

The Brazil - United States Cooperative
Health and Sanitation Program
1942 - 1960

March 15, 1961

Henry R. Labouisse, Director
The International Cooperation Administration
Washington, D. C.

Gentlemen:

As requested by your organization, The Johns Hopkins University appointed four professors to review as a group the activities of the Brazil - United States Cooperative Health and Sanitation Program during the period of 1942 to 1960. Primary emphases in this review were to be placed upon, but not to be limited to, the following functions.

1. A determination of the degree of the impact of the cooperative health activities of the Servicio Especial de Saude Publica, (hereinafter referred to as "SESP") on the economic, social and governmental development of Brazil.

2. An evaluation and recording of those philosophies, principles and methods of operation employed by SESP which have proven most satisfactory in its accomplishments.

Their study incorporated office and field analyses both in Brazil and in the United States during the months of April to October, 1960, inclusive.

Dean E. L. Stebbins, M.D., of the School of Hygiene and Public Health served as consultant to the group.

The findings are incorporated in the Report herewith respectfully submitted.

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A Review

by

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CHAPTER I

BACKGROUND

The purpose of the initial part of the report is to provide the minimum perspective necessary to an understanding of the situation which we found in 1960 in Brazil. It consists of three substantive sections; (1) the population problem, (2) the disease situation, and (3) the pattern of existing health services in Brazil.

THE POPULATION OF BRAZIL

At the time of the 1950 census Brazil had a total population of 52,645,479 persons, roughly one-half of the estimated population of the countries of South America. One estimate puts the population at mid-year 1960 at 67,390,000 persons. The 1960 census is now underway, and the accuracy of the estimate remains to be checked against the total count of the census. All estimates of population in Brazil and rates using these estimates as a denominator should be viewed with caution. Such estimates ordinarily assume rates of growth considered typical of the intercensal years 1940-50, because reliable data on births, deaths and migration are not available. The decennial census of Brazil is considered to be reasonably accurate; official vital statistics, on the other hand, are considered to be so under-reported as to be almost worthless.

1. The Rapid Population Growth

One of the most important facts about the population of Brazil is that its rate of growth is among the most rapid in the world and that this rate has accelerated. In the fifty years between 1900-50, the absolute population increased by 204 percent and in the single decade 1940-1950 by 28 percent. Respective annual rates of increase for these periods were 2.2 and 2.5 percent. All indications are that an annual increase of 2.5 percent, or perhaps an even higher rate of growth, has continued throughout the decade 1950-60. Of the factors contributing to the growth of population in the country as a whole, immigration is today relatively unimportant. The population is growing largely as a result of natural increase, the balance of births over deaths. Although reliable official data on births and deaths are not available for the country as a whole, such evidence as does exist leaves little doubt of a growing gap between birth and death rates.

Estimates of the birth rate based on census calculations placed the true birth rate for the country around 1950 within the limits of 40 and 48 per 1,000 population, which is one of the highest birth rates in the world. While there is some variation in the level of the birth rates found in larger cities and the rest of the country, as well as between certain states as compared with others, the overall Brazilian birth rate is conducive to rapid population growth. General opinion is that in the past decade the birth rate, high as it is, has changed relatively less than the death rate.

If we assume a birth rate of between 40 and 48 per 1,000 population and an annual rate of population growth of around 2.5 percent, estimates of the true death rate for Brazil for 1950 were between 17 and 21 per 1,000 and the current expectation of life at birth was around 35 to 40 years. In the past decade there is no doubt that the death rate has been declining. Reductions of fifty

percent or more in the infant death rate have occurred in certain areas where public health programs have been introduced and where the rates were formerly very high. In such areas, death rates have declined in most age groups. Even if only the simplest of public health measures are further extended, all indications for the immediate future suggest still further reductions in the general death rate.

The immediate outlook for Brazil, then, is for a rapid population growth through natural increase. It will be probably far in excess of most countries of the world. Nonetheless, a rapid rate of population growth does not, in itself, pose the great problem for Brazil that it does in many countries of the world, because Brazil possesses vast unsettled areas. Its area covers over eight million square kilometers; potentially it should be able to absorb large increases in population. However, it is also true that not all regions of Brazil with high rates of rapid growth will be able to absorb increases in population. Particularly is this the case in such areas as the northeast where the true birth rates are high and where improvements in public health are yielding improvements in the death rate. There the rate of growth will aggravate the population pressure on existing resources. On the other hand, many other areas, particularly those where industrialization is occurring as well as isolated interior regions, could stand considerable increase from natural causes and by migration from overcrowded areas of rapid population growth.

2. Distribution of Population

As yet, the population of Brazil is very unevenly distributed, confined as it is to a two hundred mile band along the eastern sea-coast, to the capital cities, and to the southern and northeastern states of Brazil. Increases in the density of population are, however, presently occurring in other areas in the country. Important examples of relatively recent dense settlement in the interior have been in Sao Paulo state, in southern Mato Grosso, in northern Parana, in the "triangle" of the Minas Gerais, and in central Goias. Other important settlements in the interior have occurred in Rio Grande do Sul, in the Rio Doce Valley of Minas Gerais, in the Tubarao and Itajai valleys of Santa Catarina, along the San Francisco River westward from Salvador in Bahia, in southern Ceara, western Paraiba, and along the Parnaiba River separating Piaui and Maranhao. Vast areas, nonetheless, remain barely occupied. Almost half of the area of Brazil is in the states of Amazonas, Para, and Mato Grosso, where in 1950 the number of persons per square mile was 0.3, 1.0, and 0.4, respectively.

Another important feature of the population of Brazil is that both quantitatively and qualitatively it is among the most rural in the world. In 1950 in fact 64 percent of the population of Brazil was living outside the seats or district centers of municipios. In all, 31 percent was living in centers of 5,000 or

larger, 23 percent in centers of over 10,000, 20 percent in centers over 20,000, 16 percent in centers over 50,000, and 13 percent in centers over 100,000. In the decade 1950-60 the urban population, at least in the larger population centers, is believed to have increased more rapidly than the rural segments; thus a larger proportion of the total population is today living in the larger population centers than was the case in 1950.

Brazil's urban population is concentrated in a relatively few centers, for the most part state capitals. Among these, of course, are Sao Paulo and Rio de Janeiro which in 1950 ranked among the 16 largest cities of the world. Altogether in 1950 there were 14 centers which had populations which exceeded 100,000 population; by 1960 possibly 18 to 20 centers are now included in this category. With only a few exceptions, the larger urban centers are on the eastern seacoast. These large urban centers are now experiencing phenomenally rapid growth through in-migration. With the exception of Parana where there has been a population expansion into the interior, between 1940-50 all capital cities grew more rapidly than their respective states. We believe that this relationship has continued in the decade 1950-60.

3. Internal Migration

Although precise data are not available, the volume of internal migration in Brazil has been increasing in recent decades and will, no doubt, continue to grow in the future. Both "push" and "pull" factors are operating. The rapid growth of population through natural increase in areas such as the northeast will place even heavier strains on existing resources and, in consequence, tend to "push" people to areas of greater economic opportunity. Out-migration from the northeast especially during periods of drought is already a well-established pattern. "Pull" factors include; (1) increasing employment opportunities in urbanizing and industrializing areas and in certain agricultural areas, particularly in the south and central part of Brazil; (2) better communication and roads, and (3) greater knowledge of conditions in Brazil provided by those who have already migrated as well as by the government. For the most part those moving from rural areas can be absorbed most rapidly as agricultural workers in newly opened agricultural or in those already developed areas near to major industrial cities where agricultural workers are migrating to seek urban employment. This is the pattern we see in the south of Brazil, which is now attracting large numbers of migrants from Minas Gerais, and from Bahia and other states of the northeast. Migrants moving directly from remote rural regions to the larger cities have had difficulty in finding remunerative employment and satisfactory living conditions.

4. Points of Emphasis

We have touched on only a few of the important conditions, characterizing Brazil's present population development. We turn now to their consequences, regarding the extension of public health services in Brazil.

First, the rapid rate of Brazilian population growth requires a continuing increase in expenditures; if these services are to be extended and improved these increases must be disproportionately large. Furthermore, in a rapidly growing population children predominate and the ratio of productive workers to "dependents" will decrease. This means that increased expenditures have to be met out of the product of a relatively small proportion of the population. It also implies that if child and maternal health programs are given high priorities, these programs will require increasingly large shares of the total expenditures for public health. Moreover, increased numbers of surviving children invariably must lead to greater competition for funds for public services other than health, as for example, education.

Second, the present distribution of Brazil's population raises the question of whether at the present time it is even practical to think that public health services can be equalized for all segments of the country's population. The majority of the Brazilian people still live in and about small isolated population centers, and the costs of providing services to all such dispersed areas would appear to be prohibitive at the present time. Moreover, the very low density of the population and the lack of communication in many areas would render relatively ineffective any attempts to provide a graduated range of public health services according to the size of population centers. If, on the other hand, public health services were provided only in centers where large numbers of people have access to them or are benefited by them, the majority of Brazilians would be untouched by public health services. Such services would, moreover, be confined largely to the eastern seaboard of Brazil, since here are located the larger centers of population. Limiting services to these segments of the population is not likely to be an acceptable solution in a political democracy and no one does so suggest. Nor is it likely that a convincing case can as yet be made that gains made initially in the larger urban centers will later be diffused to the rural population. Qualitatively, the ways of life of those living in the rural and urban areas in Brazil are so different, the distances between them are so great, and the means of communication still too limited to expect that the gains of the city today will accrue to the country tomorrow.

Third, the increased internal migration, necessary if Brazil is to develop economically, creates public health problems and the need for increased federal and state administrative action. A consequence of receiving workers in the productive age groups is that these areas must be prepared both to provide public health assistance to new arrivals and to their families, and to prevent the spread of contagion and disease among the existing population. Increasingly, as the mobility of the population increases, government will need to assume increasing responsibility to provide care and facilities for those enroute to new areas to prevent illness and the migration of disease.

THE DISEASE SITUATION

In Brazil, as in many other countries where mortality and morbidity from preventable diseases are high, accurate statistics for evaluation of health programs are all but absent. It is possible, nonetheless to draw a few general conclusions about nationwide disease trends over the past 18 years. In some SESP areas, fairly reliable data are even available.

1. Prior History

Brazil's early development suffered extensively from the influence of the great plagues. Brazil was adversely affected by the world-wide cholera pandemic of the second half of the 19th century, but the disease did not persist. Plague was introduced into Brazil around 1900 and was a public health program of appreciable magnitude for a number of years, even in Rio. Accounts of yellow fever indicate that in Rio one epidemic, in addition to causing an estimated 80,000 cases, led to a marked depopulation of the city through people fleeing from the disease. As recently as 12 years before the establishment of SESP there was a full-blown yellow fever epidemic in the national capital. Smallpox was a serious public health problem markedly affecting the total death rate in Rio in epidemic years.

2. Current Problems

By 1942, the year SESP was started, none of the foregoing epidemic diseases were having major effects on the total death rate, although there have been recent sporadic outbreaks of jungle yellow fever (1942), occasional cases of plague, and episodic smallpox outbreaks.

Three other preventable diseases which played a major role in causing death and disability in the early history of Brazil, still maintain their statistical importance. They are tuberculosis, the enteric diseases, and malaria. In 1860, the first year of registration of deaths by cause in Rio, the tuberculosis death rate was unbelievably high. Although the rate has declined since then, it apparently remains the leading cause of death in most age groups in most state capitals. The present Brazilian tuberculosis death rates are, according to contemporary estimates, between 150 and 400 per 100,000.

Gastroenteritis is probably the major killer throughout Brazil in the younger age groups.

Malaria, one of the few diseases that is reported on a nation-wide basis, has remained at a high level during the past decade; 383,000 cases were reported in 1955. It has been epidemic as well as an endemic disease. Extrapolation from SESP data and personal observation and conferences in the Amazon region lead us to believe that the malarial incidence is currently increasing.

Current estimates of the true number of malaria cases run between six and eight million per year.

Another disease that currently threatens to become a major problem throughout Brazil is schistosomiasis. With infection rates as high as 80 percent in coastal Bahia and the northeast, the extensive migration from these to other areas where the intermediate host snail abounds may soon convert a local health problem into a national one.

It is impossible, even for SESP, to give rates and thus to note changes over the past decade, but diphtheria, tetanus, filariasis, Chagas' disease, pertussis, etc., all add to the unnecessary burden that preventable disease places on the Brazilian people and their economy.

Malnutrition is also a major health problem in Brazil, both in terms of specific deficiency diseases as well as decreased resistance to infection. The extent of the problem may be gauged by the fact that cases of Kwashiorkor may be regularly seen in the hospitals of Rio, one of the most prosperous of Brazilian cities. FAO data indicate that Brazil is low in consumption of protein, particularly milk and meat, and in fats and oils. Great disparity in distribution of food by area and by social class makes malnutrition an all too evident health problem among the poor.

In Brazil the toll of deaths from specific diseases is not accurately known. Essentially the only official reports are for the capital cities, which have less than a fifth of the country's population. Even these reports are subject to considerable error. It is clear, however, that there is much variability in death rates throughout the country. Calculations of the expectancy of life in certain cities made by Mortara and Moraes show tremendous variations. For example, for the years around 1950, the expectancy of life at birth in the Federal District was around 53 years; in Araraquara in Sao Paulo state it was 61 years; in 17 cities in the Amazon Valley it was 48 years; in Ilheus and Itabuna in Bahia it was 45 years; in Alagoa Grande in Paraiba it was 38; and in Esperanca in Paraiba it was 31 years. The lower figures are probably more typical of much of Brazil's population.

Changes in expectancy of life from around 1940 to 1950 show considerable gain in both the Federal District and in the 17 cities in the Amazon. The expectation of life at birth increased from 43 to 53 in the Federal District and from 37 to 48 in the Amazon cities. At all ages for which calculations were presented, the gains tended to be larger in the Amazon cities where SESP was working and the initial level was lower. Improved public health programs can make great improvements in the present life expectancy in Brazil. Greville has estimated, for example, that, if tuberculosis alone was eliminated as a cause of death in the Federal District, the life expectancy at birth would increase by about three and one-half years; elimination of infections and parasitic diseases as a cause of death would increase the life expectancy at birth by an additional five years.

These estimates clearly show the need for great improvements in the disease situation in Brazil.

EXISTING HEALTH SERVICES

1. The Constitutional Framework

The constitutional responsibility for provision of health services currently belongs to the states and municipios, yet responsibilities for public health programs as between the three levels of government have not evolved according to the law. In its 70 years as a republic, Brazil has had no less than four constitutions. In each the nominal or constitutional responsibility of the various levels of government has varied; in fact there has been an even greater variation in the actual powers exercised by federal, state and municipio governments. Both the first constitution of 1891 and the fourth of 1946 intended to give considerable powers to the states and municipios for providing public services, yet under each the federal government had some authority to legislate regarding matters of public health. In the interval between these two constitutions Brazil was ruled by decree with the federal government exercising all power. Even though the present law gives the states and local governments constitutional responsibility for the provision of health services, the Constitution does not specifically define the limits of power accorded to the various levels of government. Moreover, insufficient time has elapsed since the 1946 constitution for clear-cut jurisdiction to evolve, and the residual structure from earlier periods determines, probably more than the constitutional authority, where the responsibility actually resides.

The system of taxation as it has developed in Brazil likewise renders relatively meaningless the constitutional allocation of responsibilities for public services. Unless the various levels of government are given the right for collection of taxes and unless they exercise those rights they are without revenues for providing services except insofar as the federal government gives them funds. Throughout the history of Brazil, with the exception of Sao Paulo state, states and municipios have had only meager revenues from direct taxation. Thus, in 1950, of the total revenues dispensed for governmental services, about 50 percent was disbursed by the federal government, 40 percent by the state governments (of which two-fifths came from Sao Paulo state), and 10 percent by the municipios.

While there is a tendency among Brazilians to assume that differential revenues of the federal, state and local governments are a result of the centralization of all governmental functions under the Vargas administration, this is not entirely the case. The states have always had the power for levying land and property taxes (non urban) and the municipio the power for levying taxes on urban real estate, potentially important sources of revenue. Traditionally, however, the power and authority exercised by the land-owning class in Brazil has been such that states and municipios have not exercised

the authority constitutionally allocated to them to collect taxes from land and property. Property values are devaluated for purposes of assessment and the administration of collection is lax. Thus, while needed reforms in state and municipio administration were certainly delayed, the basically bad situation was not created in the Vargas period.

The size and population of states and municipios and the physical isolation of population groups have also affected the extent to which state and municipal governments have fulfilled their functions of organizing and dispensing public services. Although there are variations in the enforcement of laws, all states require about the same minimum population and a minimum amount of tax receipts before an area is recognized as a municipio. Underpopulated and underdeveloped areas are thus at a disadvantage regarding development of their public services. Extreme examples are the states and municipios in the Amazon Valley. As we have noted already, almost one-half of the land area of Brazil is in the three states of Amazonas, Mato Grosso, and Para, yet these states contain only about three percent of the country's estimated population. In these states the average sizes of the municipio are around 25,000, 14,000 and 8,000 square miles, respectively. No other states have municipios with average land areas approaching these, although in most states, municipios in the remote areas are large compared with those near the capital. The difficulties of providing services with a given amount of revenue to widely dispersed population groups is apparent.

In this connection, it is perhaps useful to compare the development of public services in the states of Sao Paulo and Minas Gerais. Both states have had considerable potential for economic development, but the public services provided in Sao Paulo far exceed those provided in Minas Gerais. Although not the only factor, the size and distribution of population are important contributory factors. Sao Paulo has a land area only a little more than two-fifths as great as Minas Gerais, but both states have roughly the same number of municipios. The average size of the municipio in Sao Paulo in 1950 was only 259 square miles (among the smallest average to be found among the states in Brazil), as compared with 584 in Minas Gerais.

2. Central Government

Federal activity in the health field extends back to the middle of the 19th century. In 1904 Dr. Oswaldo Cruz first organized services for combating yellow fever. Since then the federal government has assumed responsibility for control of diseases which cross state boundaries, notably epidemic and endemic diseases. The rural Prophylactic Service was created in 1919 for the purpose of combating bubonic plague, malaria and other endemic diseases among the rural population. Today, the most important unit within the Federal Ministry of Health, as judged by budgetary considerations, is the Department of Rural Endemic Diseases. In cooperation

with states, this unit maintains rural disease centers aimed at the control and treatment of such diseases as yellow fever, schistosomiasis, filariasis, Chagas' disease, plague, trachoma, yaws, leishmaniasis, echinococcus disease and brucellosis.

The federal government also assists in the handling of some specific disease control programs. The National Department of Health confine its activities to advising the various state departments of health regarding programs to control such diseases as tuberculosis, venereal disease, leprosy, mental illness and cancer. Likewise, under its Department of the Child, the federal Ministry only provides advisory personnel to assist the various state departments organizing programs for maternal and child services. Yet, in some instances, the Ministry makes substantial allotments specifically designated for use in state run programs, the most important at the present time is tuberculosis.

The Ministry now has the responsibility for the malaria eradication program except in Sao Paulo state. This program has been ineffective and poorly administered. Its progress stands in sharp contrast to the accomplishments of the A. Gambiae eradication in the northeast, to SESP's spraying programs in the Amazon and Rio Doce Valleys, and to the eradication program in Sao Paulo state. The United States contribution to the Ministry's eradication program is now many times that of its contribution to the SESP. Undoubtedly, the commodity contribution of the United States to this program would have been more effectively utilized if it had been accompanied by the calibre of technical and administrative competence characteristic of the SESP.

The Federal Ministry has assumed the responsibility for the control of the registration, training and standards approval of doctors, dentists and nurses. It finances most teaching hospitals; it has the responsibility for the port health service, for the registration of drugs, and for compiling statistics; and it controls the Oswaldo Cruz Institute.

The expenditures of the Ministry of Health are important for the record. In 1957 the Ministry of Health had jurisdiction over expenditures for health services aggregating over four billion cruzeiros, exclusive of the SESP funds. Of these expenditures, a little over two billion cruzeiros were spent by the National Department of Health, having responsibility, among other things, for the programs in cancer, mental disease, leprosy, tuberculosis, health education, etc. The National Department of Rural Endemic Diseases was also financed to the extent of some 1.2 billion cruzeiros. In the consideration of these relatively large amounts of funds, it is important to remember that they are devoted largely to non-preventive functions and essentially are less than public health in purpose and perspective.

The recent record in the public health field is somewhat more impressive as an outline of a program than it is in field accomplishments. The Ministry has lacked an adequate corps of professionally trained personnel available on a long-term

full-time career basis. The concensus reached by local observers indicates that the inadequacies of the Ministry's actual program have in the last decade become more, rather than less, apparent.

An important development in Brazil which has at the same time increased national responsibility for health programs and which has extended services to certain segments of the population is the creation of the Previdencias. The Previdencias, created under the federal social insurance laws, provide medical care as an obligatory benefit for contributors and their families. Some five million contributors are covered; most are in urban areas and are employed in commerce, industry, banking, transport, merchant marine, the federal government and railways and docks.

The federal government's participation in the Previdencias has spotlighted the practice of direct federal support concern with provision of medical and hospital care. Legislators from rural areas are therefore in a position to argue that the course of social justice requires that federal funds be granted directly to rural states for the purpose of providing health services.

3. State Governments

The dependence of states upon the central government for funds to operate public health services is in itself a reflection of their difficulty to assume initiative. Quite naturally, a great variation exists in the scope of the various state health services and in the total allocation of money of such services. In 1957, the proportion of the total state budget allocated to public health services ranged from 3.8 percent in Rio Grande do Sul to 12.5 percent in Maranhao. The average per capita expenditure was Cr. \$104, and only Sao Paulo, Rio de Janeiro and Parana states spent in excess of Cr. \$100. Sao Paulo spent Cr. \$266.40. The poor heavily populated northeastern states generally make low per capita expenditures. For example, in 1957 Ceara spent no more than Cr. \$18.60 per person.

Since 1957, expenditures have risen, but the increase primarily reflects inflationary changes. The 1960 Sao Paulo state budget allocation for public health services amounted to approximately Cr. \$400 per capita, while the per capita estimate for the rest of the country was no more than Cr. \$40-50. The expenditures for public health in Sao Paulo should be kept separate from those of the rest of the country, because if included they greatly distort average figures. The State of Sao Paulo had in 1960 a budget for health services exceeding somewhat that of the Federal Ministry of Health, upon which state services depend so heavily.

Among the most common state-regulated public health activities are the health centers and sub-centers. As we might expect, the states vary in the degree of coverage of municipios with health centers as well as in the quality and type of services offered. The programs for health centers in the two states of Sao Paulo and Minas Gerais interested us most, because together these two important states contain almost one-third of the population of

Brazil. The establishment of health centers was begun in Sao Paulo and Minas Gerais in the 1920's. Today health centers are established in most of the municipio sedes (county seats) of Sao Paulo and sub-posts in places of more than 3,000 population. On the other hand, in Minas Gerais where there are some 400 municipios, in 1960 there were 27 health centers, and 214 sub-posts, and of the latter 60 were without physician service and virtually non-operative.

In most other states the health center program is even less impressive. Most states have health centers in and about the capital and larger cities, but large portions of the states, invariably rural in nature, are not covered. Even when provided in the remote municipio centers, the service is of little consequence for the population because distances are so great.

States also provide special services, but again these vary from state to state and within the territory of a given state. These services are likely to be available only in localities in and about the capital, the larger cities, and the larger towns. States also maintain their own hospitals and assist in the support of other hospitals which they do not operate.

In general, the health services provided by states come under the category of medical or hospital care to a greater extent than under that of preventive health measures. The need to provide medical and hospital care as part of the public health services in Brazil is related to the poor economic and social conditions of the general population, to the shortage of medical and health personnel, and to the concentration of medical personnel in the larger cities and towns.

4. Local Services

Just as the states have had to depend upon the federal government for supporting their public health activities, so the municipios have depended upon the states. Purely municipio supported services are rare in Brazil; only in most occasional instances does the prefeitura pay the salary of a part-time physician for a health center or does it supply the building or rental costs or even assist in support for a local hospital. When they are found they invariably represent sporadic instances of generosity or political pressure upon the local authorities. After a change of political administration, these local contributions may be suspended. In sum, the provision of public health services is not yet recognized as the continuing responsibility of local governments.

Finally, Brazil does not have a notable tradition of privately-financed public health agencies. True, Brazilians recount with pride such activities as the system of Santa Casa hospitals, which were originally established as Portuguese philanthropic organizations. But these are exceptions, not the rule, and often they have had to be augmented by governmentally supplied funds.

5. An Observation

We believe that the division of responsibility for public health service leaves much to be desired. True, there are real limits on funds and corps of skilled personnel, but major improvements in service could still be made, were there changes in organization and administrative procedures. Such changes have assumed the air of being impossible because of the current attitudes of helplessness among all levels of government and the people concerned. We believe these attitudes developed because of the chain of dependency of state governments upon the federal government for funds and of the local governments upon states for services. This condition is not likely to be changed until states and municipios assume more responsibility for developing their own services independently and take steps to collect revenues to support these services. They have also developed because the political practices unfortunately characteristic of so many levels of Brazilian government discourage those who seek to have the various governments develop services in response to the needs of the people. When political favoritism rather than technical competence determine the selection of personnel, programs of expediency and inappropriate priorities are promoted in place of those which would bring the greatest improvements.

CHAPTER II

SESP: ITS ORIGINS, GENERAL DEVELOPMENT AND PROGRAMS

In this chapter we turn to an examination of the Brazilian-American joint experience in public health administration. The chapter has two points of focus. The first illustrates the bare bones of the SESP's historical and administrative development, In the second we turn to the various programs set up by SESP.

EIGHTEEN YEARS OF SESP

The SESP was initiated in 1942 following a meeting of the foreign ministers of the American states in January of that year. At that meeting the groundwork was laid for the initiation of a number of cooperative projects between the United States and the various Latin American countries. The United States' interest in calling this conference stemmed from a memo to President Roosevelt, submitted by Nelson Rockefeller, pointing out the importance and value of setting up bilateral cooperative endeavors to strengthen various phases of the economy, health, and education of the Latin American republics.

Quite possibly, the basis for Mr. Rockefeller's suggestion was his familiarity with the marked success of the program of the international health division of the Rockefeller Foundation which had been operating in Latin America through the early part of the 20th century. Its campaign in Brazil for the eradication of *Aedes Egypti*, the vector of urban yellow fever, and its campaign to eradicate *Anopheles Gambiae* in the northeast of Brazil to remove the threat of epidemic malaria were extremely impressive pioneer examples of international cooperation.

But the actual participation of North Americans in the SESP was undoubtedly dictated by the necessities of the second World War, which the United States had just entered. Manifestations of this awareness may be seen in the selection of the initial SESP programs in the Amazon and Rio Doce Basins. Both are described at length in later chapters of this report.

Although in the first three years of the SESP operation the United States' contributions were substantial, making up a far greater percent of the budget than those of Brazil, by 1945 the Brazilian share greatly exceeded that of the United States. In subsequent years the Brazilian contributions have grown, while those from the United States have remained virtually unchanged. The apparent relative disparity between Brazilian and United States contributions is made to appear much larger than it truly is because of the greater rate of inflation of the Brazilian cruzeiro in relation to the United States dollar. An earlier evaluation team some eight years ago commented that it was unable to find out in any detail just what the United States expenditures had been in the SESP program. Although it has been next to impossible for us to

unravel the exact total amounts of expenditure over the past 18 years, the total United States contribution to the SESP program seems to have been in the neighborhood of 17 million dollars.

Following the expiration of the original agreement, United States participation in the SESP program was on a year to year basis which made operations extremely difficult, but due to the high calibre of the United States and Brazilian top administrative personnel, the program was able to grow steadily.

The pattern of United States participation in terms of personnel followed a similar course to that for the contribution of financial support. In 1943-44 about 70 United States technicians were working in the program. This number steadily decreased to approximately 25, at which level it remained from 1946 onwards. During the past 18 years approximately 200 American technicians worked in the SESP program in Brazil with tours of duty varying from a few months to as long as eleven years. There was not only a quantitative shift in the personnel, but a qualitative one in terms of the roles in authority of the United States technicians vis-a-vis the Brazilians. While the United States technicians initially served in positions of direct administrative responsibility, the program soon recruited or trained competent Brazilians to take over the key roles while the Americans remained as advisors or consultants. The numbers of Brazilian personnel have steadily increased since 1942; at present there are over 3,000 Brazilians in the program.

Early in 1957, the director of the USOM in Brazil decided that the time had come to cut off the United States participation in the SESP program. Apparently, there had been discussion earlier within the SESP group, both among the Brazilians and the Americans, to plan for the eventual development of a completely independent operation by the Brazilian government, but the United States representatives had been reluctant to encourage drastic alterations in the administration solely to make it conform with the standard ICA procedures for foreign aid. Similarly, among the Brazilians there were some who felt that the joint program served to buttress their own position, because it strengthened SESP in its struggle to remain free from political interference.

Nevertheless, in spite of the grave misgivings in the Health Division of ICA/Washington and in the United States health field party in Brazil, on June 22, 1957 the United States Ambassador to Brazil did send a note to the Minister of Foreign Affairs in which he put forth the Mission Director's original suggestion. Our Ambassador requested that the Brazilian government take steps to set up a permanent purely Brazilian organization for SESP by June 30th, 1960. The Brazilian director of SESP immediately realized that after the new administrative position had been taken, it became mandatory to develop plans to maintain SESP as a stable organization.

Subsequently, a law was passed by the Brazilian Congress, effective July 1, 1960, which made SESP a permanent foundation, controlled by a deliberative council and administered by a superintendent. The Fundacao SESP now has its own administrative process, a specified jurisdiction, and a budget assured by law. In effect, although the Fundacao SESP is technically incorporated within the Ministry of Health, it is an autonomous body.

SESP'S ACTIVITIES

1. General Public Health Programs

We believe that it was fortunate that early in its development, the SESP program was under the direction of persons aware of the value of incorporating preventive medicine into curative medical programs. Today, immunization, prenatal care, child care guidance, some laboratory service, contact follow-up for venereal disease and tuberculosis, health education, etc., are integrated in most SESP health units.

SESP has programs which have affected all states in Brazil. It now operates or assists states in the operation of over 250 health centers and sub-posts in 16 states. In many of these states, SESP is virtually the only local health service outside of the capital cities. SESP has developed a rural health program of the highest order in terms of the organization of services, the maintenance of professional standards, and choice of disease priorities.

Tuberculosis

Tuberculosis is, from the viewpoint of economic growth, one of the most important public health problems in Brazil. The SESP tuberculosis program has lagged in some areas, but, fortunately, tuberculosis control has now been given a higher priority in recent SESP planning, and a cooperative program is being developed with the tuberculosis service of the Ministry of Health.

The tuberculosis problem is of such magnitude and the potential number of health workers SESP can mobilize is so small that conventional methods of control will, in all probability, not be adequate. An imaginative approach is needed to permit the development of a program of the scope required. The old, precise policies of obligatory sanitarium care have no place in a modern tuberculosis control program for Brazil.

Maternal and Child Health

One of SESP's most important recent innovations in the reduction of infant mortality has been the establishment of re-hydration centers. The scientific concept of parenteral fluid therapy in

treatment of severe dehydration accompanying diarrhea in infants has been well established for a number of years, but its practical application to a non-hospital setting in Brazil should be credited to SESP. By adopting generally a lifegiving technique, formerly extended only to limited numbers, SESP forged a new weapon for the battle against needless infant death. Despite the introduction of improved water supply and the development of a wide spread privy program in particular SESP localities, diarrheal disease has remained a problem of the first magnitude. Such efforts as rehydration centers, distribution of milk and instruction of mothers in the essentials of child care are necessary supplements to environmental sanitation programs to displace gastroenteritis as the leading cause of death.

Prenatal care, safe supervised deliveries, postnatal care, and virtually complete care for the infant and child up to two years of age are all offered in most SESP maternal and child health programs. These activities have been successful in lowering the infant mortality rate and reducing maternal mortality. The prenatal care has resulted in early detection of pre-eclampsia and consequent prevention of toxemias, discovery of potential dystocia cases which require the physician's attendance, and improved nutrition of mothers through diet counseling. The training programs for midwives through its stress on non-interference has undoubtedly reduced the toll of maternal deaths from infection. The midwife program plus the availability of a physician for difficult deliveries has brought a real service to the rural areas where SESP works. The postnatal care is less important in the prevention of mortality, but results in the prevention of some morbidity. Neither of these services are as fully utilized as the infant and child services.

In most SESP areas the infant and child services are utilized by essentially all levels of the community. While many adults will go to the private physicians, the children are invariably taken to SESP clinics. Usually this is for a continuing preventive type of care, stressing immunizations, anticipatory guidance, and sometimes diet supplementation through dried skim milk. Curative pediatric service is also available, thus furnishing a continuity of care which could offer a model for many other countries. The services of infants and children are probably best understood, most fully utilized, and most appreciated by the community.

Malaria

Probably the most obviously successful public health program SESP undertook was the residual DDT program against malaria. Towns such as Breves, where SESP had been unable to find even enough healthy laborers to build a hospital, were changed into relatively healthy places with a sufficiently healthy labor force to support new industries. Towards the end of the 1940's, the responsibility for malaria in SESP areas was taken away from SESP and vested in the National Health Service, where it has not been administratively well-handled. It would probably have been much more effective to

allow SESP to handle the spraying operations in these areas just as the state health department of Sao Paulo has handled its program. This would have prevented unnecessary duplication of local organization.

Other Diseases

SESP records lead us to conclude that venereal disease is a public health problem of considerable magnitude. SESP units have programs for detection and treatment of venereal disease in all patients coming to their attention. So limited is this technique, however, that it will never have much effect on the total problem. A mass testing and treatment program is needed to lower venereal disease morbidity in the general population. Venereal disease control does not deserve the priority given to tuberculosis control even though the former might be much easier to accomplish.

SESP has no specific programs aimed at controlling schistosomiasis; rather this responsibility has been given to the Department of Rural Endemic Disease. Although this problem unquestionably deserves the immediate attention of Brazilian medical research workers, we do not urge that it be fitted into the SESP program at the present.

Dental Health

SESP has a dental program which appears to be well-administered. Services are offered in topical application of fluorides and mass treatment of caries, particularly in the younger age groups. SESP has also pressed for fluoridation of water supplies, but this has been accomplished in only a few places. It is hoped that the dental program will not divert funds from more pressing public health problems.

Statistical Services

Some measure of the relative importance of disease problems and the costs involved in overcoming them are essential for setting priorities. When particular health problems are overwhelming, as in most places in Brazil, refined measurements are not necessary, and priorities are obvious. But, as programs unfold, it is important to measure accomplishment and to collect data upon which to base decisions on new priorities. SESP has evolved a statistics service which is necessary for the development of its programs. Aside from a minor fault of publishing reports based on statistically insignificant numbers, we are enthusiastic about its work. We trust that the director of the Fundacao SESP will continue his interest in improving the SESP statistical service, so that it will serve as an example to the other health services in the country.

Laboratory Services

Today the national practice of modern medicine and public health cannot exist without laboratory services. By virtue of the excellence of its laboratory service, SESP stands in sharp contrast to virtually all other health units we visited. All SESP laboratories in health units were used and used well. It may be desirable to improve SESP's laboratory effectiveness by scheduling a review of the procedures used and by establishing basic standard tests appropriate to the general needs of SESP as well as to the abilities of its technicians. It would be desirable to establish quality control checks on laboratory accuracy in order to maintain high standards of performance. New tests and techniques can also be introduced to simplify the work of the SESP laboratories. In particular, we urge that SESP give a high priority to developing adequate sanitary laboratory facilities for control of purity of water. In sum, we conclude that SESP has an excellent laboratory service but that it will continue to require imaginative regional and central office supervision.

Other Services

Although pharmacies do not usually fall within the purview of public health activities, the SESP system of pharmacies in all of their health units and hospitals would benefit from better regional and central office supervision. They are usually well run on the local level, but policies that permit such wastes as large-scale dispensing of i.v. calcium gluconate as a placebo in grippe should be revised. A standard pharmacopeia, frequently reviewed, is necessary for optimum, economic operations.

Health education of the general public has a long tradition in Brazil and SESP has incorporated it into its program. The present pattern of utilizing nurses, visitadores, and sanitarians to promote health education through their routine contacts with the public seems to be satisfactory. In the future it might be possible to reach a larger segment of the public by indoctrinating the school teachers with a few basic health principles with the hope that they would pass them on to the children. SESP is already well aware of the advantages of concentrating on school children, and many of its demonstration sanitation projects are located in the schools.

2. Environmental Sanitation

The evolution of environmental sanitation in Brazil since 1942 has been one of the striking contributions of SESP and the United States. That these activities have held a high priority until recently was a reflection of the great deficiencies of sanitary facilities in the country as a whole and, secondly, of the major part which these deficiencies undoubtedly played and still play in the disabilities and deaths from gastro-intestinal diseases.

The early work in the Amazon and Rio Doce Valleys was heavily directed to improved water supplies and excreta disposal. In this environment the engineering division of SESP grew to maturity, under excellent Brazilian and American leadership. The full-time employment of engineers working with a minimum of political interference provided the morale for maximum public service.

Although the creation of the Amazon Valley Commission (SPVEA) and the San Francisco Valley Commission (CVSF) gave reason for hope that these agencies would provide both the financial backing for and the sense of economic opportunities to extend sanitation work in these new areas, these hopes did not materialize. However, in 1960, at least the CVSF had begun to show signs of vitalizing the San Francisco Valley. The challenge to SESP engineers to help this organization to strengthen sanitary facilities in the area of its responsibilities still remains to be met.

After the second World War water supply programs for more widely distributed areas acquired top priority for SESP engineers. In 18 years SESP planned, designed, constructed, and in 42 instances operated approximately 131 public water systems, serving some 500,000 people in all, and even then only from public fountain or standpipes.

The great majority of water systems were installed in towns with populations of less than 2,500, although a few systems have been constructed or planned in towns having more than 10,000. SESP concentrated its work in remote towns having small populations, rather than in centers containing large groups of people. By accepting the definition of its role as public health mentor to rural Brazil, SESP did not seize the opportunity to advise simultaneously the larger communities of Brazil.

We believe that the water supply development record of SESP has not been based upon an orderly determination of public health or economic development priority. Greater stimulation of state and local responsibility in extending water facilities at a more rapid rate than in the past should be stressed. The advantages of self-supporting systems as a means to this end have been explored by SESP, but the practices are not yet widely applied. The provision of minimum service to relatively small areas without charge to the consumers perforce limits the development of sanitary systems to the amount of funds appropriated by the central government. Consumers can be educated to realize that the quality and quantity of service can (and probably should) be determined to a considerable degree by their own capacity to pay.

SESP engineers have been aware for several years that such practices as here noted hold major promise for the future and have in fact formulated national legislation to implement such policies. Unfortunately, this legislation has not yet been pressed to the point of passage and application.

Perhaps our most basic criticism, however, is on another plane. It is only in the most recent years that the United States counterparts have realized that SESP should undertake the obligation of encouraging and assisting state and local agencies in their long-range planning. The major developments in the states of Sao Paulo and Rio Grande do Sul in water and sewerage facilities, both in recent years and as projected to 1965, may easily have had their spiritual origin and strength in SESP examples elsewhere, but direct official participation or stimulation by SESP engineers in these important programs has not been apparent. On the contrary, we were impressed by the fact that these examples of engineering, fiscal and economic planning have had little effect upon SESP's own concept of its role in national planning. Fortunately, the SESP leadership has become increasingly aware that the former program principles need major adjustment for the future, if progress is to keep pace with population growth, let alone exceed it. SESP can take some pride also in the fact that the state programs noted above are manned in part by former SESP trained officials.

Installation of sewers and sewage treatment plants has naturally lagged far behind water supply. We take no exception to this order of priority. Yet, SESP's exclusive devotion to smaller population units, its deliberate avoidance until recently of the sewerage problems of larger centers has been, as with the water program, unwise. Public health endeavor must be concerned with the totals of people ultimately protected against environmental diseases.

In similar review, we suggest the wisdom of an early appraisal of the privy construction program, even though this effort does not represent a large sector of SESP activity. Not only do we wonder about the problem of maintaining the present number of privies, but whether Brazil is not engaged in a losing game of building even enough to match its annual population increase. The merits of privies as compared with sewers should be reviewed, particularly with regard to the overall public health results and the relative magnitude of expenditures. Perhaps, the very suggestion of evaluating the privy program borders on heresy, but the merit of an objective look cannot be gainsaid where the resources of SESP now and in the future are so likely to be strained. In this area local community responsibility certainly must be increasingly stressed if any future optimism is to result.

In other programs such as industrial hygiene, stream pollution abatement, and bathing beach control, new problems have emerged and are receiving SESP consideration. Quite properly, these new needs for SESP concentration are being carefully assessed. If remedies are being slowly undertaken, it is because the problems do not pose the critical issues already obvious in the water and sewerage situation. Nevertheless, they too will grow in relative and absolute significance; whether they will be handled locally is again a test of SESP's ability to educate local authorities through national stimulation and appraisal.

3. Medical Care

Although all agree that many of the significant accomplishments in reduction of morbidity and mortality in SESP areas are clearly due to what constitutes conventionally defined public health programs. SESP has, nonetheless, spent the bulk of its budget on providing medical care. From its earliest days to the more recent assumption of hospital care in the San Francisco Valley and elsewhere, SESP has accepted the responsibility for meeting the pressing needs for medical care in rural areas. It is doubtful whether an organization could operate in rural areas, if it were to concentrate only on the public health side of a medical program, because the immediate and chief demand of the people is for medical care. If it was not satisfied, they probably would not be interested in or see the need for development of safe water supply, immunization programs, safe excreta disposal, etc.

Yet it should not be overlooked that successful SESP medical care programs often pave the way for public health programs with their more lasting benefits. In addition, the concentration of curative and preventive medical services in one agency permits continuity of care. On the whole, we observed that the bulk of SESP's medical care effort affected only the poor; in most towns adults who could afford private medical care preferred not to use the SESP's facilities in spite of the apparent fact that in several instances, the private care appeared to us to be of a lower professional standard. As a result, the less-productive lower income group received the better medical care. We were particularly impressed with the standard of medical care in the SESP health centers. It is probably well above the average of Brazil despite the large turnover of young doctors in the lower echelons. We noted as among the more significant factors in maintaining the high level of medical care, the SESP's system of supervision and reporting and the attention it devoted to maintaining a splendid esprit de corps. As is inevitable, unfortunately, in some areas the vitally needed field supervision has been allowed to lag. For example, in Amazonas the nurse in charge told us she was quite concerned about her lack of opportunity to make field visits. The physician-director expressed less concern about his corps of physicians which was actually being given almost no field supervision. If SESP must use inexperienced physicians in remote posts, it must also maintain, if not expand, its program of well-planned field supervision.

Good hospital care is always expensive. SESP has 25 hospitals. From what we observed, these hospitals offer good care, and, as might be expected, they take a large share of the SESP budget. We realize that it is highly unlikely that SESP will be able easily to withdraw from the hospital program, because in most places, there is no appropriate local agency available to take over the responsibility. Indeed, in one area where SESP has turned over a hospital to municipal authorities, we discovered that services degenerated to the point where informants told us: "Before the hospital was the best in the city, now it is a great misfortune to be sent there." It seems inevitable to us that SESP must continue to operate its several

hospitals, yet we caution against expansion of this function. Fortunately, according to our view, the SESP director is concerned by the rising costs of hospital care and plans to institute a study to determine alternative means for providing adequate hospital care at minimum costs and under local jurisdiction and management.

Although it is clear that SESP cannot appreciably reduce its medical care programs, the heavy case load of preventable disease (even in areas where it has worked for 10 years or more) makes it obvious that SESP expansion should primarily be in the more conventionally accepted field of public health. To attempt to improve health conditions in Brazil by the curative route may be likened to trying to bail the ocean dry. Expanded basic public health programs are the only apparent solution to Brazil's major health problems.

4. The SESP's Training Function

All members of the team, individually and collectively, concluded that the most important accomplishment of SESP over the past 18 years was its training program which has reached approximately 3,600 health workers. Repeatedly, we were told "SESP is a school." Our informants generally went further to explain that the "school" was not just the formal programs, but particularly the on-the-job experience that doctors, engineers, nurses and auxiliary personnel received while working with SESP. SESP's "alumni" include a long and distinguished list of health workers, starting with the Director-General of the World Health Organization.

We met numerous health workers who had left the SESP organization and found that almost invariably they had carried the SESP philosophy with them to their new jobs. Thus, by giving training to some 400 physicians, the SESP program has had a real impact on the group of Brazilian physicians trained in the field of public health. The "SESP philosophy" is not to be passed off lightly, for it is manifested in personnel willingly working nights, Sundays and holidays, in personnel striving constantly to improve programs and initiate better techniques, and above all in tremendous esprit de corps. In addition to training workers for governmental health agencies, SESP has been the training ground for the newly initiated Brazilian sanitary engineering profession; many ex-SESP engineers have struck out on their own and have greatly strengthened the sanitary engineering resources of Brazil by adding the force of private enterprise.

The table shows that most SESP trainees were in the special programs for auxiliary health workers. Our observation of these short practical courses bears out the general opinion that they are of excellent quality, that they are well-designed to meet existing needs, and above all that they should be continued.

In addition to training its own personnel, SESP has given observation or demonstration training to a number of people from outside organizations, including personnel from other countries.

PERSONNEL RECEIVING FORMAL TRAINING, 1942 - 1959*

PROFESSIONAL PERSONNEL			AUXILIARY PERSONNEL	
Type	Trained in U.S.	Trained in Brazil	Type	Trained in Brazil
Physicians	235	215	Sanitation auxiliaries	584
Engineers	113	46	Public Health visiting nurses	495
Dentists	27	--	Hospital auxiliaries	324
Graduate nurses	84	195	Laboratory technicians	286
Undergraduate nurses	--	359	Midwives	551
Others	53		Others	62
Total	512	815	Total	2,282

* IN ADDITION, IN-SERVICE TRAINING THROUGH SESP REACHED SOME 12,000 PERSONS.

In one area medical students are introduced to the SESP type of operation. Whenever practical, these activities should be expanded to serve both as a recruiting mechanism for physicians and to give the students going into private practice an idea of how preventive and curative medicine may be effectively combined. Among its training activities, SESP maintains a fully accredited nursing school in Manaus which partially fills a high priority need for the whole north of Brazil. SESP also constructed the nursing school in Sao Paulo. In addition to these major projects, it has subsidized other nursing schools and has materially advanced nursing practice.

One point of concern about the SESP's training effect is what we sense to be a lack of appreciation of different levels of emphasis. We concluded that the SESP leadership, while it did understand the full value of giving practical training to visitadores and sanitarians to meet the needs of today, did not appreciate the importance of giving longer, academic training to those whom it needed to prepare to be Brazil's public health leaders. We felt that more effort must be concentrated on alternative ways to meet new problems and on devising criteria to base decisions regarding the rehandling of old problems. For example, we repeatedly were told that the Sao Paulo School of Public Health was "too theoretical." Of course, excessive theoretical emphasis should not be placed on the training given to lower echelon workers, but everywhere else it is recognized that rigorous analytical training is far superior to "trade school emphasis" in preparing leaders. If aspects of the Sao Paulo theoretical curriculum seem ill-suited to Brazilian needs, particularly its long run as contrasted with its immediate needs, then the curriculum needs to be strengthened -- not made less theoretical but given a better theoretical orientation. We believe that SESP has sufficient prestige to induce the Sao Paulo faculty to consider specific changes. The SESP appears to be the principal Brazilian health agency sending appreciable numbers of students to the Sao Paulo School.

CHAPTER III

INSTITUTIONAL DEVELOPMENT AND RELATIONSHIP TO OTHER GOVERNMENTAL AGENCIES

We have been particularly interested in analyzing how SESP developed, both as an example of an experiment in international cooperation and as a Brazilian institution. SESP, with its eighteen year history, is one of the earliest bilateral programs entered into by the United States and another country. By almost any criteria it must be rated among the most successful of such programs. Because it has differed markedly from other governmental institutions in Brazil and because, despite its unorthodoxy, it has been able to sustain itself within the structure of Brazilian government, its evolution is therefore of concern to policy planners in host countries who are seeking to introduce innovations into their governmental institutions which too often are rigid and unadapted to their changing goals.

We believe what is needed is a way of looking at the development of the SESP program over time. In this connection, we propose that in any program the principles of organization and the goals should be specified. Planning towards these goals and achievements should be an integral part of programming. In addition, specific program goals should be synchronized within the context of broader goals both of a bilateral program and for the improvement of conditions within the host country. These are the harder tasks for those shaping the development of programs. They are, moreover, the tasks of top echelon leadership rather than the rank and file.

The first section of this chapter deals with the principles and objectives which have characterized the SESP over almost two decades of operation. Subsequent sections consider the ways that SESP has accommodated itself to those governmental agencies which bear the responsibility to improve the health conditions of Brazil.

PRINCIPLES AND OBJECTIVES

SESP's great achievement is that it has on the whole developed a set of democratic and rational principles for organization and administration, distinct from what exists elsewhere in governmental institutions in Brazil. In establishing specific principles, SESP has attempted to correct abuses of administration customary in Brazilian bureaucracy. It has built a career corps of public health personnel whose selection is based upon technical competence rather than political favoritism. It has employed personnel on a full-time rather than part-time basis with the view to building loyalty and improving service. It has insisted upon self-determination of the use of funds allotted to its operation and maintains strict accounting of these funds. Finally, SESP has emphasized the importance of the unit of service at the local level.

In achieving these principles, SESP has had more than usual success. As we traveled about Brazil visiting local operations, we found little political interference in the operations of the SESP. This principle of operation has come to be understood and respected by those outside the organization. Unlike services of other more typical governmental organizations in Brazil, the type and quality of SESP services is uniform. Standardized operating procedures have been developed.

In developing its principles of organization and administration, SESP has benefited by being created as a binational program independent of Brazilian governmental bureaucracy. In addition to the financial and technical assistance gains, there is the general belief that without its binational status, SESP would have been subjected to political interference which would have nullified the principles for which it stood. Moreover, the particular type of binational status, with administration the responsibility of Brazilians, has added to the prestige of the principles developed by SESP. That effective and honest principles of administration could be adapted by Brazilians to Brazilian problems has created a favorable public image of the organization. More difficulty has, however, arisen in establishing program objectives than in establishing principles of organization and administration. At times it has appeared that these objectives have been so poorly defined that the program for which SESP had responsibility was one which had grown by sheer accretion rather than by conscious design.

In the beginning years of operation objectives were not a problem. With the end of the war emergency and the return of Brazil to a constitutional republic, objectives were less clear. SESP was given support from both the Brazilian and United States governments because of its wartime successes, and its continued existence immediately after the war was justified by having it operate the service it had established during the wartime emergency.

Later, legislation was enacted by the federal government for development projects in the Amazon Valley (SPVEA), the San Francisco Valley (CVSF), the dry areas of the states of the northeast, and the frontier areas of the southern states of Brazil, and SESP was designated as the agency to assume responsibility for health conditions in the designated areas. Generally, this legislation applied to regions rather than to states; these were areas without medical care and public health services.

During the period in question SESP ordinarily began its work in the new areas both before additional funds were available for its operations and before the details of the development programs had evolved. Whereas its wartime operations had been confined to only a few states, these new responsibilities put SESP in control of operations in many states including six within the sphere of the Amazon Valley authority, and four affected by the Commission for the San Francisco Valley. SESP became involved in complex administrative arrangements involving other governmental agencies such as the regional development authorities as well as additional state and

município governments. The expansion of its responsibilities posed difficulties which SESP had not experienced during its earlier years. It met, for example, considerable political pressure to establish and maintain operations where they were not economically feasible, such as a costly hospital program in the San Francisco Valley.

Working with SPVEA and CVSF brought SESP in contact with one of the omnipresent and brutally negative realities of Brazilian bureaucracy, procrastination. SPVEA has never completely met its financial commitments to SESP. While CVSF has been a more reliable financial contributor, it has not increased its contributions as it had agreed to do. Both have diverted their funds to other types of projects. As a result, SESP has been left with the financial burden for the operation of certain services which the development authorities were expected to bear.

Similarly, in the late 1940's and early 1950's SESP contracted with certain states to undertake operations in areas where no medical care and public health services were provided. The agreements called for large financial contributions from the states, but again here, too, SESP has borne most of the financial and personnel responsibility for these operations. For example, SESP's 1947 agreement with the State of Bahia for services in the cocoa-producing area has been honored in the breach by the State; Bahia has not made the agreed upon financial contribution.

Thus, other agencies came to assume that SESP would provide medical and public health services where they were non-existent, irrespective of SESP's being given funds. And, SESP, lacking a clear-cut policy of where and under what conditions it should work, to a great extent yielded to pressure to work wherever it was asked, providing it was kept free from political interference. SESP's record of activity was largely one of providing its traditional type of service in a larger number of remote localities. High operational costs absorbed a large proportion of its budget so that its latitude for innovating activities was reduced.

The need for more clear-cut program objectives became even more pressing as the change in status of SESP from a binational to a Brazilian agency emerged. Two crucial questions were involved:

- (1) Should SESP be integrated into the structure of the Federal Ministry of Health or be established as an autonomous agency and
- (2) What should be the scope of activity of SESP once the binational status was terminated.

INTER-GOVERNMENTAL TIES

1. Relation to State Governments

An evaluation report was presented by the United States staff of SESP in 1956; and presumably it has the support of Brazilians, too. It emphasized the failure of the Federal Ministry to accomplish local public health services. It recommended that in the future SESP should put its emphasis on developing local health

services by working through existing state departments of health. The report delineated for SESP an area of organizational activity distinctly different from the one in which it has previously operated.

In 1956, the first "cooperative" program between SESP and a state department of health was established by agreement with the state of Sergipe. Since then, cooperative agreements have been established with five other states: Espirito Santo, Maranhao, Ceara, Rio Grande do Norte, Piau and Mato Grosso.

The scope of cooperation varies considerably. For example, in one state, the regional director of SESP was made the state's Director of Health. In other states, the cooperative agreements have involved dual rather than joint responsibility for operations, with SESP assuming responsibility for operations in particular areas, the state for others. A third arrangement exists in Mato Grosso where the state bears all the financial costs, but SESP administers the operations in certain areas. With the exception of Espirito Santo and Mato Grosso, the states with which SESP has entered into cooperative agreements are in the northeast; they include some of the poorest states in Brazil.

Occasionally where cooperative agreements have not been signed, SESP has agreed to strengthen some existing local operations. Characteristically, these activities are in remote areas, where there are difficulties in obtaining personnel, and where medicine and equipment are in short supply. Again, the details of these specific arrangements vary considerably. Ideally SESP would have preferred to operate in a technical assistance capacity by training personnel and assisting in the organization of services, but it has often had to do much more, such as supplementing the salaries of physicians in order that they can render full-time to their post, as well as supplying medicines and equipment.

The impact of this type of cooperation at the state level has also varied. These arrangements have probably been most successful in Pernambuco, where SESP has had a number of operations since the late 1940's. Recently a new agreement with the state was negotiated to provide technical and financial assistance to interior state health centers and hospitals. Pernambuco officials have consulted with the SESP regional director in formulating a five year plan for improving and extending health and sanitation services throughout the state. The SESP and the state officials have delineated priorities, have planned training programs, and have defined divisions of responsibility.

In other states, notably Minas Gerais and Bahia, where SESP has operated for many years, progress under the agreements is not good. True cooperation, much less any enthusiasm, on the part of the state departments of health in both Minas Gerais and in Bahia has not been forthcoming. The possible factors responsible for the difference merit some consideration. First, it may be argued that in those states where SESP assumed full responsibility for operations, the state came to expect that it would continue to do so. Bahia,

as we have indicated, has been singularly unabashed in abrogating financial responsibility in agreements it incurred with SESP. Likewise, Minas Gerais does pay but is generally slow in reimbursing SESP on its financial commitments. In the other states where SESP first assumed financial assistance for operations, the states have likewise been little inclined to provide services. However, developments in Pernambuco indicate this is not an inevitable result.

Crucial differences perhaps reside in the resourcefulness and personality of the regional director in Pernambuco as compared with his counterparts in such states as Minas Gerais and Bahia. More important, however, are perhaps the size of the states and the achieved "demonstration effect" of SESP services in the three states. Pernambuco is a relatively small state as compared with both Minas Gerais and Bahia. The earlier services of SESP in Palmyra and surrounding towns were, moreover, located within a relatively short distance from the state capital and are connected by good roads to it. Perhaps because operations were located near the state capital, the opportunity existed for these operations to come to the attention of state health authorities. Such has not been in the case in either Bahia or in Minas Gerais.

We question whether SESP, working in interior locations, can expect its efforts to be observed and appreciated by state health personnel who rarely travel any distance from the state capitals. If SESP wishes to stimulate improvements in state services and expects to do so by demonstrating that it can provide services efficiently, it must examine the validity of the commonly held assumption that the interest, respect and financial support of the state bureaucracy are gained by working in the interior and isolated localities. A new and different strategy may be required to influence and bring the impact for change upon recalcitrant and unyielding state bureaucracies. In the future SESP should extend its participation in providing services in areas where demonstrable results may be achieved among large population groups and where its efforts will be easily observable to state health authorities and to politicians.

Such perhaps are the hopes of SESP as it now extends its sanitation program. Deviating from its former course of concentrating its services in remote, poor and neglected areas, SESP's new sanitation program is being organized to achieve rapid results. Recently, SESP has signed agreements with several states to work in areas where it has had no other operations. In certain instances, these are localities where the conditions of life and economic development are most promising, where receptive responses are to be expected because of the higher levels of income and education of the population, and where the area is more densely populated.

The law creating Fundacao SESP specified the objectives of SESP. These include, among others, continued organization and operation of public health and medico-hospital aid services in areas where programs of "valorizacao" are being or will be developed, as well as coordination, organization and administration of services in states whose governments may ask for them. There seems little doubt as to which of these objectives is to receive priority in the

immediate years ahead. At the present time there are few plans for new health centers and hospitals, for which SESP would have the full financial and operational responsibility. Wherever plans for new operations are underway, they are chiefly in cooperation with states and increasingly involve contributions from states.

Although SESP cannot immediately withdraw from its responsibility as an operating health service, it is concentrating on re-making its role to one of supplying technical assistance to state departments of health. Moreover, when states now seek augmented assistance from SESP for improving their existing services, SESP gives these requests high priority. In states where the response from state authorities remains apathetic, the policy will be to restrict the expansion of SESP activities; perhaps existing programs will be maintained, but no more will be undertaken. In some states, where the cost of operations has been great and where state obligations have not been met in the past, pressure may be brought to bear upon these states to pay their debts or face the possibility of the complete withdrawal of SESP support. Examples in this connection involve the present agreements of SESP with the state health departments in Minas Gerais and Bahia. Heretofore, SESP has been reluctant to close out its operations, because of unfavorable political repercussions. However, as demands and opportunities increase for more active joint cooperative endeavors with states and municipios, SESP may be in the position to reverse its customary procedures.

In the meanwhile, there is no question that SESP has provided considerable incentives to the states in order to obtain their trust and to find avenues for mutual cooperation. Without the benefit of formal agreements, it has in many cases provided training for state personnel. In some instances, as in the case of the tuberculosis program in certain areas, it has been willing to organize and administer services for which the states have been given credit. Furthermore, it has given moral support to state health departments as the latter have striven under the adversities of political pressure to raise standards for personnel and services. Finally, SESP is yielding in some of its time-honored principles of organization and administration in order to adjust to the conditions within certain states. There is a growing awareness within SESP that the economic resources in certain states render it impossible at the present time for states to replicate the standard types of services SESP has operated, and that in the long run it may be advantageous to start now with limited improvement of services as they exist. SESP is providing training for physicians and other personnel in state operations, and in some cases is yielding on its principle that personnel must be employed on a full-time basis. SESP stands firm, however, on the principle that employment should be made on the basis of merit and not political preference. It insists on strict accounting of funds it provides. It intends to yield on no principles which run counter to honest administrative practice.

Now that SESP is a permanent Brazilian agency, there will undoubtedly be new pressures from state officials and politicians. But one important advantage of the new status of SESP should be emphasized. For the first time, SESP has an assurance which will

enable it to enter into long-range planning with states regarding priorities in health programming. Such planning may in the long run result in the replacement of disparate activities of many state health services. It may also help to gain the support and confidence for public health activities among politicians, some of whom seem ready to acknowledge the importance of improving the health levels of the population.

2. Relation to Local Government

Throughout the history of SESP, support has been given to the idea that in a democratic society, public services must evolve at the local level. Today SESP has spread its operations to include work in some municipios in the country, generally concentrating its work in the seats of municipios. In most of the communities in which SESP has worked, because there were few if any medical services available to the population, particularly the poorer segments, its entry into the community was very welcome.

While one finds little disagreement within all ranks of SESP personnel that efforts should be extended to obtain the active cooperation and material support of local governmental and other leaders, it is somewhat surprising that SESP has not made more systematic effort to achieve this goal. The situation is being remedied in the sanitation program by SESP; development of specific procedures and mechanisms as preconditions for beginning work in a community is now routine procedure. Similar procedures have not, however, become general policy with regard to health centers and hospitals. The reasons for the tardy enlistment of active community support deserve some attention here.

First, SESP's entry into the community, as in the case in the states, did not depend upon local authorities, however welcome it might have been. Money and personnel for operation of services were available independently of the local government and have continued to be so. Thus, the initial give-and-take involving local government was not present to set the precedent for active local participation.

Second, SESP personnel were generally from outside the community, and with the autonomy granted SESP, its officials were under no compulsion to adapt themselves to the intricacies of local politics. The principle of political non-interference under which SESP has always operated was generally interpreted to mean that personnel had institutional support for avoiding contact with local authorities, lest such might lead to political entanglement.

Third, there is no tradition in Brazil for the municipios to provide their own public services. General public opinion in Brazil, even in a state such as Sao Paulo, accepts the dependence of the municipio upon the state government for providing these services. Local officials are willing, therefore, to accept SESP services without assuming any responsibility for assisting or providing them.

What is unexpected, however, is that considering the importance which SESP has attached to developing local services, it has so long delayed efforts to attract active support and assistance in its program.

Fourth, there is the tendency of SESP personnel to believe that assistance from local government is not possible because of the meager revenues at the latter's disposal. We gained the impression that local SESP officials often made no attempt to solicit understanding and tangible support from local governmental and other leaders. Of course, we found many isolated examples where the prefect provided the building for a health center or paid the rental costs, or in some other measure, assisted in promoting SESP programs, but these examples reflected the particular initiative of individuals both within SESP and within the local government; they are not the result of standard operational procedure within SESP to obtain local support.

Fifth, SESP has been slow in evolving administrative procedures whereby municipios might be interested to enter into agreements with SESP. Such procedures have evolved for agreements between SESP and the states of Brazil in local sanitation programs, but not for cooperation in health centers. Exploration of this matter, somewhat along the lines of the sanitation program, seems to be needed.

3. The Focus of Sanitation Programs

In recent years, SESP has sought to obtain local support for its water supply and sanitation programs. Increasingly, it has tended to establish local support as a necessary condition for working in a given locality. Until 1960, most of these efforts, however, were concentrated on small population centers.

In the earlier years, SESP made outlays for the construction of city water systems, and it developed local sanitation programs in the communities in which it operated health centers, defraying the costs as it did in the case of providing medical care and other public health services. These procedures have over the years been drastically altered and attest to the lack of rigidity in operational procedures at least in this segment of SESP's operations.

In the case of the water supply program, SESP appreciated from the first that it did not have the financial resources necessary to complete programs particularly if the expensive projects were not maintained by the municipios. This factor underlined the importance of obtaining community assistance in planning for every stage of the water system as well as SESP's enlisting the financial support of the municipio for construction, maintenance and operation. Today, SESP offers technical assistance to municipios in drafting plans for the construction of a water supply system, and it will, under an agreement in which the municipio defrays the financial obligations, assume responsibility for construction and/or maintenance and control. As experience has shown, the requests for services are far in advance of the personnel available for carrying

out such work. Considerable credit is due the technicians in this program who have assembled facts as to the community resources and plans, and who over the conference table have come to terms with municipio authorities. Wherever terms have not been agreed upon, local authorities have at least had the experience of being made to realize they must bear some responsibility for assistance they receive from the central government. This is an experience which does not come often to the municipios, and may in the long run; foster a different attitude on the part of the municipio as regards its responsibility for discharging public services.

The well and privy program has also undergone changes. Early experience revealed that, while the services provided by the health center might be needed by only certain segments of the population, the need for improved sanitation was general among the poor and rich alike. What was needed for improvement of sanitation therefore, was motivation on the part of the entire community. Sanitation personnel began to assemble evidence as to the extent of this need, usually by preparing maps of the towns in which health centers were located. It is largely this personnel who established the precedent for community appraisals, a procedure which has since been used by health centers in determining where educational work should be concentrated, in determining progress of work in terms of incidence of certain diseases, death rates, etc.

The SESP's sanitation personnel have come to use the information at their disposal to seek the support of local authorities for assistance. Local cooperation in the form of materials, transportation and outright financial commitments has not always been obtained, but with experience the SESP sanitation workers have increasingly demanded that local support in some form be a necessary condition for SESP assistance. If the municipio authorities fail to give any help in the sanitation program, SESP is prepared to relinquish its work in a given locality, and move to a community where there is tangible support. In addition, SESP has evolved specific types of agreements involving the responsibility of the municipio and individual families, which must be fulfilled if SESP is to work in a given area.

The sanitation programs have offered greater possibilities for experimentation than the program for health centers and hospitals. As compared with the latter, the locale of operation may be more easily shifted. Further, the need for improvements in sanitation are everywhere present. Since for the most part other governmental agencies have not provided sanitation programs, SESP has the opportunity for work in a larger range of communities, many of which have greater financial resources and are more developed economically.

In certain states, SESP has launched sanitation programs in advance of health centers. Here it is hoped that the experience of gaining local support may be carried over in planning for health centers where they are to be established. In still other states, such as Mato Grosso and Goias, agreements are being signed between SESP and the states, whereby SESP has the jurisdiction and state support for sanitation programs in municipios traditionally outside the jurisdiction of SESP health centers. These developments

may possibly represent promising experiments in enlisting local community support, as well as extending the influence of SESP.

It is at least our impression that sanitation personnel, to a greater extent than is the case of other SESP personnel, have more interest in and awareness of community conditions and the local leadership structure, and in general more experience in how to pool efforts. Among sanitation personnel there also appears to be less rigidity as to what are desirable operational procedures, indicating a greater potential for adjusting to local circumstances.

4. Relation to Federal Ministry of Health

The relationship between the SESP and the Ministry of Health has been nominal. Under the present conditions it may continue to be so. When SESP was created as a binational program in 1942, it was established as an autonomous service within the federal Ministry. While contracts were jointly signed by the Minister of Health and by a representative of the United States government, SESP was, in effect, free to appoint its own personnel, to disburse its own funds, and in general to function as an autonomous service. The autonomous agency situated within the structure of existing bureaucracy is commonly observed in Brazil today and is the structure which exists for many of the programs created under binational agreements. A feeling of futility regarding efficient and honest administration within many existing Brazilian federal ministries today is so general that it has become institutionalized practice to gain federal government approval for the creation of autonomous federally supported agencies.

The fear of political interference has no doubt been an important factor in explaining why SESP has made so little effort to stimulate or enter into cooperative relationships with the Ministry of Health and its various departments. There has been one important exception involving cooperation between a department in the Ministry and the SESP. In recent years the tuberculosis unit within the National Department of Health, certain State Departments of Health, and the SESP have worked together to develop procedures for screening and for the control of tuberculosis. This effort is not to be minimized, particularly because tuberculosis is one of the most critical Brazilian public health problems. Cooperation is also beginning to be found between the National Department of the Child, the corollary State Departments of the Child, UNICEF, and the SESP, stimulated in the main by the coordinating efforts of UNICEF in Brazil.

SESP, it would appear, has avoided involvement with officials at the top level in the Ministry of Health. Although seeking support to be constituted as a permanent agency within the Ministry of Health, legislative support has been obtained for the continuance of the SESP as a special service outside the control of the Ministry. Under the law which has created the new Fundacao SESP, its control and program is relatively independent of the Ministry. As we noted earlier, the control of the Fundacao is exercised by a deliberate

council of seven persons of which the Minister of Health is but one member. A board of control, with only one of its three members from the Ministry, is in charge of inspection and financial arrangements. Program objectives are, as we have also noted, specified by law. The Fundacao, moreover, has an assured annual budget never less than that of a previous period, and employees with more than two years of service will be entitled to the usual benefits accruing to federal employees.

The reasoning within SESP appears to be that the constitutional responsibility for providing public health belongs to the states and that SESP achievement would be greater if it assisted the states to carry out this responsibility. Also important, no doubt, is the view that political interference will be less of an obstacle in working with state governments than in working with the Ministry.

Expedient and desirable as the creation of the SESP as a Fundacao beyond the control of the Ministry may be in terms of the short-run period, the result of this action is not without its inherent short-and long-term hazards. First, the short-term dangers: the SESP is now under the control of a deliberative council composed not only of the Minister of Health, but of seven other members of governmental ministries or federal government agencies. There is little optimism in the assumption that eight members will pose fewer difficulties for the SESP than would one. Indeed, the possibility exists that more problems may arise as a result of the larger number of members. If there is reason for a Minister of Health to be zealous of the prerogatives and accomplishments of a special agency within his own Ministry, there is perhaps an even greater risk that this will be the case of those in other ministries and agencies. Within the existing federal bureaucracy, officials may not look with favor upon an agency which tends to circumvent traditional practices of political favoritism or even petty corruption, since this will tend to highlight their own malpractices. The Brazilian governmental bureaucracy resists changes, and such changes as are introduced tend to be segmental only. New governmental agencies are created with avowed idealistic objectives for improving the welfare of the population, but administrative malpractices are accepted as natural and correct in these agencies as in others. The uniqueness of the SESP's administrative principles and their great divergence from what is usual Brazilian bureaucratic procedure offers then the possibility of the SESP's being the target for criticism from a larger circle within government than might have been the case had it been integrated more completely within the structure of the Ministry and under the close scrutiny of one Ministry only. Moreover, there is also the possibility that the SESP will be forced to yield to a greater number and variety of compromises.

The long-term disadvantages seem even more apparent. One astute political observer in Brazil has indicated that the compounding of government structures outside of the main stream of government bureaucracy tends only to delay the organization of

basic services in a rational way and to postpone the time when sound, honest, and efficient principles of administration are introduced into Brazilian government. With some eighteen years of experience in honest administration which has been generally recognized in Brazil, the SESP has still not tested the strength of its accomplishments within the main structure of government. Since it has not yet taken that risk, it has also foregone the opportunity to exert real influence on the Ministry to improve its administration and services. It also perhaps delays the time when the Ministry will take active steps to assist in the decentralization of health services.

One of the greatest weaknesses of the Brazilian government in providing public services to the population resides in the fact that state and local governments have depended on the central government for funds to provide services. They make little attempt to collect funds of their own or to use federal funds efficiently in extending services. With far greater financial resources at its disposal than is the case in the SESP, the Ministry has the greater opportunity for bringing pressure upon states to make contributions of their own before they qualify for federal funds and to use the funds for important and urgent services. Thus, were the SESP willing to assist the Ministry of Health in changing its program objectives in the same manner that SESP is operating to assist states, the effects of its assistance would be considerably greater in improving services at a more rapid rate in the country as a whole.

CHAPTER IV

THE ECONOMIC IMPACT

THE THEORY

I. The Contribution of Economics

For several reasons, the relationships between public health and economic development have been, in the past, largely ignored. Our discussion, therefore, starts largely from scratch, because although public health has universally been acknowledged as a necessary factor in economic development, there have been virtually no formal attempts to review specific public health programs in economic terms. For the economist improved health of the population whether achieved in whole or in part through public or private means has two economic aspects. First, better health conditions (decreased morbidity and mortality) represent true consumer goods (things having an immediate effect after their being consumed). Second, decreases in morbidity and mortality may augment the effectiveness of the labor force. It is in the second context that the problem is related to economic development, for economic development is measured by growth in national product, itself directly influenced by the health of the nation's workers. Yet, if resources are limited, one must ask whether adults should be cared for in preference to adolescents or infants; even then, there are the queries of which adults, as contrasted with which adolescents, and which infants. In sum, the economist's analysis, based on the belief that resources are limited and that all groups cannot get all that they need, attempts to set up a framework in which choices have to be made.

Economists are technically not competent to make these choices, yet they should be able to give some advice when they are in possession of the relevant cost and benefit figures. Their function is to put public health in priority perspective with other economic needs of the community-- namely, expenditures on transportation, power, and education (to name some of the principal alternatives). If a program is to have some particular types of economic impact, it should be designed with those purposes in mind. The question is simply how does a program planner devise or select his blueprints.

There appear to be two ways in which public health resource allocation can be made on a rational economic basis. The first uses as its criterion "the greatest good for the greatest number;" the second uses as its criterion economic development and is tied to problems of industrialization.

One Model for Rational Economic Choice

In the first case, money should be allocated in proportion to population distribution -- the urban centers and the densely

populated rural areas getting a tremendously larger amount of the resources than more sparsely settled areas. By this reasoning, the cities of Rio de Janeiro, Sao Paulo, Recife, Salvador, Porto Alegre, Belo Horizonte, and perhaps a few other capitals head the list. There are two implicit errors in using relative population figures as the criterion for welfare allocation. First, and most obvious, it does not take into account vastly differing degrees of local needs. Recife, for instance, because of the aridity of the area, has a public health problem which is distinctly different from that of Rio. Malaria is also far greater a problem in Recife than it is in Porto Alegre or Rio. Consequently, we must revise our first approach to state that expenditures should be made so that the critical mortality and morbidity rates would be equal in all areas, in other words, such that total expenditures should be roughly divided in order to maximize citizen coverage. The revised formula may appear to be complicated -- in a practical sense what it means is simply that allocation of expenditure would be designed to cover the major population areas providing equally healthful environments between these areas. Some centers would receive less than others on a per capita basis if their needs were smaller than those of other centers.

It is also true some centers should receive nothing because appropriations of less than a given minimum size do no good and have no effect. Thus, in some areas, depending on their problems, it may be preferable to spend nothing and to concentrate all resources where greatest good can be accomplished. Allocation of resources by "doing the greatest good for the greatest number" is one way to solve the problem. It has, however, a second important theoretical shortcoming. It implies that population is now distributed in some optimal sense and that the future development of Brazil is assumed to bear a direct geographical relationship to the past. There is good reason to believe that such is far from the case.

A Second Model

A second way to allocate limited public health resources is to make an estimate of where the country is most likely to develop greatest output of products and services and to concentrate effort on the activities that will be most conducive to that line of development. In this model we seek not to do "the greatest good for the greatest number in today's world," but to do "what is best for future generations, for the community that is coming." The difficulties of using this model lie in the vexations of determining what "can" or "ought" to develop. Yet, there are tremendous advantages to making the guess. If a sound estimate is made, it is likely that the return on the amounts invested will be proportionately very much more rewarding than in the previous case. There is also every likelihood that investments made at an early rather than a late date will cost intrinsically less. What we mean here is the savings in cost of putting in a sanitation system before the streets are paved, of establishing a tuberculosis detection program before widespread infection occurs, and of controlling mosquito breeding and thereby saving man-days otherwise

sure to be lost through malaria.

The Problems in the Second Model

How does one pick the areas of most likely rapid development? To do so, one considers two separate sets of factors, market demand and costs of supply. What does the market appear to need, or in specific terms, what products or services, physically producible in a given area, can be expected to be produced most profitably. For example, both the Brazilian and the world markets for newsprint are tight; newsprint produced at moderately low unit prices, as compared to other commodities, will be readily purchased (1). The national and world markets for iron ore, steel, and steel products and for pharmaceuticals are other examples. On the other hand, the market for wheat, for watches and textiles seems to be comparatively loose. It would be difficult for Brazil to produce these at low unit cost, either in cash terms or in terms of other commodities. Consequently, one would rationally tend to look into the possibility of producing that which is in brisk demand, but only if one can produce it at comparative costs equal to or preferably lower than those of competitors in the market.

Then we look at the second set of factors. What determines costs? The answer is simply the interaction of supply and demand for about seven different types of commodities and services:

1. Availability of raw natural resources, such as wood, ore, fertile soil, etc.
2. Accessibility of these resources -- the degree of inexpensive transportation.
3. The availability of adequate technology -- are processes known which make possible comparatively low costs of manufacture.
4. The availability of a population willing and able to provide the necessary degree of skilled labor.
5. The availability of power and water for industrial purposes.
6. The availability of capital at sufficiently low real-interest rates to make investment an actuality; and
7. The presence of sufficient managerial skill to bring the ventures "off."

All seven have to be present, although in practice there is some

(1) The cost of an item to the consumer includes besides the cost of production, the costs of distribution and transportation as well as customs tariffs and excise taxes.

substitutability among them. For instance, one may substitute greater total expenditures on capital equipment or management, for expenditure on labor (also vice versa). With sufficient capital resources, it is possible to have a longer period of industry-construction (the period of "ripening costs"), thereby permitting the building of a plant of larger, and presumably more economic size, before profitable returns must start flowing in.

2. The Role of Public Health in Economic Development

We are now ready to ask: "What is the role of public health in all of this?" The answer, although not easy, is nonetheless possible. Epidemic control, or the lack of it, may be the determinant of whether raw materials can economically be procured and whether transportation can be physically developed or maintained. Yellow fever, for example, for decades "closed" some areas to economic development. Malarial pestilence has done the same in more recent times. Schistosomiasis is another example of current blight, which although not dramatically as fatal as yellow fever or even as enervating as malaria, has slowed and partially prevented development of some areas such as parts of Minas Gerais.

By and large the availability of adequate technology is not a problem of public health authorities, although it is true that an indirect effect may be felt through the availability of good environmental sanitation which will make an otherwise prohibitively expensive method technologically economic. An example of this is the availability of vast quantities of pure water which, if originally provided for reasons of improving health, also resulted in making certain water-utilizing production methods economically feasible. The role of public health is most vital when it comes to the providing of a skilled labor force. A population handicapped by a high incidence of diseases among its mature or productive members is quite clearly not as good an economic resource as one spared from these blights.

Allusion has already been made to the place of public health regarding water. And it should be quite clear that the greater the size of the available labor force, the less should be the demands for capital or managerial skill, simply because there is some degree of substitutability among these factors.

Cost Incidence Under Different Patterns of Employment

One other general set of points must be made before turning to the precise topic of Brazilian economic development. Economists must consider the incidence of costs (the question on whom the costs fall) and the accrual of benefits. Costs fall on individuals, on firms, on industries (a group of firms manufacturing similar or substitutable products), and on communities. Similarly, benefits accrue to individuals, to firms, to industries, or to communities. Costs of illness, for instance, can fall simultaneously as well as sequentially on all four. An employed

worker immobilized with tuberculosis is an economic burden to himself as well as no aid to his company, whose efficiency is adversely affected by his weakness or absence. Moreover, his absence from the labor force, if it does anything significant, will serve to increase labor costs for the industry, and his debility will thrust the problem of caring for his family (as well as for himself) on the community. But assume, for the moment; that he is an unemployable worker. His illness is still, in absolute terms, expensive for him -- but in relative economic terms, it is less so because he would be verging on starvation anyway. Bad off as he is sick, it is not much worse for him that it would be were he "well." but still starving. In contrast with the former instance, where he was employable, neither the firm nor the industry, of which the firm is a part, feels any direct loss, but the community which must provide for him still has the same costs of treating as well as feeding him.

Generally, it is only when individuals have a chance for gainful employment do they become fully aware of the cost to themselves of a day's ill health. Similarly, it is under these conditions when firms and industries first begin to appreciate what disease, pestilence, and enervating health conditions mean economically to them. Yet, under all conditions an alert community must be aware of the costs of illness, but the public authorities under conditions of chronic unemployment have difficulty getting firms to support the formers' activities. In other words, the economic cost of illness is not clearly recognized in undeveloped economies, except by public or charity officials engaged in giving aid. After economic development occurs, then there inevitably comes a heightened awareness on the part of industries of the losses due to debilitation. As labor becomes scarce, the demand for good health balloons and every economic level of the entire community begins to press for public health expansion.

Who Wants What and Who is to Pay

Yet, here again, different interest groups make alternative demands. Parents faced with the costs of sick children want the public health officials to use the limited resources to provide medical care. Firms and industries generally see little direct economic gain for themselves from such expenditures, and press instead for allocations of resources to provide a more efficient labor force. Their cry is "help the productive members of the community" or "eliminate man-days of illness by eradicating such illnesses as malaria, tuberculosis, diarrhea when it occurs among adults, and schistosomiasis." The community, in contrast, may take a middle position. It incorporates the parents' plea because it is concerned with the supply and health of future citizens. On the other hand, the community realizes that increases in community economic activity must occur if the future population is to be spared starvation. Thus, it must also pay attention to the demands of firms and industries, for without their development, the future is indeed dismal. Let us use an example to illustrate this last point. Assume, for a moment that there is no likelihood of economic growth in one area, but that resources are allocated to save babies. The

saving of an infant's life (at the expense of foregone alternative uses of those resources), even though it means the baby lives longer, will be of no long-run social or economic advantage. Reduction of infant mortality merely leads to an increase in adolescent tuberculosis, or some other dire condition; one has traded one evil for a second which is, in economic terms if not in terms of human suffering, even worse.

A remaining problem relates to how the programs should be financed. In practice it is virtually impossible to charge tuberculars for the cost of their treatment. Similarly, it is difficult to make malaria sufferers pay for their hospitalization or the medical service they require. It is completely beyond the scope of reason to charge individual citizens suffering from schistosomiasis a fee to provide research to prevent those presently spared from its enervating effects from contracting the disease. Thus all of these programs must be publicly supported. As in the general case of basic education, the costs of the program cannot be made to fall easily on those to whom the benefits of the service accrue.

On the other hand, there is no reason why the costs of good environmental sanitation cannot be passed on directly to the beneficiaries. People can be made aware that good water is only a matter of price; that there are real economies of scale in centralising the privy service (i.e. building a sewage collection and processing system). Although we have been repeatedly told that one cannot charge the full cost of water service in Brazil (not only variable but the proper share of fixed costs), we are skeptical of such an assertion. In this generation Brazilians have learned to finance all sorts of industries from airlines to zinc reduction; they have adapted themselves to the rigors of a seemingly never-ending inflation. It seems improbable that the fairly direct lessons of how to get good sanitation promptly, either by use of proper cost allocation or by reliance upon a sinking-fund method, is beyond the intellectual grasp of the community. Non-reimbursable governmental expenditure must be reserved for programs where there is no alternative such as disease control; other projects such as water and sewerage systems are different.

3. Why Economic Growth Should be an Important Criterion

Pursuing our line of reasoning, we inevitably come to the general conclusion that the wisest use of public health funds must generally be linked with some possibility of future economic activity. Coupled with economic expansion, public health programs can lend support to all layers of economic activity. Separated from economic activity, public health programs seem to serve much less useful purposes, and may do disservice to those for whom aid was intended.

It is important to conclude this abstract discussion with a caveat, to which we will later return. Some areas produce products, others produce services. But it is also possible for an area to specialize in the production of people. In this sense, the national community, industries throughout the nation, firms within the economy,

as well as the poor themselves, have an economic motivation for supporting public health programs in "no-hope" geographical areas. But if this last situation is to be relevant, there must be population mobility; the poor children whose lives are saved by public expenditure must be willing to move to the places where resources are available. If that mobility is lacking, then expenditure on public health for those impoverished souls will have been, in historical terms, misallocated.

APPLICATION OF THE ANALYSIS

As we have indicated in an earlier part of this report, SESP has never made its own independent economic analysis in choosing the areas in which it would operate and in designating how it would allocate its scarce resources. For many years, it has permitted other agencies, notably the federal development authorities, to advise it. But their selection of regions generally was not made with an eye to the precise impact of public health expenditures on economic development. Rather, they asked SESP to help them because they sensed that they had some sort of a public health need. SESP with its limited personnel resources has a problem different from theirs; SESP needs to know not only where economic development may be reasonably expected to occur, but it must also select the places where its expenditure is the marginally necessary factor for economic development. In other words, SESP should concentrate on those projects where the absence of public health effort will significantly hold back the growth of the economy.

In retrospect we can see that the original choice of areas in which SESP operated reflected a decision to stimulate two types of industrial production; in addition these experiences offer splendid examples of the variety of economic and technological conditions which make public health efforts marginally more or less necessary to economic growth. In one case the original (although transitory) need was the result of an American rubber shortage; in the other it was to stimulate mining. Each experience is worthy of discussion.

1. The Amazon Experience

The history of rubber production in the Amazon basin is well known. The area, originally the home of wild rubber, prospered during the latter decades of the nineteenth century as the world's demand for rubber grew. So great was the demand that vast sums of money were used to tempt impoverished souls to enter the jungle and to expose themselves to diseases, particularly yellow fever and malaria, in order to market the crop. On one of the walls of the Manaus Opera House, itself a monument to the rubber boom, there is a plaque noting that an Italian Opera Company in 1911 lost all of its thirty members to yellow fever. But a world market price in excess of two dollars a pound (in 1910 it was \$2.07) was sufficient to induce impecunious and foolhardy souls to trust their luck and enter the area, particularly as construction workers. The bubble of prosperity broke around

1913 when Malayan plantation rubber began to be marketed in quantity. The Amazon Valley quickly was replaced as a source. Not only was it an unhealthy place for humans to live and work, but rubber trees (native to the Amazon) actually grew better in Malaya where the rainfall pattern was more agreeable and where there were fewer leaf diseases.

In 1927 the Ford Motor Company attempted to reestablish the Amazon as a major source of supply. Its motivations for making the attempt were partly economic, they believed that they could produce it below market cost and partly altruistic, they sought to bring an industry to an economically stagnant area. From the first, Ford's efforts met with difficulties. Principal among these were soil infertility and tree blight, extraordinarily difficult living conditions tending to discourage entrepreneurs and supervisory personnel which had the effect of raising the cost for their services, an ill-prepared labor force, no natural factor (i.e. labor) markets, as well as a need to devise a wholly new technology to cope with the problems that were faced. Nonetheless by the beginning of the second world war, the Ford Motor Company had planted 12,000 of the somewhat less than two million acres it held. The breaking out of hostilities in the Far East made the United States (as well as its allies) completely dependent once again upon the Amazon basin for rubber. The Ford plantation at Belterra and Forlandia could not begin to fill the need.

The United States government then proposed to return to the method of supply used prior to the opening of the Malayan plantations, that is, to gathering wild rubber in the Amazon area. Medical knowledge had, of course, advanced considerably since 1910 and the United States government was prepared to appropriate large sums to improve living conditions in the area as part of its policy to expand production. In full cooperation with the Brazilian government and using the SESP as the chosen agency, it financed major campaigns to eradicate yellow fever and malaria, to purify the water supply, and to provide hospital service where formerly even the most basic medical services were unknown. Massive programs for these purposes were developed. Thus SESP came to the Amazon basin.

At the same time the United States government, faced with a tremendous need for rubber, financed considerable research to develop a synthetic product. These latter efforts were successful; moreover, the early end of the war in the Pacific presaged the reentry of the Malayan rubber crop into the market, and the attempt to restore the Amazon to its earlier preeminence as a supplier was abandoned. Technological developments in the field of synthetic rubber further reduced the market price, spelling the doom of the Brazilian industry. Even though considerable progress had been made in improving public health conditions, expenditure on further development of the Brazilian rubber industry was uneconomic. The Ford Motor Company virtually gave away its \$15,000,000 holdings for an insignificant portion of their worth, \$250,000.

However, it does not follow that expenditures on malaria

eradication, hospital services, and improved environmental sanitation in the Amazon basin bore no positive economic results. In a few isolated areas, some significant economic development has occurred. Malaria eradication, for instance, on the island of Marajo opened that area to labor. At least two new types of economic activity developed; cattle raising became a significant activity, resulting in the establishment of leather and fresh meat markets in an area where no market has previously existed. Even more interesting than the new cattle industry, was the growth of a saw mill industry in the town of Breves. As far as we can tell, saw mill activity had previously been impossible because of endemic malaria. Elimination of the pestilence, or at any rate diminution of its severity, made possible the combining of the factors of economic progress for profitable results.

One other SESP program in the Amazon Basin deserves specific mention. In cooperation with the mayor of Santarem, a river community located approximately halfway between Belem and Manaus, SESP built a hospital. For the first time adequate medical service became available, making the area a better place to live for trained personnel who would otherwise have refused to bring their families. Jute and hemp industries have subsequently grown. That similar developments have not occurred elsewhere suggests that hospital service is a highly desirable, if not absolutely essential prerequisite for industrial growth.

However, the most spectacular developments in the Amazon Basin in recent years did not depend in any great degree upon SESP. We describe them, however, because they illustrate both the importance of public health work in economic development and the possibilities of alternative financing. They were successful because of the general skill of their entrepreneurs in organizing the appropriate economic activity, including, as we have just noted, the establishment of privately financed public health programs. Here we refer to the pepper-corn colony at Tome Acu and to the ICOMI manganese mining operation in Amapa.

The former was established by a Japanese group in 1928 when a land grant was obtained from the Para State government. About 270 families were sent out from Japan; within the next seven years all but thirty were either wiped out or driven away by malaria. The thirty that remained managed to clear an area in the jungle, to plant vines, and to develop an appropriate technology such that the colony could prosper.

In addition, drawing upon the technical knowledge gained by the Brazilians and Americans from the SESP directed DDT program, these Japanese financed and developed their own public health scheme. By 1959 the colony was producing approximately 4,000 tons or about 10 per cent of the world market. There is every reason to predict an optimistic future for this effort. Let us summarize: while it is true that malaria was a serious problem, one which all but crushed the development, elimination of the disease was only a necessary but not a sufficient condition for economic growth. What else

was needed specifically included: (1) entrepreneurs, (2) a labor force willing and able to work intelligently in the jungle environment, (3) sufficient capital to see the colony through its first twenty years until it reached sufficient size to realize some of the economies of scale, (4) the development of an appropriate technology to permit it to produce at low enough unit cost to compete in the market, and (5) an effective market demand. Let us reiterate our point: a public health program was certainly necessary for this development (as we have noted in point of fact the program was almost entirely privately financed), but it was Japan which furnished all other factors except market demand.

In the Territory of Amapa there had developed within the past five years the world's most efficient manganese mining operation. The mine, itself, is located at Serra do Navio, from whence the ore is taken on a modern 200 km. railroad to Porto Macapa for loading on sea-going carriers. ICOMI, the mining company, operates three communities, one at the mine, one mid-way between the mine and the port, and one at the port. The whole organization is on a vast scale and embodies the most preferred technological adaptations. The effort was largely financed by a loan from the American Export-Import Bank.

The medical and public health programs, sponsored not by SESP, but privately by ICOMI, are unquestionably the most advanced in the area. Their director is an able physician who is closely advised by one of the world's leading public health authorities. Yet, the very success of this public health enterprise has surprisingly enough, created problems hitherto unknown in the area. The elimination of infant mortality, without a program designed to keep the birth rate down, has led to serious overcrowding of homes and the emotional exhaustion of mothers. Mental health has thus become a problem as prosperity has become widespread.

Our points here are two: The economic success of the ICOMI in Amapa would have been hindered by an inadequate public health program. While it was directly a result of the existence of choice ore beds, vast amounts of foreign capital, and the wisdom of several Brazilian entrepreneurs, this happy combination would have yielded little without some sort of a public health program. Secondly, solution of the traditional public health problems reveals an entirely new area for public health concern. The ICOMI-sponsored public health program, having solved the problems of environmental sanitation, the principal contagious diseases, and infant mortality, will have to be reconstituted to concentrate more on family planning and mental hygiene.

Despite the economic development fostered by the publicly- and privately-financed public health programs in the Amazon Basin, our investigations as well as discussions with Brazilian economists and engineers lead us to conclude that there are great impediments to more rapid economic development in the area. These include a shortage of power, a deficiency of adequate entrepreneurial talent, an absence of an agricultural technology adapted to the rain-leached jungle soil, and a lack of transportation facilities beyond the

river banks. Thus, while the extension of malaria control might foster some additional economic developments, it would seem to be economically wiser for the present to allocate most of the scarce health resources to areas with a greater number of the factors presently necessary for economic growth.

2. The Experience in the Rio Doce Valley

The second point of concentrated SESP effort during the second World War was in the Rio Doce Valley, stretching from southeastern Minas Gerais through Espirito Santo to the sea. The valley was known to contain excellent mica, quartz and iron mines, but the area was malaria-infested and lacked adequate transportation. In order to increase production of mica and quartz and to facilitate their export, it was necessary to introduce a public health program and to reconstruct an inefficient railroad. SESP entered into agreements with local authorities to set up malaria control, to provide medical facilities and to superintend the development of at least one waterworks. The general program was successful; the railroad was fully modernized and mica production for export was increased. But the development did not stop there. This valley also contains excellent hematite as well as beryllium deposits. Decreased incidence of malaria and the improved railroad facilities led to a vastly increased export of ores. Naturally the mining villages flourished.

After the second World War and the Korean conflict further transportation developments occurred; a modern highway was constructed between Rio de Janeiro and Salvador in Bahia state. This road intersected the railroad at the municipio town of Governador Valadares, where SESP had developed the water system. What resulted was an amazing spurt of economic growth. In 1940, its population was 4,791; by 1950 it was 13,149; and in 1960 it was in excess of 80,000. The phenomenal growth in the last decade was the result of malaria control, the economic impact of excellent transportation facilities, new discoveries of ore, in-migration of people from the drought areas of the northeast, and the inflow of capital from all over Brazil.

The Rio Doce Valley has seen great economic progress in the past decade and there is every reason to believe that the next will made the past pale by comparison. Several new steel mills are under construction, including one at Ipatiega with a yearly capacity of two million long tons. Additional electric power capacity for the area will soon become available as the generative capacity of the Tres Marias dam is linked to the Minas Gerais grid. In brief, the geographic resources, transportation, power, an immigrant labor supply, capital, entrepreneurial talent, a technology adapted to the situation, and a national steel-hunger are all present.

However, our investigation shows a major lag in public health planning. The 1946 water system in Governador Valadares, designed for a population of less than ten thousand, has twice had to be expanded. When we visited the plant in June 1960, it was being reconstructed to handle a quantity of water purportedly sufficient for a community

of two hundred thousand. Even so, it appears probable that it, too, will shortly be inadequate. The hospital service is also inadequate; a half-completed shell stands as mute testimony to an abandoned plan for a general hospital. A centralized workable and efficient sewage disposal system is a crying first need. A program to clean up and police the Rio Doce must be inaugurated. That river, polluted when it comes to Governador Valadares, now leaves the community, if possible, in biologically a far worse condition than the one when it arrived.

Improved environmental sanitation and hospital development are not the only pressing requirements. Malarial reinfestation may become a problem, and steps must be taken not only to reconquer lost territory, but to expand the malaria-free area. Schistosomiasis, tuberculosis, and leprosy are significantly frequent diseases, requiring immediate attention. In truth, this valley, entering as it is a phase of fantastically great growth, seems to us to be an ideal focal point for a concerted public health program.

3. The Rio Doce Valley and the Amazon Compared

These two programs, both dating from the second World War, should be contrasted. In both instances, the initial program was intended to "open" territory, that is to eliminate malaria. Both efforts were reasonably successful. Yet, in the Amazon Basin general economic development did not occur. Why? -- because the other factors necessary for development were not present in proper proportions. In the Rio Doce Valley, however, those other factors did combine to yield growth, and the initial expenditure for public health purposes not only proved to be insufficient, but that insufficiency quite possibly deterred economic development. We suggest that there was a deterrent effect because we know valuable man-hours were lost through disease, and the cost of building proper water and sewerage services has rocketed as the communities in the area pave their streets and increase the pollution of the river. We have referred to these two experiences in some detail because they illustrate the complexities of planning strategic public health programs in areas with differing patterns of economic growth. Both the Amazon Basin and the Rio Doce Valley will, without question, develop; the factors encouraging rapid change in the near future in the Rio Doce Valley, however, are not present in the Amazon Basin.

4. The Place of SESP Activity in Several Other Geographic Sectors

Brazil to us appears to be five countries held together by historic, some cultural, and a few fiscal ties. The public health needs of these five areas vary considerably, just as their potential economic growth patterns and rates differ. We have already noted the "needs" of two of the five, namely the Amazon Basin and the mining and metal manufacturing areas in central Brazil. To review briefly--the Amazon Valley needs power, capital, entrepreneurs, and, perhaps most of all an adaptation of technology. The central and eastern area of Brazil, of which the Rio Doce Valley is a part, we believe, has the requisites for speedy development and it is

wise to concentrate SESP activities there. Yet, what of the other three "countries?"

The west remains largely an unopened frontier, but as transportation is improved, power sources are introduced, and a labor force arrives, it is likely that SESP, or some other public health agency, should provide strategic planning and possibly some degree of public health supervision. It may well be that the west in two generations will be what the Rio Doce Valley is now. It might be wise to have SESP within five years initiate studies of water resources and programs for sewage disposal. By every indication, these topics will have to have first public health priority.

The South also needs better transportation and an improved supply of power, in order both to tie it to Sao Paulo, which should logically be its economic center. We have observed elsewhere that there has been insufficient use made of the public health strategic resources in Sao Paulo. One change worth contemplating would be to shift the burden of planning for this area from the SESP to the group in São Paulo. This is an area which is equipped intellectually and economically to fashion its own public health program. For this reason the South does not seem to us to have a priority for SESP's attention.

5. The Case of the Northeast

It is the arid Northeast which remains the greatest puzzle to us. The possibilities of its future economic growth is the subject of much professional concern. One group of economists, of which the National Economic Council is a spokesman, believes that there is little possibility of generating sufficient industrial activity in the area to support its growing population. Instead they advise, efforts should be made to encourage mass-migration to other, more promising areas like central Brazil (Minas Gerais, Guanabara, etc.) and eventually to the west, as the latter is opened. Those who elect to remain should be encouraged to shift their agricultural activities from water-intensive crops (like sugar) to crops (like long staple cotton) requiring less water. If these economists are correct, it is not wise to invest heavily in public health programs in the northeast. Indeed, efforts having the effect of ameliorating the rugged living conditions in the area have an adverse result; they encourage the population to remain, instead of encouraging it to migrate.

There is, however, a second group of economists who entertain more optimistic views of the economic potential of the area. This is the SUDENE group around Dr. Celso Furtado and in the Brazilian National Development Bank. These economists put great faith in the long run effects of power and irrigation projects associated with such publically financed programs as the San Francisco Valley Administration. Unlike the former group, these men believe that the future availability of water, even in limited amounts, will render the area able to produce food in quantities sufficient to support its population, and that much of that

population will be able to earn its livelihood in the development of light industries. If this latter group of economists is correct, there probably is wisdom in expanding the program in all of the States except Pernambuco, where it is already excellently developed.

We lack the basis to make a definitive judgment between the positions advocated by the two sets of economists. For obvious reasons the differing views create a dilemma. In one case public health programs should not be greatly expanded; in the other they should. It is in situations like this when we are tempted to recommend using the first model suggested at the beginning of the economic part of this report. That is, allocate such public health funds as are available for the Northeast according to the present distribution of population. Focus the greatest aid where the mass of the population is most dense.

There is an exogenous logic to this recommendation -- one quite independent of the positions taken by the two groups of economic experts. Assume with us temporarily, at least, that human beings (a labor force, if you will) are the present major "export commodity" from this depressed area in Brazil to other, more promising sectors. This being the case, it is mandatory to improve the quality of the "product." A broad public health program, but one combined with extensive expenditures on education, making it possible for the recipients to have skills useful to industry and trade in other areas, is therefore desirable. The two will result in a strengthened Brazil -- providing that those who are thus served have been prepared for the difficulties of migrating.

In other words, there is a place for the first model. Specifically, we recommend greatest concentration of public health resources in the case of the Northeast in present population centers. If, at some future date, the Furtado group's view is generally accepted, a further reallocation would be in order. At present, however, we urge only that stop gap palliative measures be taken insofar as the criterion of economic development is concerned. Our knowledge is insufficient to suggest more.

CHAPTER V

SUMMARY AND CONCLUSIONS

The history of SESP as a cooperative health program between the United States and Brazil extends over a period of 18 years, beginning during World War II in 1942 and terminating in 1960 when SESP became a permanent autonomous Brazilian agency within the Ministry of Health. In reviewing the record of development of SESP members of the team recognize that hindsight is always better than foresight. Many factors, some of which undoubtedly could not have been foreseen, have played an important part in the directions of development of SESP. As an international cooperative program, SESP has developed amidst the vicissitudes of changing United States policy. Because it was among the earliest ventures in international cooperation, there was no precedent for policy and action to guide the leaders of the program. Finally, the Brazilian context has changed markedly over the years as the country continues in its transition to a politically, economically and socially advanced nation.

The value of the SESP experience is that it provides us with the opportunity to look squarely at the operation of an international cooperative health program which continued over a considerable length of time and under conditions which were altered during the course of its existence. In sum, the purpose of a review of the SESP program is not to say that it should have been different, for, considering the conditions, perhaps it could not have been. The aim is rather to assess in retrospect which procedures and policies seem most relevant and applicable and which, in terms of what we now know, would seem to require alteration. We hope that the judgments of the team will be relevant for future planning for cooperative health programs in other countries as well as in Brazil.

SESP: ITS PHILOSOPHY, PRINCIPLES AND METHODS OF OPERATION

1. The Emphasis on the Development of Rural Local Public Health Services

From the beginning, SESP has taken the view that its role is to work in the rural areas of Brazil. This position it has defended on the grounds that it would provide services to areas and segments of the population generally without medical care and public health services of any kind, that it would encounter no conflict of interest with existing federal or state agencies which for the most part do not provide services outside of the larger population centers, and that such a program would provide tangible evidence to the people that the government was interested in the welfare and conditions of life of the disadvantaged segments of the population. Gradually, those outside SESP have accepted SESP's role as an agency whose function it is to work in rural areas.

Today SESP operates and assists in the operation of more than 250 health centers and sub-posts and 25 hospitals in 16 states. It has planned, designed, and constructed public water systems in some 131 communities. For the most part, these services have been provided in the seats of municipios, few of which exceed 5,000 population.

In very recent years, SESP is attempting to shift its emphasis away from the full responsibility for operation of services to encouraging and assisting the states in the improvement and extension of their services. In this manner, it hopes to accelerate the rate at which services are being extended to rural areas. The emphasis is still, however, upon local rural health services, for the most part those in remote and neglected areas of the states.

We believe that the policy of concentration of effort in the small and remote population centers should be critically reviewed. In pursuing this policy, we think it may be that SESP has chosen the most difficult route for making an impact on public health conditions in the country and for improving conditions as a whole. The number of persons reached by concentration on services in small population units is necessarily limited, the costs per capita greater, and the difficulties of recruiting personnel increased. Moreover, there are some 1900 municipio seats in Brazil, perhaps two-thirds of which are under 5,000 population, and even under the most advantageous conditions there is not the possibility of complete coverage of these centers within the immediate years ahead. What is needed are criteria for the strategic selection of centers in which SESP should be working for extending public health services in the country.

2. The Emphasis on Training and Development

It is our impression that the single most important achievement of SESP is its record of training public health personnel. From its beginning SESP properly took the view that improvements in public health could be made only if Brazilian personnel were trained and if administration and operation of the program were the responsibility of Brazilians. Since 1946 the number of American technicians working in the SESP at any one time has averaged around 25, while the number of Brazilians in the program has grown to 3000. Also, while United States technicians initially held positions of administrative responsibility, the program soon recruited and trained Brazilians to take over the key roles while Americans remained as advisors or consultants.

Altogether, between 1942-1959 the professional personnel in SESP receiving training are in excess of 1,300 persons, of which over 500 received training in the United States. Better qualified doctors, nurses, and engineers have provided an ever-expanding corps of well-trained and dedicated people for SESP, other official agencies, and private practice. Of equally far-reaching significance has been SESP's contributions to the development of the professions of sanitary engineering, nursing and dentistry.

Of special importance was the recognition that auxiliary personnel were necessary to the development of the program, particularly in the view of the shortage of professional personnel and the likely continuation of this shortage for a long time to come. Between 1942 and 1959, almost 2300 persons were trained to work in the SESP program as sanitation auxiliaries, visitadores (public health visiting nurses), hospital auxiliaries, laboratory technicians and midwives. Such personnel are often recruited locally and provide an important link between the health center and the local community.

The organization and coordination of the efforts of both professional and auxiliary health personnel at the local level of operation is also a major achievement within SESP. The esprit de corps among SESP personnel and their devotion to the SESP program are unique in Brazilian public service and would be outstanding in any country.

3. The Emphasis on the "Demonstration Effect"

When SESP personnel have referred to "demonstration effect" as an objective in their program, they have meant that SESP was intended to show that it was possible to develop sound public health services in Brazil. This is different from the meaning which denotes the extent to which the program has stimulated replication in other agencies. Both interpretations are perhaps relevant to the achievements of SESP and should be considered here.

When SESP began its work in Brazil, there was no tradition in the Ministry of Health or in the state departments of health for a program such as it envisaged; indeed, conditions there and elsewhere in government seemed inimical to the success of such a program. SESP has, however, demonstrated that it was possible to develop a program, singularly distinct from what had existed before. It has evolved high standards for personnel and services. It has substituted technical competence for political favoritism as the criterion for personnel recruitment and advancement. It has made honest administrative practices and sound accounting of funds the rule. Employment on a full-time, rather than part-time, basis has been generally accepted throughout the SESP organization. Although it requires considerable effort, SESP personnel have been motivated to work outside the large population centers of Brazil.

These achievements should be emphasized, because they are new accomplishments in public service in Brazil. Other governmental health agencies in Brazil would be strengthened by the adoption of practices and principles and by the development of the quality of services along the lines of SESP. On the whole, we have been strongly impressed with the surprisingly large dividends in cooperative effort resulting from the relatively small United States dollar expenditure.

The achievements of SESP, however, have not yet stimulated improvement in public health services to the extent they might have

if SESP had not confined itself to the remote rural areas. Although SESP has a highly respected program, its operations have too often not been observable to government officials who rarely travel any distance away from the centers of government administration. SESP has been slow to recognize that effective communication with other government officials is a necessary condition for stimulating action on the part of government. Such officials must be shown how the achievements of SESP may be reproduced and adapted to their own services.

SESP'S IMPACT ON ECONOMIC DEVELOPMENT

The cooperative health program of SESP has never been related to programming for over-all economic and agricultural development. Strategic planning in terms of such goals has not yet generally evolved in Brazil. SESP has never made an independent economic analysis in choosing the areas in which it operates and in designating how it would allocate its scarce resources. For many years other agencies, notably the federal development authorities, have influenced it. Their own selection of regions has not been with an eye to the precise impact of public health expenditures on economic development. Rather they have asked SESP to help them because they have sensed they had some sort of public health need.

In order to have any impact on the economic development of the country, SESP needs to know both where economic development may be reasonably expected to occur, and also how to select the places where its expenditure is a marginally necessary factor for that development. SESP should, if it wishes to have an impact on economic development, concentrate on those projects where the absence of public health effort will significantly hold back the growth of the economy.

Considering the areas where SESP has been working for some time, it appears that expenditures for public health programs would not materially affect the rate of economic development in the Amazon Basin, since other factors are necessary before improvement will occur there. The Rio Doce Valley, however, has the requisites for speedy economic development, and it would appear wise for SESP to concentrate activities there, for the expenditures for public health improvements may soon be a marginally necessary factor for economic development. In certain areas, the impact, positive or otherwise, of public health expenditures on economic development is not so clear-cut. In the case of the Northeast the possibility exists that there may be some wisdom in allocating considerable resources for public health, particularly if combined with education, because the area exports labor. Such allocations would be made not with the expectation of substantial economic development within the Northeast itself, but rather because other areas with a potential for economic development would profit from the availability of a labor force which is physically fit.

Although planning public health programs with a view to making an impact on economic development is largely untried in Brazil, the advantages of doing so seem to be obvious. We hope that the new

organization of SESP which contemplates a strong planning and orientation unit will begin to take an interest in the effect of public health on economic development.

SESP's IMPACT ON SOCIAL CONDITIONS

As mentioned earlier SESP has for the most part operated services only in rural areas, and often in the most remote rural areas. Perhaps in total its services have reached centers aggregating 3,000,000 people, or not more than 5 percent of the total population of Brazil. Viewed in these terms it must be concluded that for the country as a whole, the conditions of life of the population have not been substantially affected.

However, in those areas where SESP has operated, some inferences can be made as to the possible effects which improvements of health conditions may have on the conditions of life of the people. If economic development does not accompany improvements in the death rates, particularly the infant and child death rates, the result of the health program may serve only to increase the number of mouths to be fed. Or, they may merely increase the potency of "push" migration to other areas of those in search of better economic conditions. Certain areas, particularly the Northeast, are currently sending large numbers of persons to Sao Paulo and the surrounding areas. Many are without the requisite skills and physical fitness to qualify for employment. Their living conditions in the city are little, if any, better than those they left behind. Moreover, the receiving areas inherit as public charges large numbers of unproductive persons and experience health problems which they have not had to cope with for some time.

These conditions, now present in many parts of the world where the death rates are being decreased, but where birth rates remain at a high level as they are in Brazil, underline the tremendous importance of planned economic development to accompany improvements in public health conditions. If accompanied by economic development, health improvements will in the long run favorably affect the conditions of life of the people. Lowered mortality and morbidity will reduce apathy and despair. At best, however, there will be a lag before these advantages begin to accrue.

SESP's IMPACT ON POLITICAL INSTITUTIONS

At the time SESP came into existence there was almost no tradition in Brazil for decentralized public services. Except during the Vargas period, both the states and municipios had the constitutional responsibility for providing many services, but for the most part these political units failed to exercise the initiative of collecting taxes for support of their own services. Instead, a chain of financial dependency developed; state governments depended on the federal government for their financing and municipios on the state governments. The central government, on the other hand, dispensed funds, but made no systematic attempt to plan

for the decentralization of public services. The outcome has been that the funds which went to states were used for state administration in the capital cities, and public services were established only in and near the capital and in other larger municipio seats of the state.

The task SESP first set for itself was to work at the municipio level. It has concentrated its efforts there for most of the years of operation. It has managed efficient health centers, sanitation programs, and hospitals with the objective of providing services and of "demonstrating" that such services can be established at the municipio level. Only belatedly, however, has SESP adopted the policy of making tangible municipio support a necessary condition for its entry into a municipio, and here only in the sanitation program. Thus, while in those municipios where it bears full operational responsibility for services, it has generally gained the respect locally of both the population and the politicians, it has not substantially altered the dependency of the municipio upon other levels of government. In those municipios where it began work later and is demanding local support in some material form, the municipios are in many cases receiving their first lessons in their responsibility to assist in providing their own services. Mechanisms for working out agreements for joint responsibility involving the municipio, such as has developed in the sanitation program, should be further explored for other types of health services. Over the years SESP has extended its relationship with state governments. This working relationship was at first nominal, amounting largely to agreement delineating the municipios under the jurisdiction of SESP, and in some cases involving also a commitment for some financial support from the state. Generally, however, in those states where SESP began work early, it made relatively few demands upon the states, following much the same pattern as in municipios. In certain states, therefore, as in the municipios, the states have felt that SESP should bear the full financial responsibility for the operations it established.

Recently, SESP is attempting to carve out a new rôle for itself in relationship to state governments. New undertakings tend to be operations planned in cooperation with and involving joint planning and financing with the state governments. SESP now takes the view that the provision of public health services is a state responsibility and that SESP's maximum contribution can be made by assisting the states in meeting their responsibility. For the relatively short time this policy has been pursued, the results seem particularly promising, especially in some of the northeast. Here state departments of health are organizing services in cooperation with SESP and they are beginning to adopt modes of organization and administration from SESP. In other states, notably Bahia and Minas Gerais, SESP appears as yet to have had relatively little impact on the state departments of health, either in getting them to assume increasing support for the operations of SESP in the state or for overall planning and improvement of their own services. The cooperative arrangements between SESP and the state governments, although belated, should extend more rapidly the impact of SESP in the future.

It is hoped that steps will be taken to bring pressure upon those states which have abrogated their responsibility in providing support to the operations of SESP in their municipios. The SESP services are highly regarded and could not be withdrawn without considerable political upheaval. Bringing the matter to a test might profitably result in new pressure on the states to fulfill their responsibilities for providing public health services.

SESP has never as yet planned or executed its work in cyn-chrony or in integration with the Ministry of Health. As it has happened, SESP has grown in strength and in function, and the Ministry has declined in action and in prestige. Even today under Brazilian administration, SESP operates as an autonomous agency within the Ministry, but with jurisdiction for work and administration quite apart from that of the Ministry. Many believe that as long as this dichotomy of government structure exists, the Ministry will continue to be weak. The public health necessities of Brazil are so great that efforts should now be made to strengthen the Ministry of Health by implementing the law governing the selection and rules regarding personnel and in improving administrative practices and programs within the Ministry. The principles, programs and services which have proven successful in SESP may profitably be reviewed for incorporation into the Ministry's program.

It is our own view and that of others whom we have consulted that the time has come when SESP's desire to remain out of the stream of political activity is disadvantageous. In its beginning years SESP's maintaining itself free of political interference may well have been justified. Continued adherence to this policy has, however, minimized the impact which SESP has had on the government agencies whose responsibility it is to extend and improve public health services. The autonomous agency such as SESP, and others like it subsequently established in Brazil, only delays the organization of basic services in a rational way and postpones the time when sound and efficient principles of organization and administration are introduced into the mainstream of Brazilian government. SESP now has a background of achievement sufficient to justify its attempt to integrate itself within the main structure of government. It is regrettable that steps in this direction have been so long postponed.

HIGHLIGHTS FOR FUTURE ORIENTATION OF PROGRAM

1. On the Brazilian Side

FIRST. The Government of Brazil should re-examine all the factors affecting preventable illness and death and then should make conscious decisions regarding public health priorities. Undoubtedly, prominent contenders for greater emphasis are malaria, tuberculosis, and the diarrheal diseases.

SECOND. Planning and execution according to these priorities must be undertaken on a broad national base. The deliberate selection of the small, as has been generally the case in SESP's locations, should not exclude activity with large aggregates of population. Choices should be made with understanding of their consequent economic impact upon the country as a whole. Plans for action should be designed to give maximum returns per unit of "official energy expended" as measured in money and in personnel time.

THIRD. Maximum use should be made of the personnel, equipment, and financial resources of all federal agencies, of state and local governments, and of private groups. Building of strong state and local agencies offers the only hope of speeding up health activity. Development along this line could utilize personnel and financial and technical aid for strengthened central and state governments. The long experience of the United States Public Health Service and the Children's Bureau with the application of local incentives in order to provide devices appropriate to Brazilian requirements might be usefully reviewed. Municipios must be encouraged toward ever-increasing responsibility for their own services. Their number is so great that little is likely to be done, if they simply wait for central and state government largesse. The task of vitalizing local health services is time consuming and difficult, but we see no substitute for it in so vast a country as Brazil.

FOURTH. Because fiscal practices, in general, and tax policy, in particular, control the speed with which public health services may be generated, all levels of Brazilian public health officials must develop an interest in, as well as understanding of, the ways in which fiscal adjustments may profit public health endeavor.

FIFTH. An objective review of the methods required to rejuvenate the federal Ministry of Health is strongly recommended. Such a review is all the more necessary because it is so long overdue.

2. On the American Side

FIRST. In spite of our belief that, on a nation-wide scale, the social and economic impact of eighteen years of cooperative effort and financial assistance to Brazil is not impressive, the vital importance of developing a strong and friendly neighbor justifies a continuation and expansion of technical and financial assistance to Brazil. The potential economic, social and political benefits

of such a program of health and sanitation entitles it to a high priority among ICA efforts.

SECOND. The practice of our limiting policy guidance in order to minimize interference with the "culture" of the country reduces the impact of new ideas essential to the best progress of a rapidly changing country. United States professionals, if consulted, must provide breadth of vision, new methods and ingenious solutions to public health and medical care problems. Their maximum value will not result from their hesitant minimum contributions. The accomplishment of these desirable objectives will require more, rather than less, United States money to be expended with major profit to the host country. A necessary accompaniment, however, will be the careful selection of matured and respected consultants. The less experienced, if used, probably should be incorporated in SESP or the Ministry of Health working staffs for support strength and for identification with Brazilian staffs.

THIRD. Increased United States support should be granted to Brazil, upon request, to develop long-range programs in malaria eradication, tuberculosis control and water supply and sewerage services. These programs should be bold in concept, broad in population coverage and deeply rooted in state and local support.

FOURTH. Support in the future should be contingent upon the development of Brazilian participation in the financing of both general and special health services. Financing of local health services should be through joint United States and Brazilian national, state, and local governmental support, according to some uniform formula which takes into consideration relative health needs and fiscal ability of these various governmental levels and which provides a real incentive to state and local governments to initiate and maintain health services.

FIFTH. International aid should be contingent upon adherence to sound administrative practices, including a merit system of employment and the development of career services and provision for appropriate review of program and audit of accounts.

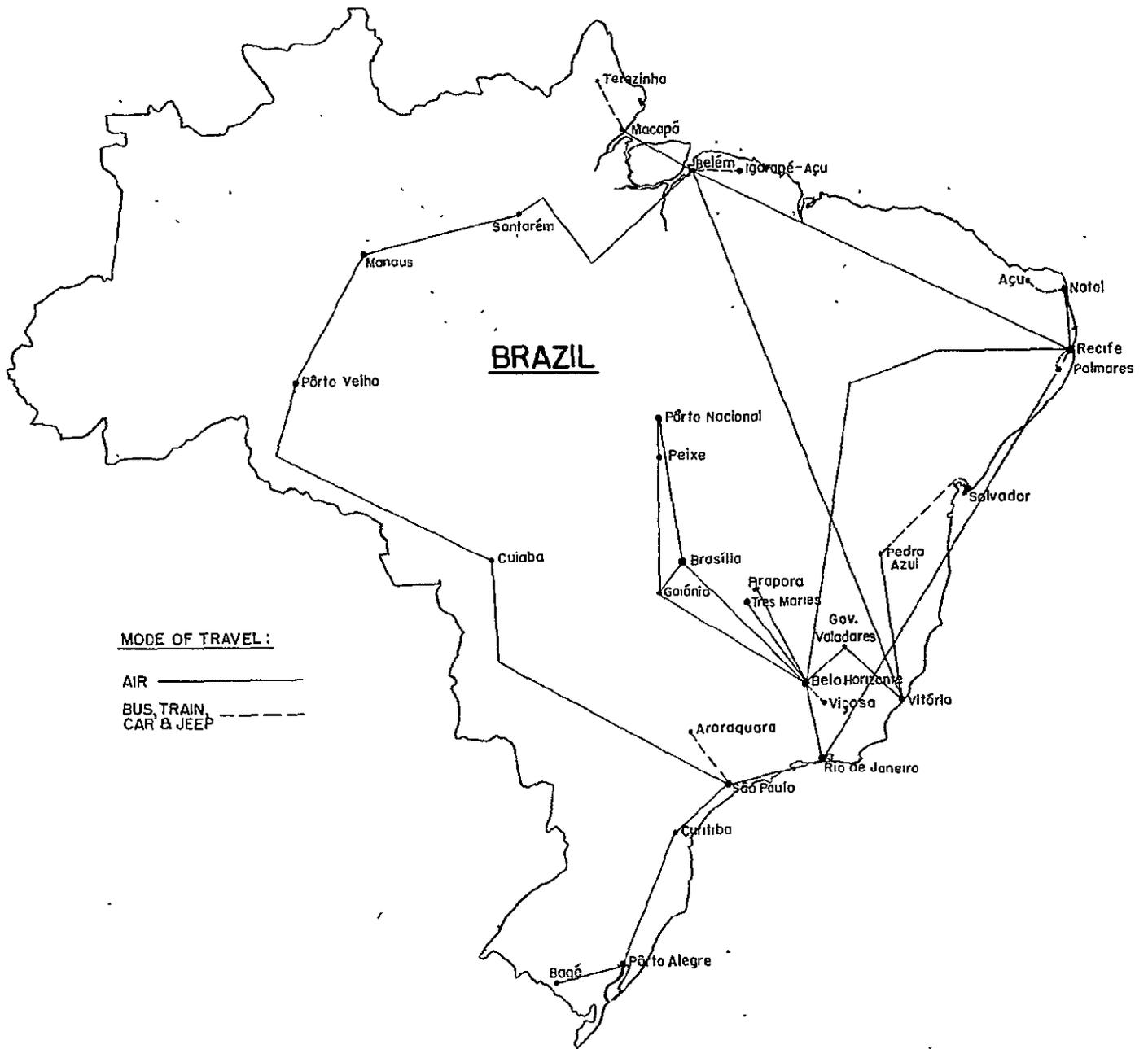
SIXTH. We should like to emphasize the need for flexibility in United States cooperative health programs. The United States should, we feel, avoid taking the position that any one type of relationship with the host country is appropriate for all times and all places. We suggest, however, that the appropriateness of the type of relationship in any country should be subject to regular review. Our considerations on this point stem from what we observed in SESP. We recognize that the type of cooperation program which developed for SESP eighteen years ago was one which indeed seemed advantageous at that time, both from the point of view of the efficient use of technicians and resources and of avoiding political entanglements which might have delayed the extension of public health services throughout the country. We question, however, that the type of relationship which kept SESP out of the main stream of government structure should have been so long continued.

FIELD WORK COVERAGE

During the course of our field work in Brazil, team members made observations and conferred with numerous persons in 13 states and two territories. Regional offices of SESP were visited in Amazonas, Para, Goias, the Northeast (Pernambuco-Alagoas-Paraiba), Rio Grande do Norte, Bahia, Espirito Santo, Minas Gerais, Parana, and Rio Grande do Sul, and discussions with other regional directors took place in Brasilia. The largest number of local field operations of SESP — health units, hospitals, and water systems — were seen in the Amazon and San Francisco Valleys and in the Northeast, but other local operations were also visited in Goias, Minas Gerais, and Rio Grande do Sul.

State health department officials were seen in Bahia, Minas Gerais, Para, Parana, Rio Grande do Sul, and Sao Paulo, and a number of state-controlled health facilities were observed for purposes of comparison with SESP operations. Considerable information was gained by visits to medical schools and to schools of public health. Industrial installations in Rio and Sao Paulo were visited by the economist, as well as the pepper colony in Para, the Tres Marias Dam in Minas Gerais, and the ICOMI operations in Macapa.

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