
School Work	74,891	205,596	859,784
Emergency	5,716	15,694	175,890
Total Work Units	5,096,616	11,991,526	49,526,186

Source:

Rural Health Unit Reports, 1968 Department of Health

Table 41

HOSPITALS, GOVERNMENT AND PRIVATE, NUMBER, TYPE, AND BED CAPACITIES, 1966

Ownership	Type	Number	Bed Capacity
A. Government:			
1. Department of Health			
Medical Centers	General	4	1,300
Regional hospitals	"	5	575
Designated teaching and training hospitals	"	14	1,850
Other provincial hospitals	"	33	2,075
	Emergency hospitals	89	2,900
	Non-operating emergency hospitals	(88)	(2,475)
	Special hospitals:		
	Mat. & ped.	1	600
	Pediatric	1	150
	Orthopedic	1	700
	Communicable Dis.	1	900
	Psychiatric	1	7,050
(Leprosaria)		(8)	(8,070)
2. University of the Phil.			
Phil. Gen. Hospital	General	1	960
Univ. Health Service	"	1	50
3. Philippine National Railways Hospital	"	1	110
4. Welfareville Hospital	"	1	200
5. Dept. of National Defense:			
V. Luna Gen. Hospital	"	1	1,250
Veterans Memo. Hospital	"	1	775
Army Station Hospitals	"	12	575
6. Department of Justice			
New Bilibid Prisons Hospitals	"	1	350
Other prison hospitals	"		180
B. Private Hospitals		480	17,094

Source: Five-Year Hospital Development Program, 1966-1970, Bureau of Medical Services, Department of Health, and report of Department of Health to the W.H.O., 1966.

Table 42

**DEPARTMENT OF HEALTH HOSPITALS
BED/POPULATION RATIO AND COST RELATED TO BED OCCUPANCY IN
EIGHT HEALTH REGIONS (FY 1970)**

	REGIONS							
	I	II	III	IV	V	VI	VII	VIII
Number of hospitals, (excluding 8 leprosarria; 5 special hospitals in Region III)	22	12	59	17	24	35	11	14
Number of beds	1550	450	3125	750	1125	1700	550	1025
Percent of total population per region	11%	3%	28%	9%	12%	17%	8%	12%
Ratio of beds to population of region	1/2666	1/3129	1/3364	1/4327	1/3741	1/3658	1/5662	1/4213
Number of hospitals for which bed occupancy known	19	11	51	14	22	28	9	10
Average percent of bed occupancy (76% overall average)	75%	53%	74%	71%	72%	78%	85%	102%
Hospitals authorized under enabling acts (not in operation)	30	12	15	9	9	22	13	20
Number of beds authorized	750	300	450	225	225	550	350	550
Average cost/patient/day for hospitals below 70% bed occupancy; number of hospitals	P30.05 (8)	42.70 (8)	28.46 (19)	23.23 (8)	30.21 (10)	28.82 (9)	24.23 (4)	18.70 (1)
Average cost/patient/day in pesos for hospitals above 70% bed occupancy; number of hospitals	P20.18 (9)	16.77 (2)	21.39 (26)	16.19 (5)	15.36 (11)	16.23 (16)	15.03 (5)	17.78 (9)

\$1=P6

Source: List of Government Hospitals as of July 1, 1970
Activities and Cost of Services in Government Hospitals (As of June 30, 1970)

Table 43

RURAL HEALTH UNITS

Personnel Work Measurement

Unit of Work Measurement	Fiscal Year	Units of Backlog Beginning Of Year	Total Work Units On Hand During The Year	Total Work Units Accomplished or Estimated	Rate Of Production Per Man Year	MANYEARS		Cost Per Unit of Work In Pesos
						Total	Direct Operations	
Persons Attended	1969 actual	-----	74,350,550	74,350,550	10,505	7,077	7,007	0.75
	1970 estimate	-----	75,000,000	75,000,000	9,921	7,559	7,559	0.87
	1971 estimate	-----	70,000,000	70,000,000	9,074	7,714	7,715	0.73

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Total Obligations In Pesos

1969 actual	1970 estimate	1971 estimate
55,728,076	65,736,082	51,373,752

Source: Philippine Budget, FY 1971

Table 44

RURAL HEALTH UNIT STAFFING PLAN, FY 1968

<u>CATEGORY</u>	<u>MUNICIPAL POPULATION SERVED</u>	<u>PERSONNEL INCLUDED</u>
I	up to 2,000	1 midwife, 1 sanitary insp.
II	2,000 - 5,000	1 nurse 1 midwife or sanitary insp.
III	5,000 - 10,000	1 MHO, 1 nurse, 1 midwife 1 sanitary insp.
IV	10,000 - 20,000	1 MHO, 1 nurse, 2 midwives 1 sanitary insp.
V	20,000 - 30,000	1 MHO, 2 nurses, 2 midwives 1 sanitary insp.
VI	30,000 - 40,000	2 MHO, 2 nurses, 2 midwives 2 sanitary insp.
VII	40,000 - 50,000	2 MHO, 2 nurses, 3 midwives 3 sanitary insp.
VIII	50,000 & Over	2 MHO, 4 nurses, 4 midwives 3 sanitary insp.

Each group of two or three adjacent municipalities or municipal districts having an aggregate population of not less than 5,000 shall have a RHU of category III. However, if in the implementation of the above provisions the number of health personnel in a RHU already existing in a municipality shall suffer a reduction, the number and constitution of the health personnel in that unit was not to be disturbed.

Source: Rural Health Unit Report of the Department of Health, 1968

Table 45

ESTIMATED STATUS OF IMPLEMENTING AND STAFFING
RURAL HEALTH UNITS

	<u>1963</u>	Actual Number	<u>1969</u>	Actual Number
	Required by R.A. 1891		Estimated Requirement Considering Population Increase*	
Units	1364	1329	1714	1459
Physicians	1561	1285	1911	1715
Nurses	1982	1336	2682	1749
Midwives	2733	2213	3433	2443
Sanitary Inspectors	2058	1846	2408	2055
Total Personnel	8334	6680	10,434	7962

* Approximately 7,000,000 population increase 1963-1969 with one unit for an average of 20,000 population, the unit consisting of one physician, two nurses, two midwives, and one sanitary inspector.

Source:

Rural Health Unit Program of the Department of Health, 1968

Table 46

ACTIVITIES OF SCHOOL PHYSICIANS AND DENTISTS, 1965-1967

	1965-1966		1966-1967	
School Physicians				
No. for field operations		92*		91**
Physician-pupil ratio	1:	55,000	1:	60,000
No. of schools visited	3,425	(11.3%)	3,018	(8.89%)
No. of pupils examined	521,425	(10.4%)	499,102	(9.2%)
No. of pupils found with defects	342,791	(67.4%)	322,213	(68.4%)
No. of teachers examined	26,831	(19.1%)	23,127	(14.3%)
No. of treatments and consultations	139,363	(39.8%)	190,887	(38.7%)
Deworming Program				
No. of pupils examined	119,947		134,353	
No. of pupils treated	106,547		120,623	
No. of stools examined	111,609		131,340	
School Dentists				
No. for field operations		429(x)		438(xx)
Dentist-pupil ratio	1:	12,000	1:	14,550
No. of schools visited	24,398	(73%)	18,199	(54%)
No. of pupils inspected	3,604,574	(62%)	3,071,304	(50.3%)
No. of pupils found with defects	1,713,085	(47%)	1,545,859	(50%)
No. of pupils treated	1,287,593	(76%)	1,263,285	(81%)

Note: *Includes 7 paid from city funds

**Includes 6 paid from city funds

(x)12 paid from provincial and city funds, 10 from emergency funds

(xx)12 from provincial and city funds, 15 from emergency funds

Source: Annual reports of the Bureau of Public Schools Medical and Dental Services
Number of public schools excluding those in Manila, 33,753