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9. ABSTRACT

Health conditions in Pakistan have not improved much since the nation was established in 1947. Malaria, Tuberculosis, and cholera continue to constitute threats to health. Gastrointestinal, infectious, and other parasitic diseases continue to contribute to morbidity and mortality. These diseases are exacerbated by primitive water supplies and waste disposal, bad housing, nutritional problems, and an increasingly heavy population growth.

The three fundamental causes of Pakistan's poor health environment are widespread infectious and communicable diseases; poverty and sociocultural attitudes that inhibit improving the environment; and ineffective policies administered by limited numbers of inadequately trained health workers, affecting both the urban poor and the rural population. Diseases of an ancient primitive society continue, while those of an emerging urban civilization are being added. These is pervasive ignorance of western medicine, and fatalistic acceptance of the inevitability of morbidity and mortality. People rely on the traditional hakims, most of whom cannot administer effective treatment. Life expectancy is currently estimated at 47.5 years for males and 45.1 years for females. Infant mortality is approximately 111 per 1,000 population. Approximately 26 percent of children born alive die before age five.

Except in malaria eradication, little progress occurred in the delivery of health services during the Second and third Five-Year Plans of the 1960s. Government expenditures for health services during 1970-1975 were still wholly inadequate, at 2.47% of total expenditures. In the Fifth Five-Year Plan, 1975-1980, there is increasing attention to health. The government hopes to extend health services from the present

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15% to 50% of the rural population by 1981. The increase in health manpower trainees, physicians, nurses, and technicians augurs well for the long term.

The five principal health problems now a challenge to Pakistan's socioeconomic progress are:

Excessive population growth; it exceeds 3.0% and may be as high as 4.2%.

The effect of morbidity upon the productive population, in both urban and rural Pakistan.

The competition of the health services for skilled manpower required for other sectors.

The need for much of the foreign assistance under the Fifth Plan to be devoted to health care.

Serious deficiencies in environmental sanitation.

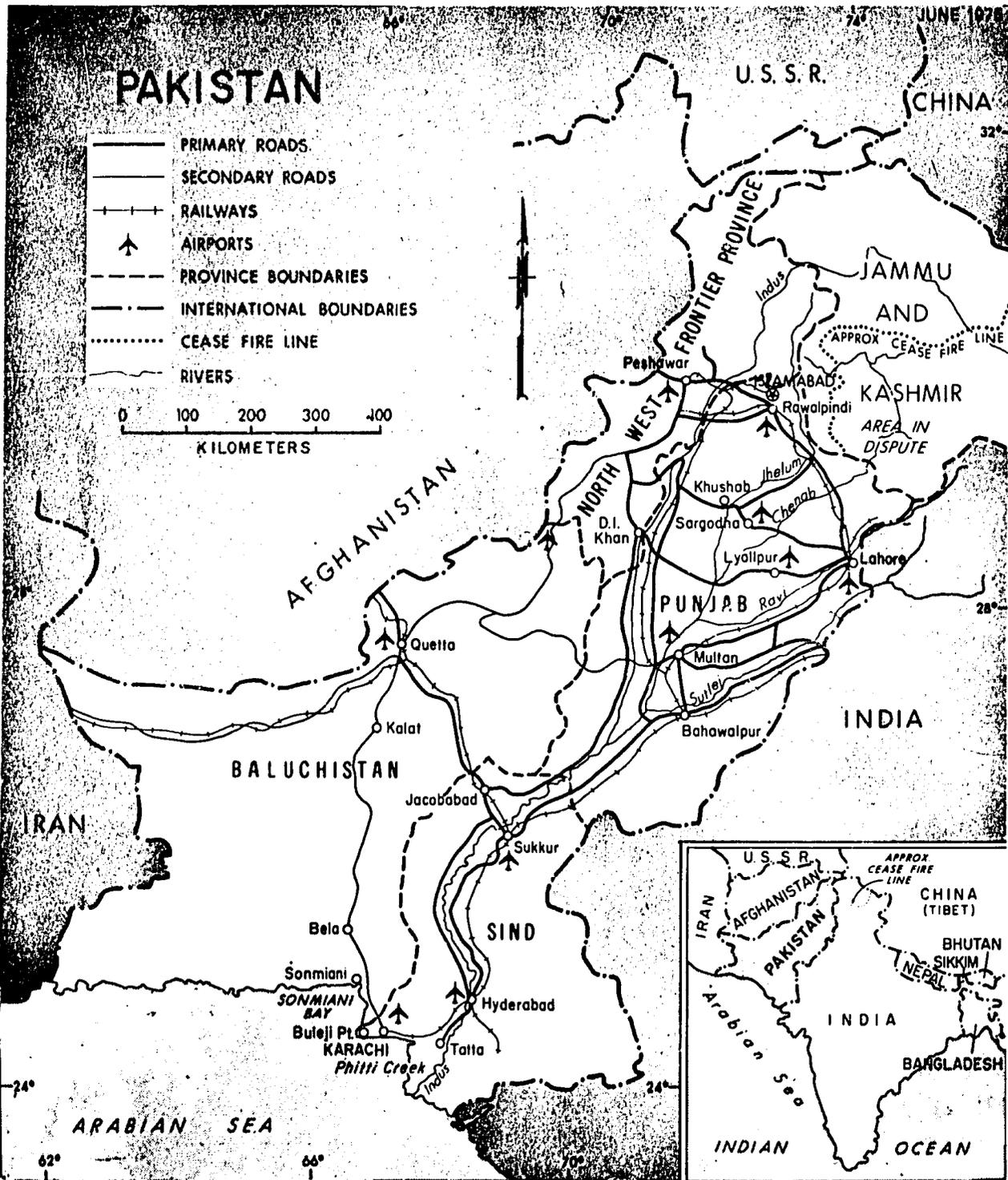


**SYNCRISIS:**  
**THE DYNAMICS OF HEALTH**

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

**XVIII: PAKISTAN**

U.S. DEPARTMENT OF  
HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE  
DIVISION OF PROGRAM ANALYSIS



SYNCRISIS:  
THE DYNAMICS OF HEALTH

An Analytic Series on the Interactions  
of Health and Socioeconomic Development

XVIII: ISLAMIC REPUBLIC OF PAKISTAN

Arthur H. Furnia, Ph.D.

June 1976

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## PREFACE

This document was prepared within the Division of Program Analysis of the Office of International Health, Public Health Service, U.S. Department of Health, Education and Welfare at the request and with the support of the U.S. Agency for International Development (AID). It is part of the Syncrisis series, which consists of country profiles describing and analyzing health conditions in particular countries and the relationship of those conditions to the country's socioeconomic development.

The primary purpose of these studies is to provide a concise and up-to-date introduction to the health situation in a country, for use by AID and throughout the international health community. The studies do not necessarily reflect United States government policy, and they do not include recommendations for specific programmatic actions by AID. They do provide a background against which further analysis and health program development may occur.

Specifically, Syncrisis studies are intended to acquaint the generalist in development administration with (1) interventions in the health system of the country which will contribute to socioeconomic development, and (2) the effects of other developmental activities on health. To the specialist in comprehensive health planning, they will provide both a preliminary document for his work, and an indication of the sources of information available for health planning in that country. For the specialist in a specific aspect of health care, Syncrisis studies are intended to provide insight into the relationship of the subsystem with which he is concerned to the comprehensive health system and the larger society. For each of these professionals, Syncrisis studies are intended not as a final definitive document, but rather as a point of departure from which their own professional skills can be applied to develop activities which will benefit the country.

In addition to the principal target audience, which will probably include a few dozen persons for a specific country, it has been demonstrated that Syncrisis studies are useful to others. For this reason the studies are published and made available for sale to the public. Some consideration is given in the preparation of the documents to their possible use in health science education in the subject country, in international health education, and by scholars concerned with more general aspects of the country or with closely related sectors.

Syncrisis studies form an unusual resource for the student of comparative health systems. They present, in a uniform format, parallel descriptions of health systems in countries with widely varying cultural, social, economic, and government systems. It is hoped that in the future this aspect of the Syncrisis series can be of increasing value.

The sources for the Pakistan Syncrisis derive from recent Government of Pakistan documents, USAID information papers and analyses, and various studies, reports and analyses by private consultants employed both by the USAID and the Government of Pakistan. In addition, studies and monographs by specialists from universities and international institutions concerned with Pakistani affairs were also utilized. These data, in turn, were supplemented by interviews with recent visitors to Pakistan having first-hand knowledge of Pakistan's health environment.

Such diverse sources of information, although credible, nevertheless produced varying and, at times, conflicting data. In particular, some Government of Pakistan documents provided data which conflicted with other Government of Pakistan documents and with various consultants'

reports. Through extensive citations an effort was made to record these differences so as to provide the reader with a basis upon which to evolve his own judgments. Nevertheless, the limitations of the research effort and the conflicting data must serve to inhibit our conclusions. All figures and analyses, therefore, are tentative and must be viewed with caution.

I would especially thank Dr. Robert de Caires for his invaluable guidance in developing the format and substance of this study, Messrs. John Gallivan and Paul Ahmed for their essential editorial support, and Ms. Lucille Shivers and Ms. Jessica Auerbach for their patient typing of the several drafts of this document.

Arthur H. Furnia

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## SUMMARY

The passion for independence, so evident among the Muslims of the Indian sub-continent in August 1947, was soon compromised by the vulnerability of the new Pakistan nation. The new state was not only bifurcated, but was all but devoid of industrial, transportation, communication, financial and human resources. These scarce human resources had to cope with partition and more than 6 million refugees from India. Indeed, in 1947 many did not regard Pakistan as viable.

Key factors in survival were the early leadership of Mohammed Ali Jinnah and Liaquat Ali Khan, the successful implementation of long-term planning, considerable and timely foreign assistance and the fortitude of the peasant-farmer upon whom Pakistan ultimately depended. The three decades of Pakistan's history have been marked by economic, political and natural disasters, and defeat by India, resulting in the loss of East Pakistan (Bangladesh). However, the four Five-Year Plans, beginning in 1955 and leading to the current Fifth Plan, created a highly productive agricultural sector, basic industries in textiles, chemicals, electricity and engineering, effective irrigation and power systems, and new transportation and communication facilities. The GNP reached \$10,876,000,000 or \$129 per capita in 1974-75 from a miniscule quantity in 1947. There has even been some upward social mobility by the masses. But the average Pakistani's life has improved only marginally in three decades, with literacy still under 20%, unemployment unacceptably high, and daily living and environmental conditions remaining poor to desperate.

No sector of Pakistani life more graphically reflects the immense sacrifice to render Pakistan a viable state than does the health sector. When the Government of Pakistan was constituted in 1947-48, planners pursued a diffident policy toward health care, concentrating their scarce resources instead on defense and later, upon industrial and agricultural development. These policies were pursued in spite of Pakistan being one of the least healthy of the world's developing nations. This condition, except in one or two instances, has not improved substantially during the past three decades.

As in 1947, malaria, tuberculosis, and cholera continue to constitute threats to health. Gastrointestinal, infectious and other parasitic diseases continue to contribute substantially to morbidity and mortality. These diseases are exacerbated by extremely primitive water supplies and waste disposal, bad housing, nutritional problems and an increasingly heavy population growth. Public health resources to cope with these conditions have not hitherto been available.

Thus, Pakistan's poor health environment appears to derive from three fundamental causes:

- widespread infectious and communicable diseases;
- poverty and socio-cultural attitudes which inhibit improving the environment; and
- ineffective policies administered by limited numbers of inadequately trained health workers, affecting both the urban poor and the rural population.

Major contributors to morbidity in Pakistan in 1973 were gastrointestinal, parasitic and respiratory diseases. The Pakistani Government reported that the principal causes of mortality were infectious and parasitic diseases, neonatal problems, tuberculosis, and enteric infections. Therefore, diseases of an ancient primitive society continue to hold sway while those of an emerging urban civilization are being added.

There is a pervasive ignorance of western medicine and a fatal acceptance of the inevitability of morbidity and mortality. The people turn to the traditional *hakims*, most of whom cannot administer effective treatment, thus perpetuating the vicious circle of morbidity and mortality.

Life expectancy is currently estimated at 47.5 years for males and 45.1 years for females. Infant mortality is approximately 111 per 1,000 population. Approximately 26% of children born alive die before they reach age five. The crude mortality rate for maternal deaths in pregnancy or childbirth was estimated to be eight per thousand in 1975, several times greater than in the United States.

The Government, until only recently, subjugated health care to defense and economic development. A comprehensive public health service initiated three decades ago is still in an embryonic state. Nevertheless there has been significant progress since independence.

In 1947 there were 163 hospitals in the Punjab and 416 dispensaries. Each province had a single TB clinic and maternal and child health centers existed in the large urban areas of Lahore, Multan and Rawalpindi. There was one functioning medical college and one public health nursing school. Physicians numbered 1,200, one for every 60,000 people, combining public and private practice, much to the detriment of the former. Lack of rural health facilities forced the rural Pakistanis to depend on the traditional *hakims* and *vaides*.

Since independence, progress in providing public health care has derived from acceptance of the premise that good health is essential to economic development. Thus, by 1955 the focus on increasing medical and paramedical manpower resulted in the establishment of several medical and nursing schools, as well as an Institute of Hygiene and Preventive Medicine at Lahore, to train medical administrators. There emerged a Health Department and later a Ministry of Health, within the Department of Health, Labor and Social Welfare.

The First Five-Year Plan in 1955 included a fifteen-year master health plan for rural health services. The plan was rejected by the Planning Commission but the objectives continued to receive the attention of health officials.

Except in malaria eradication little progress occurred in the delivery of health services during the Second and Third Five-Year Plans of the sixties, while the other Pakistan sectors were enjoying substantial growth and the GDP was increasing by 6.0% annually. During the Fourth Plan, however, the Government launched the "People's Health Scheme," to bring primary health care to rural areas. Another plan, called "Health Guards" provided paramedics to deliver health services in the northern regions of Pakistan.

The early seventies brought the loss of the war with India, the secession of Bangladesh, severe floods in 1973 and drought the following year. With the financial structure threatened by inflated oil prices in 1974-75, health plans were again compromised, yet there was some encouraging progress in facilities and manpower.

Government expenditures for health services during 1970-75 were still wholly inadequate. Between 1970-75, they were only 2.47% of total expenditures. Only about 15% of rural Pakistanis receive western type medical services and because of health manpower shortages, rural clinics, centers and hospitals are understaffed. Moreover, due to management problems such as the failure to delineate responsibilities between federal and provincial governments, the health "outlets" are frequently without medical supplies. All of these factors contribute to the majority of rural Pakistanis continuing to rely on the services of the *hakims* and *vaides*.

In the latest Five-Year Plan, the Fifth, 1975-1980, there is increasing attention to health. The Ministry of Health's long-term plan is directed toward achieving a balance between rural and urban areas, at least in primary health care. The Government hopes to extend coverage from the present 15% to 50% of the rural population by 1981. The increase in health manpower trainees, physicians, nurses and technicians augurs well for the long term. It may be prophetic that three of the four major areas emphasized in the new Fifth Five-Year Plan, general health, population planning and nutrition, legitimately fall within the health field. Certainly, the focus of the Government on these areas underscores the interrelationships of health to Pakistan's socioeconomic development.

The five principal health problems which parallel those of concern to the Government and which are a challenge to Pakistan's socioeconomic progress are:

- Excessive population growth. The growth rate exceeds 3.0% and some experts believe may well be between 3.5 and 4.2% ;
- The effect of morbidity upon the productive population, both in rural and urban Pakistan ;
- The competition of the health services for skilled manpower required for other sectors ;
- Much of the foreign assistance must be devoted under the Fifth Plan to health care ; and
- Serious deficiencies in environmental sanitation

BASIC COUNTRY DATA

Population	70.26 million (1975)	Gross National Product	\$10,876,000,000
Population Density	86/square kilometer (1974)	GNP Per Capita	\$129
Percent 0-15 Years	44.9%	Annual public health expenditure per capita	US\$0.48
Population Growth Rate	3.0%+ per year	Percent Literate	19%
Crude Death Rate	15.5/1,000 persons	Population Distribution	
Crude Birth Rate	45.5/1,000 persons	Urban	28.94%
Infant Mortality	111.0/1,000 live births	Rural	71.06%
Maternal Mortality	8.0/1,000 live births	Percent Unemployed	21.8%
Average Life Expectancy		Surfaced & Unsurfaced Roads	80,863 kilometers
Males	47.5 years (1974)	Currency Equivalentents	
Females	45.1 years (1974)	Before 5/12/72:	4.7619 rs = US\$1.00
		After 2/16/73:	9.90 rs = US\$1.00

	<u>Rural</u>	<u>Urban</u>	<u>Average</u>
Percent of population with access to potable water	5%	30%	12.25%
Percent of population with access to sewerage	-	15%	1.3 %
Percent of population with anemia	76%	56%	-
Population per hospital bed	13,000	600	-
Population per physician	-	25,000	1,400
Population per nurse	-	-	23,300

## CHAPTER ONE

### SYNOPSIS OF THE PAKISTAN HEALTH ENVIRONMENT: PROBLEMS, ISSUES AND POLICIES

#### Pakistan: Viscissitudes of Economic and Social Development

The partitioning of the Indian sub-continent in 1947 to create India and the Islamic state of Pakistan was a harsh, traumatic experience for the people of both of these emerging nations, but, we believe, it involved an especially difficult trial for the people of Pakistan. The difficulties involved for the Pakistanis were initially dictated by the terms of partition in which Pakistan was to consist of the contiguous Muslim majority areas of British India: Bengal and Punjab were to be partitioned. The result was a bifurcated Pakistan, with East and West Pakistan separated by the width of the Indian State, a distance of more than 1,000 air miles. The partition itself, moreover, was accompanied by considerable rioting and violence in which thousands were killed while an exchange of populations took place, with about six million Muslims fleeing to Pakistan and a similar number of Hindus and Sikhs migrating to India.<sup>1</sup>

After the initial shock of partition, the Pakistanis' exuberance for independence was quickly tempered by a realization that their new nation was politically and economically vulnerable.<sup>2</sup> Political and administrative leadership in Pakistan in the immediate post-partition years was desperately limited. Only about 100 members of the former Indian Civil Service remained in Pakistan to provide the nucleus for a future Pakistan civil service. In addition, the two outstanding Pakistan political leaders were soon removed from the scene. In 1948 Mohammed Ali Jinnah died just a year after becoming Pakistan's first governor general (Pakistan

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<sup>1</sup> See especially the following sources: J.R. Andries and A.F. Mohammad. The Economy of Pakistan London: Oxford U. Press, 1958; Mohammed Ali Chaudhri. The Emergence of Pakistan. N.Y.: Columbia U. Press, 1967; Dr. J.G. Hardee and Dr. A.P. Satterthwaite. Country Profiles: Pakistan. N.Y.: The Population Council, 1970; E.W.R. Lunby. The Transfer of Power in India, 1945-1947. London: Allen and Unwin, 1954; Syed Najiullah. "Aftermath: A Rethinking of Development Plans, Resilience and Formidable Tasks Ahead." Ceres: FAO Review, September-October 1972, pp. 51-54; Zabrid Shariff. "Social Information and Government-Sponsored Development: A Case Study from West Pakistan." The Annals of the American Academy of Political and Social Science, Vol. 393, January 1971, pp. 92-108; Percival Spear. India: A Modern History. Ann Arbor, Mich.: U. of Michigan Press, 1961; Richard Symond. The Making of Pakistan. London: Faber and Faber, 1949; Background Notes: Pakistan. Washington, D.C.: Department of State, 1975; Development Assistance Program(DAP), FY 1975: Pakistan. Washington, D.C.: Dept. of State, 1974; Health Data Publications: Islamic Republic of Pakistan, No. 40, July 1967. Washington, D.C.: Walter Reed Army Institute of Research, 1967; A Programme for Rural Health in the Northern Areas of Pakistan. Islamabad: Planning Commission, Government of Pakistan, 1972; plus additional sources to be cited subsequently.

<sup>2</sup> See Appendices I and II for a more detailed survey of Pakistan's political and economic history and current status.

had dominion status from 1947 to 1956) and in 1951, his associate in founding Pakistan and his prime minister, Liaquat Ali Khan, was assassinated by fanatics. It was only with the greatest difficulties amidst frequent political instability that a Pakistan government took shape and attempted to govern in accordance with the Pakistan constitution.

In the remaining years of the decade of the fifties, as the Pakistan economy failed to expand as anticipated, and the masses became increasingly alienated, political tensions also mounted. A revision of the constitution in March 1956, in which Pakistan ceased to have dominion status, and frequent Cabinet reshuffling, failed to exorcise this political instability. Indeed, in the following decade, even though the Pakistan economy began to reflect the stimulus of the second and third five-year plans during the middle sixties, the Pakistanis appeared unable to achieve political equilibrium.

In October 1958 martial law was proclaimed and General Khan became "President" and virtual dictator. Still another new constitution in 1962 allowed President Ayub Khan to assume office legally and be re-elected in 1965. But General Ayub failed to complete his term and resigned in March 1969, to be replaced by General A. M. Yahya Khan amidst a new proclamation of martial law. Thereafter, new reverses beset the Pakistanis.

These reverses stemmed in significant measure, at least, from Pakistan's historical and increasingly bitter conflict with India (Hindu-Muslim rivalry and the Kashmir dispute). But they also derived from the emerging class struggle, from sociological problems including an excessive birth rate and from the federal-provincial struggle and its offshoot, the internal conflict between East and West Pakistan. It was the latter which finally brought Pakistan a political disaster.

East Pakistanis, under the leadership of the Awami League Party and Sheikh Mujibur Rahman, sought a greater provincial autonomy, but such an arrangement failed to materialize in negotiations that took place in 1969 and 1970. In March 1971, by which time these negotiations had collapsed, the East Pakistanis declared an independent "Bangladesh" and engaged in guerrilla warfare against the Pakistan army of occupation, a movement fully supported by India. On December 3, 1971, open warfare broke out between Indian and Pakistani forces with the resulting invasion and conquest of East Pakistan by the Indian Army later that month.

The military defeat and loss of Bangladesh forced President Yahya Khan to resign on December 20, and induced the proclamation of martial law once again. Zulfikar Ali Bhutto, head of the Pakistan People's Party, the majority party in West Pakistan, assumed power as Chief Martial Law Administrator. The Bhutto administration, although faced with governing a demoralized and defeated nation, appears to have performed well in restoring Pakistan's stability. In foreign affairs, Bhutto recognized the loss of Bangladesh and instituted a reconciliation with India. Domestically, although exercising firm political control, he has restored the constitution, parliamentary democracy and the federal system of government. And of equal importance, Ali Bhutto has promoted a vigorous economic recovery.

Indeed, contemporary Pakistani economic success, although it must be viewed in relative terms, has been impressive especially in light of economic conditions in Pakistan at its inception in 1947 and the subsequent political vicissitudes endured by Pakistan since that date. It should be recalled that at the time of partition the area which became Pakistan was almost wholly an agricultural area and the society agrarian. Nearly all manufactured goods were imported, either from or through India. West Pakistan had only limited port facilities and the rail system was part of the larger western railway system of India. Apart from these limitations, the Indians controlled the headwaters for several of Pakistan's rivers, canals and part of her irrigation system, thereby rendering further Pakistan agricultural production, in part at least, subject to international negotiations. In short, by the beginning of the decade of the fifties, Pakistan suffered all of the socioeconomic disadvantages of most developing countries,

including a large and growing population (especially after assimilating six million plus refugees), a rigid, highly stratified society, a high rate of illiteracy and a completely inadequate educational system, an inefficient agricultural system of small farms, inadequate infrastructure and virtually no manufacturing industry.

But Pakistan did possess abundant arable land which, if subjected to scientific agro-practices, could provide the basis for a viable economy. In addition, Pakistan's arable land was supported by one of the world's largest irrigation systems fed by the Indus River, the full utilization of which, however, was subject to settlement with India. This river system was also capable of supporting large hydroelectric stations. This potential electric power, together with the natural gas fields, was also of considerable significance in developing the Pakistan economy.

In order to better utilize these agricultural and power potentials, after initial fumbling with bureaucratic controls, rationing and public distribution, the Government of Pakistan (GOP) adopted state planning in the form of five-year plans, the first of which was initiated in 1955. The course of the Pakistan economy since that time has largely been the record of the success or failure of these long-term plans.

When partition of the subcontinent occurred in 1947, as noted previously, Pakistan was a rural, agrarian society with virtually no industry. Even at the beginning of the first five-year plan in 1955, Pakistan industry was limited essentially to a score of cotton mills inherited from the British era supplemented by cottage manufacturing of textiles. With the introduction of the first two five-year plans, covering a period of 1955 through 1965, however, a significant and rapid expansion of light industry was undertaken in West Pakistan. The new plants thus established were based on local raw materials, fertilizer and textiles. By 1968-69 Pakistan industry accounted for 12% of a substantially enlarged GNP.

The first five-year plan, 1955-60, committed Pakistan to the construction of light industry both for domestic use and foreign export. The plan sought to promote savings for capital formation from income and wealth accumulation. Thus, it made no effort towards promoting equity or social progress among its citizens. Nor did it seek to encourage large-scale investment in the agricultural sector. Accordingly, agriculture expanded below the population growth rate, while light industry took root. Finally, due to the limited growth in agriculture, real per capita GNP declined between 1955-1960.

During the second five-year plan, 1960-65, Pakistan's agriculture finally began to expand, along with light industry, and so retain its place as the most important sector of the Pakistan economy. As such, it contributed significantly to a real per capita GNP increase of 3% annually between 1960-65. Nevertheless, agriculture's relative importance had begun to decline with the emergence of the first five-year plan. In 1955 agriculture represented over 50% of GNP, but through the subsequent five-year plans the relative contribution of agriculture slowly declined until it represented only 36% of the GNP in 1973. Similarly, Pakistan's population began to move inexorably toward the cities so that the urban population has been growing at the rate of 4.9% since the early fifties.

The third five-year plan, 1965-70, witnessed concomitant growth both in agriculture and industry. During this plan both agriculture and industry exhibited considerable impetus. Agriculture grew at a rate of about 5% of GDP while industry progressed at 10% and overall GDP growth averaged about 6.0% per annum. These high growth rates derived from the use of high-yield varieties of seed and tubewell irrigation, while industry prospered from high growth export-oriented industries.

The fourth five-year plan, 1970-75, scarcely enjoyed the success of its predecessor. Before it could be implemented, Bangladesh seceded and Pakistan was defeated by India. This disaster

was followed by devastating floods in 1973 and severe drought in 1974. The new Pakistan Premier, Zulfikar Ali Bhutto, sought to implement the plan on an annual basis. The result of this considerable ill fortune was almost predictable: a decline in savings, high inflation and an increasing balance of payment current accounts deficit from \$130 million in FY 1973 to \$1.2 billion in FY 1975. Finally, the average GDP growth rate was limited to 2.0-2.5% during the plan, while the increase in per capita GDP, we believe, was very limited.<sup>3</sup>

The implementation of these several plans with considerable bilateral and multilateral assistance, nevertheless, provided Pakistan with modest but timely economic growth and permitted competition with other LDC's. It has been estimated by knowledgeable economists that in the period 1965-1975 Pakistan's GNP grew at an average rate of 4.3% per year. While the average Pakistani has not truly prospered (with a rate of growth of population of over 3.0% per year, 70% of economic gains have been absorbed by population increase), the quality of his life has reflected some recent and very modest improvement.<sup>4</sup> Evidence of this improvement includes some of the following benchmarks.

Consumption of western type protein (meat and eggs) have increased from two to four times per capita since 1947 as has sugar. Consumer implements, such as bicycles and sewing machines, have also increased dramatically. Evidence is available that life expectancy rose more than twelve years during the sixties, while the death rate dropped from 17.8 per 100 to 13. Even the number of poorer Pakistanis, those in the lowest income groups, has declined markedly since 1960.

In summary, the four development plans, 1955-1975, focused on creation of infrastructure, some increased agricultural productivity and light industry for export promotion. In these endeavors the Pakistanis have been relatively successful. During the course of implementing these plans exports have steadily increased, even since the loss of Bangladesh in 1971. The composition of these exports is still limited, however, to textiles, yarn, carpets, cement, and sporting goods. The later plans, as noted above, have stressed more complex manufacturing such as fertilizer, electrical equipment and chemicals. Finally, the Pakistanis enjoyed a spectacular success in the Indus Water Treaty, which settled a Pakistan-India dispute over the allotment of Indus water, and permitted substantial foreign contributions to Pakistan through the Indus Basin Fund established in 1960.<sup>5</sup> Under this program six western donors contributed over \$2 billion since 1960, enabling Pakistan to develop the Indus water system complete with new canals, dams and hydroelectric power, giving employment to over 15,000 people and contributing heavily to increases in Pakistan's GNP. As a final measure of Pakistan's development, installed generating capacity in Pakistan increased from 90 megawatts in 1947 to 2,445 megawatts in 1974.

The GOP has now completed drafting its fifth five-year plan to cover the period July 1975 through June 1980. The emphasis in this plan is reported to be focused on export-oriented public enterprises, some heavy industry in the public sector (cement, steel products, fertilizers and chemicals) and on agricultural production. For the first time, however, significant

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<sup>3</sup> See DAP, *op. cit.*, pp. 8-12 and Najiullah, *op. cit.*, pp. 52-54, for data and analyses on Pakistan's economic development under the several five-year plans. See also especially Appendix II of this study and the sources cited therein.

<sup>4</sup> *Ibid.*, pp. 52-53 and the DAP, *op. cit.*, p. 11; this despite a grave unemployment condition which Mr. Najiullah claims was running between 16% and 40% among certificate and degree holding Pakistanis in 1972.

<sup>5</sup> See *Ibid.*, page 8 for more details on the Indus Basin development.

funding has been planned for human resources to provide the average Pakistani with improved health care, education, housing and infrastructure. Import substitution will be pressed, but the import substitution will focus on Pakistan's natural resources: people, land, water and fertilizer. The nature of the funding available and problems associated with this latest plan will be examined in the final chapters of this study in an effort to establish a meaningful relationship between Pakistan's health environment and her socioeconomic development. For the purpose of introduction here, however, suffice it to observe that despite the significant socioeconomic progress achieved by Pakistan since 1947 and recorded above, as one might expect the Pakistanis face formidable development problems in the foreseeable future. Very briefly, these problems, economic and social, may be summarized as follows:

- Foremost among these problems is the unfortunate physical and health environment of the Pakistani people which, despite some recent very modest improvements, constitutes severe deterrents to development, and which are due to a lack of investment by the GOP in health care, education, and infrastructure since 1947;
- A concomitant problem is an excessive population growth rate (at a minimum over 3.0%) which, in turn, implies myriad other problems;
- One of these is a high rate of unemployment (25% of urban workers and as high as 40% among educated Pakistanis) as well as much underemployment;
- This high unemployment/underemployment has caused intense socioeconomic pressure on the GOP to maintain unwarranted levels of employment in government and national industry, thereby reducing efficiency and productivity;
- Similar pressure has been applied to the private sector to maintain unrequired employment;
- The nationalized industries and the GOP subsidizing of the private sector industry and agriculture has rendered fewer funds for savings and investment and has required more foreign assistance for development and an increasing debt service charge despite concessionary terms;
- Heavy defense expenditures have reduced public and private savings, and, therefore, investment potential;
- The excessive inflation rate suffered by Pakistan since 1973 has also undermined the GOP's ability to fund required development programs;
- This excessive inflation rate has also contributed to Pakistan's recent trade deficit and balance of payments deficit;
- The natural disasters of flood and drought in 1973 and 1974 added still other burdens; and,
- Finally, then, the GOP must solve what one source has termed its "resource mobilization" problem. Increased public savings must be derived from increased revenue, while less must be spent on non-development expenditures. We would regard an increased investment in the health sector, however, as one of the most significant development projects confronting the GOP.

The People's Party of Pakistan (PPP) under the leadership of Zulfikar Ali Bhutto, is cognizant of this formidable list of socioeconomic barriers to national development, and in theory, at least, the PPP is dedicated to solving these problems and promoting the development of Pakistan into an economically viable democratic state. This dedication includes breaking up large estates, creating a mixed economy with heavy industry in the public sector, land to the landless peasants, local self-government, free education and compulsory primary education; and, as to the principal interest of this study, the PPP is also dedicated to assuring the good health of all Pakistani citizens.

### The Health Environment of a Developing Nation

The people of Pakistan are forced to tolerate living conditions which inhibit the pursuit of good health practices. These conditions include: poor income distribution, subsistence agriculture for a certain minority of Pakistanis, a small but growing urban migration, deficient housing, sewage and potable water, general slum conditions in several cities, increasing malnutrition and much nutritional deficiency, a very high and growing population growth rate, a high mortality rate among infant and growing children, and generally inadequate health care.

A health environment exists in Pakistan, therefore, in which the diseases of an ancient primitive society have been combined with those of an emerging urban civilization and which is subject to significantly improved health care given an adequate contribution of resources to that objective. That such resources have not been forthcoming in the past is only too evident when the existing health organization and facilities are examined.

When the Government of Pakistan (GOP) was organized in 1947-48, Pakistani planners took a very diffident attitude toward health services, being concerned with national survival rather than mortality and morbidity data. Thus, once health care was assured for the Army and the GOP civil servants, health services responsibility was handed to the provinces with the GOP's role limited to advice, coordination and malaria eradication.<sup>6</sup> By the decade of the sixties a Ministry of Health had emerged, but not as an independent agency. Rather, it was lodged within Islamabad, and two provincial directors, one for East and one for West Pakistan. Since the loss of Bangladesh, the former post has been abolished. Primary responsibility for health activities of Pakistan continued to rest with the provinces, in any event. The Ministry of Health, at least until the drafting of the fifth five-year plan, had only assumed responsibility for overall health planning, of which there was a minimum until the present decade, and in providing financial support for special health activities such as environmental sanitation, malaria eradication, family planning and international cooperative health projects.

The Pakistan health system including the public health organization, the Ministry of Health, and the private health services, will be examined in detail in a subsequent chapter. Some very general, preliminary working data on facilities, health manpower, and diseases within the context of this survey of the Pakistani health environment, would be useful, however.

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<sup>6</sup> See Mohammed Ali Chaudhri, *op. cit.*, p. 347; see also Chapter Three for background and details on the health organization in Pakistan.

Initially, it should be emphasized that Pakistani health data is not entirely reliable and is subject to varying interpretations and challenges from other sources. With that caveat, according to GOP data compiled in the early sixties, Pakistan (reference hereinafter is to West Pakistan unless otherwise indicated) had approximately 29,000 beds (two-thirds of which were in West Pakistan).<sup>7</sup> By 1975, after the defection of Bangladesh, Pakistan had 38,033 hospital beds, of which 7,480 were located in rural areas. In mid 1965 the GOP also initiated a program of constructing Rural Health Centers in both West and East Pakistan. Each health center was designed to support three sub-centers or Basic Health Units (BHU) and, under the later "People's Health Scheme," each BHU was to serve 10,000 people. By 1970 the GOP claimed to have constructed 83 Rural Health Centers and 250 Basic Health Units. By 1975 the GOP anticipated having constructed 120 Rural Health Centers and 310 Basic Health Units at a cost of 51.95 million rupees for the RHC's.<sup>8</sup> The latest GOP data indicate 137 RHC's and 369 BHU's have been constructed to date.

In 1965 there were about 15,000 physicians in both East and West Pakistan, again, with more than two-thirds in West Pakistan. Of all of these physicians, about two-thirds were in private practice and were practicing in urban areas, as were most of the remaining third in public practice. Sources differ as to the number of physicians in Pakistan in 1974-75. The GOP Planning Commission assumes that there were only 10,000 physicians in June 1974. Other sources believe the number may have increased to about 15,000 by 1975, with about 5,000 of the 1965 total number remaining in Bangladesh upon partition.<sup>9</sup> In any event, the large majority of the posts in the public health institutions in rural areas of Pakistan are without physicians.

There is also a severe shortage of nurses and paramedical personnel, which would include assistant nurses, midwives, assistant midwives, pharmacists and lady health visitors and health guards. There is, in short, an extremely limited number of medically trained personnel to service the large rural Pakistan population. One source has estimated that available medical personnel implies one physician per 1,400 persons, one nurse for 23,300 people, and one lady health visitor per 70,000 people.<sup>10</sup> Under these circumstances rural Pakistanis are forced to rely upon about 40,000 plus traditional practitioners (*hakims*) for health services.

In attempting to assess the health environment of Pakistan, as we noted above, health officials are confronted with a lack of reliable data upon which to base their analyses. The foregoing has been suggested already in connection with health facilities and health manpower. This condition is especially relevant, however, in connection with delineating the diseases of Pakistan. This situation emerges not simply because the Pakistan health authorities lack certain expertise to produce such data, but beyond this, the local customs of withholding morbidity and mortality information from the local authorities by frightened, suspicious peasants and secluded Moslem women render the task of collecting such data especially difficult. It should

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<sup>7</sup> Health Data Publications, *op. cit.*, pp. 54 and 70, Appendix 14.

<sup>8</sup> See Working Papers for the Development Perspective (1975-1980): Health. Government of Pakistan, 1975, pp. 302-303; see Tables 7, 8, and 9, Chapter Three for the most recent RHC and BHU construction goals.

<sup>9</sup> See USAID Briefing Documents, Pakistan, 1975.

<sup>10</sup> See Trip Report, November 19, 1974, AID; see also GOP Development Perspective, *op. cit.*, p. 248, which claims that there was only one physician for each 7,000 persons and one nurse for each 23,000 persons assuming 10,000 physicians and 3,000 nurses in June 1974. See also additional data on health manpower cited in Chapter Three.

be stressed, of course, that the local authority is a village policeman and not a health technician who could be expected to solicit more of this data. We shall explore these conditions in more detail below.

Be that as it may, health authorities have been able to produce a general image of Pakistan's health environment expressly related to diseases and illnesses. As one source has suggested, "Pakistan cannot be classed as a healthy place to live."<sup>11</sup> There is sufficient if not abundant data available to support this conclusion.<sup>12</sup>

Pakistan is tormented by all of the diseases commonly found in LDC's, but with particular virulence of some of these diseases. At the close of the sixties, for example, the then East Pakistan was the so-called "home" of cholera. It continues to appear periodically in Pakistan in epidemics. Malaria is another extremely virulent disease in Pakistan. Due to a concentrated malaria control and eradication program in the late sixties, it appeared that control and diminution of this disease might occur. As a result of administrative breakdowns attendant upon Pakistan's international problems, the malaria program began to suffer. Thus, in 1974 there had been a dramatic resurgence of malaria with the GOP anticipating twelve million<sup>13</sup> cases by 1975 in Pakistan.

Even more important, according to GOP data, is the mortality and morbidity resulting from the various gastrointestinal, infective and other parasitic diseases.<sup>14</sup> Both amebic and bacillary dysenteries, as well as the common diarrheas, are present. Typhoid and paratyphoid fevers are also common although exact data are not available. Tuberculosis has been described as a massive problem in Pakistan, while trachoma is regarded as a serious problem. Various kinds of typhus are also prevalent. Several other diseases, including relapsing fever, infectious hepatitis, tetanus, dengue and various respiratory diseases, are also present. These and other identifiable diseases will be examined in more detail in Chapter Two, along with other problems affecting Pakistan's health environment. Those above were recorded to illustrate the range and scope of diseases confronting the GOP health officials.

#### Problems, Issues and Policies

It may be noted, accordingly, that Pakistan's poor health environment stems from three fundamental causes. These causes may be characterized as follows although they are not necessarily recorded in a logical cause-and-effect sequence: (1) widespread and often uncontrolled

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<sup>11</sup> Health Data Publications, *op. cit.*, p. 32.

<sup>12</sup> See GOP Development Perspective, *op. cit.*, pp. 320-321, and Tables 3 ("Health Institution Based Data of Sickness") and 4 ("Estimated Deaths by Cause of Death") at the end of Chapter Two.

<sup>13</sup> See DAP, *op. cit.*, p. 7, Health Section.

<sup>14</sup> See GOP Development Perspective, *op. cit.*, pp. 320-321; Pakistan health authorities attribute 53.84% of all mortality to infective and parasitic diseases.

infectious and communicable diseases; (2) poverty and socio-cultural attitudes which inhibit attacking basic maladies of Pakistan's deficient health environment, and (3) erroneous and ineffective health policies administered by inadequately trained, often inefficient and limited numbers of health officials.

#### Infectious and Communicable Diseases

Infectious and communicable diseases, the most important of which were recorded above, are believed to be very widespread and frequently uncontrolled. There are estimated, for example, to be twelve million cases of malaria, while water-borne diseases of the gastrointestinal system are believed to be more prevalent still. Chronic bronchitis, pneumonia, and tuberculosis are also especially virulent. These diseases take a very heavy toll of the Pakistani population especially in rural Pakistan where the majority of the people live and where medical care is negligible.<sup>15</sup>

The most tragic victims in Pakistan, as in most other LDC's, are the mothers and young children. It is thought, for example, that five to six times as many mothers die in pregnancy and childbirth as in the industrial states such as the United States.<sup>16</sup> A 1966 nutritional survey showed that 20% of the Pakistani children died within their first five years of life. Many Pakistanis are ill much of their lives from one or more of the diseases noted previously. In any event, it is alleged, and most probably accurately, that many millions of Pakistanis are ineffective producers due to chronic and debilitating diseases which nevertheless could be prevented with adequate health care.<sup>17</sup>

#### Poverty and Socio-cultural Attitudes

Pakistan's desperate health environment stems to a large extent, of course, from the status of Pakistan as an LDC. Pakistan suffers from extreme poverty, especially in many of the rural areas, and from this poverty emerges a long list of maladies which undermine her health environment. Deplorable sanitation conditions, substandard or nonexistent housing, lack of potable water and effluent disposal, malnutrition and extensive overcrowding in some villages and cities, are direct attributes of Pakistan's poverty.

The secondary legacies of this economic status are the severe weakening of the general population from malnutrition, making them very susceptible to the many prevalent diseases. Another legacy, of course, is the pervasive ignorance stemming from these primitive conditions and lack of formal education. In 1961 the literacy rate was 19.2%, which has not improved substantially since then.<sup>18</sup> This results, in turn, in a primitive, fatalistic attitude toward

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<sup>15</sup> Ibid., p. 321; tuberculosis, malaria, bacillary dysentery, and amoebiasis and infective and parasitic diseases, according to GOP estimates, account for over 72% of all recorded mortality in Pakistan.

<sup>16</sup> DAP, op. cit., p. 6.

<sup>17</sup> Ibid., p. 6.

<sup>18</sup> See Hardee and Satterthwaite, op. cit., p. 2.

disease: it is accepted as part of the peoples' destiny, not to be contested. Thus, the people are not shocked by the inordinately high mortality rate among mothers and small children.

Still another legacy of this poverty and ignorance, and one which torments most LDC's, is a very high population growth rate. In Pakistan, although again demographic data is not especially reliable, the Population Council has estimated Pakistan's population growth rate at 3.3% between 1960-1965 and at least 3.0% between 1965-1970.<sup>19</sup> Another source has estimated the population growth rate at 3.5 to 4.2% between 1970-1975. In any event, all sources accept a growth rate at a minimum of at least 3.0% for 1970-1975. Such a high growth rate, as we know, has a number of unfortunate economic and health implications ranging from a very low rate of participation in the labor force, to virtual stagnation of GNP per capita.

Perhaps the most seriously detrimental socio-cultural attitude toward improving the Pakistani health environment, however, is the fatal acceptance by the rural population of the inevitability of the morbidity and mortality which they presently endure. Hand in hand with such a fatalism is the current necessity for their depending upon the traditional practitioners, the *hakims*, for any kind of health care due to the inadequacies, for whatever reasons, of the Pakistan public health service to provide even rudimentary care, a point we will examine immediately below. In any event, it would appear mandatory that the Pakistani peasants be enlightened to the advantages of scientific, western medicine as rapidly as possible so as to affect a fundamental change in their attitudes toward health care. This might be accomplished through several methods operating simultaneously, including formal education and training. Obviously, however, the most potent means with which to wean these peasants away from the dubious care of the *hakims* is to provide them with an efficacious system of public health care upon which they can depend.

#### Inadequacies of the Pakistan Public Health System

Data on the Pakistani health system, both public and private, are largely incomplete and often contradictory, with conflicting statistics on health facilities and health manpower. Despite the difficulty of analysis due to these conflicting data, some elements in this confusing situation do emerge, however.

The most important is that the Pakistani public health system, such as it is, has been oriented toward urban Pakistan, although even this orientation has been interspersed with frequent changes in direction reflecting political biases of individuals who exercised influence in the GOP from time to time. Thus, generally it has been alleged that the public health service has never reached more than 15% of the Pakistan population. It must be recalled that even in 1975, over 70% of the Pakistani population still reside in rural areas, whereas 80% of the Pakistani physicians practice in urban Pakistan.<sup>20</sup>

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<sup>19</sup> Ibid., p. 1.

<sup>20</sup> GOP Development Perspective, op. cit., p. 299.

Another factor is the domination of the public health service by Pakistan physicians to the exclusion of public health professionals. It has been alleged, moreover, that most of these physicians are retired army physicians.<sup>21</sup> They have no familiarity with rural or village life and, apparently, little interest in promoting rural health.

Still another factor in Pakistan's poor health environment is its acute health manpower situation. Given a reasonably accurate estimate of approximately 15,000 Pakistan physicians in 1975, there is about one physician for every 1,400 Pakistanis. It is also assumed that there is about one nurse for every 23,300 people and one lady health visitor (see below) per 70,000 people.<sup>22</sup> In reality, however, since most of the physicians practice in urban areas, there is only one physician for every 25,000 people in rural Pakistan.

Since the Pakistan public health service is so inadequate and since about two-thirds of Pakistan's physicians are in private practice, one would assume that the Pakistani citizens would avail themselves of the private practitioners. Unfortunately, the vast majority of Pakistanis can neither afford the private physicians (Pakistan's private medical care was thought to have cost about \$150 million last year) nor obtain access to them in urban areas. They turn to the *hakims*, therefore, as suggested above. The *hakims* (about 40,000 of them), it is believed, earned about \$30 million from Pakistan's peasants last year, funds the Pakistanis could ill afford for the treatment received.

We have already alluded to the problem of inadequate health facilities in Pakistan. Again, this seems also to be a problem of proper administration as well as one of limited facilities. In addition to the hospitals, which provide one bed for about every 600 urban Pakistanis and one bed for every 13,000 rural Pakistanis, the system also provides Rural Health Centers, Basic Health Units, dispensaries, maternal and child health centers, and tuberculosis clinics.<sup>23</sup> We have noted the GOP construction plans for the RHC's and BHU's above and will deal with facilities in detail elsewhere. Suffice it here to note that these facilities are quite inadequate with only 3,086 dispensaries available for all of Pakistan in 1975 of which 2,097 were in rural Pakistan.<sup>24</sup> This lack of facilities is exacerbated, of course, by the inability of the Ministry of Health and the provincial health officials to staff these various facilities with sufficient health manpower from physicians to health technicians.

The Pakistan health environment is also plagued by other problems common to LDC's including inadequate data collection and analysis, financial problems, training difficulties and lack of planning, in addition to those of health manpower, health facilities and administration already noted.

Data collection and analysis by the Ministry of Health and the health department in each province appears, in part at least, to be suspect. Indeed, the GOP's Ministry of Health does have official data on health manpower, facilities, mortality and morbidity, training, etc. already cited above. But in some instances, these data differ from that provided by other reliable sources and also obtained from the GOP. Moreover, as noted previously, these data on

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<sup>21</sup> DAP, op. cit., p. 7.

<sup>22</sup> GOP Development Perspective, op. cit., p. 298, Table 1, see Appendix V; see also citation of other health manpower data in subsequent chapters.

<sup>23</sup> Ibid., p. 299, Table 2.

<sup>24</sup> Ibid., p. 299; the Development Perspective publication claimed 2,400 dispensaries of which 760 were in rural Pakistan. The above figures are from a later publication cited in Chapter Three. See also Table 7 in Chapter Three.

morbidity and mortality often reflect only those diseases, illnesses and death occurring in GOP facilities, which largely ignores the rural areas, where such facilities are scarce or nonexistent. The unreliability of some GOP health data has been reported by most international health specialists. The GOP, of course, is aware of these data problems and is attempting to rectify them.

As one might expect, therefore, reports on Pakistan health expenditures differ somewhat, although they all agree in illustrating the limited funding for health by the GOP during the fourth five-year plan. Utilizing the GOP Planning Commission data cited previously<sup>25</sup> the following general expenditures for health and medical services are noteworthy. In the year 1970-71 61.73 million rupees were expended on the Pakistan health sector (Rs 4.7619 = \$1.00 before May 1972 and Rs 9.90 = \$1.00 in March 1973). In 1971-72 this figure climbed to 57.26 million rupees, to 95.55 million rupees in 1972-73 and 157.67 million rupees in 1973-74. By 1974-75, the GOP estimated 307.92 million rupees would be expended. Private consultants have estimated that the per capita expenditure for the health sector was 4.73 rupees for 1972-73 utilizing a more liberal expenditure of 322 million rupees. More data on financing the Pakistan health sector are set forth in Chapter X. It is quite apparent from the above data, nevertheless, that adequate health services for rural Pakistanis could not be financed from this limited funding.

Although Pakistan has several medical schools and plans are underway to open additional schools, as suggested above, there is a severe shortage of health manpower, especially in auxiliary health manpower, technicians, sanitary inspectors, midwives, lady health visitors, and family planning officers.<sup>26</sup> Moreover, Pakistan continues to lose substantial numbers of physicians and nurses through immigration. It is clear, in any event, that substantially increased numbers of paramedical personnel must be trained, as well as physicians and nurses, and including a greater number of female personnel, if health care is to be provided rural Pakistan.

Unlike other aspects of the Pakistani public health program, the Ministry of Health did develop a planning section and over the past few years, promoted a health plan the essence of which we will examine immediately below. Nevertheless, foreign health consultants believe that this planning has been faulty and may have to be radically revised. This has occurred, they believe, because of the lack of understanding by officials of the Ministry of Health concerning the whole Pakistan health environment. Thus, while unable to accurately identify existing and future health problems, they have failed to establish realistic goals and objectives. It is not surprising, then, that they have consistently failed to provide the required resources with which to solve Pakistan's health problems and, similarly, have not been able to establish priorities, nor have they integrated objectives into overall Pakistan economic planning, at least, not until the fifth five-year plan and then only minimally. Environmental sanitation, preventive medicine, curative medicine, health manpower and rural health facilities are some of the areas in which health planning still appears to be deficient. Finally, there is also the basic flaw: too many Pakistani political leaders still regard investment in public health as investment in a consumer good rather than a capital investment. Many still fail to perceive good public health as an investment which will greatly increase worker production.

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<sup>25</sup> Ibid., p. 302, Table 5.

<sup>26</sup> Ibid., p. 312, the GOP Planning Commission claims that six new medical schools were opened between 1971 and 1975 and that the number of openings for medical students in existing schools increased from 900 in 1971 to 3,200 by the end of 1974.

As recorded above, however, the Ministry of Health in cooperation with the GOP's Planning Commission, has undertaken some health planning in connection with the current five-year plan (1975-80). One of these schemes was termed the People's Health Scheme, which was actually supposed to have been launched in 1973-74. Under this plan the GOP hoped to bring comprehensive health services to rural Pakistan. The plan provided for constructing and staffing Basic Health Units (BHU) throughout rural Pakistan, one for every 10,000 people in heavily populated areas and one for every 5,000 people in sparsely populated areas. The plan also provided for expansion of services provided by district hospitals, improvement and expansion of medical and para-medical training, integration of all community health services such as family planning and communicable diseases, and new drug shops at the rate of one for every 50,000 population. Data on the implementation of this program are not available but ancillary information suggests that the program remains largely in the planning stage.

Still another experimental program called the Health Guards Program has been launched by the GOP to assist the rural Pakistanis in the northern areas of Pakistan. The Health Guards are paramedics who do regular jobs together with medical work on a part-time basis. This program, although funded by the GOP, is not operated by the central government's Ministry of Health. Nor, as clearly as we can determine, have the guards been integrated into the provincial, district or *tehsil* public health services. Indeed, one of the reasons why it has not been more successful is the rivalry between the guards and the regular provincial and district public health service. Nevertheless, the Health Guards Program has been continued under the current fifth plan. These and other health plans are reviewed in more detail in Chapters Two, Three and Four.

This brief synopsis of the Pakistan health environment, in any event, strongly suggest that the GOP is confronted with a complex series of health problems which constitute a serious drain upon Pakistan's development progress. These health problems are essentially those of a developing nation and can be duplicated in most countries at the same stage of development. These health problems include communicable diseases (tuberculosis, cholera, bacillary dysentery), serious malnutrition, an unacceptable population growth rate, maternal and child health deficiencies, and aggravated malaria incidence, although the latter may not be present in some LDC's. The problems also include compounded failures by the GOP, such as focusing its limited health resources in urban areas instead of rural Pakistan where the demand is greatest, inadequate facilities to train health manpower, administrative problems in the central, provincial and local public health services, grossly inadequate health data collection, and a myriad of financial problems.

There are recorded in Chapter Two and the subsequent chapters the details of the principal diseases afflicting the Pakistanis and a delineation of other health problems such as health organization, health manpower, malnutrition, MCH deficiencies, and others set forth in summary above. Finally, an attempt has also been made to understand the difficulties encountered by the GOP with its programs, or lack thereof in some instances, in meeting the demands of Pakistan's health environment. From these analyses some modest proposals are offered to complete this paper.



## CHAPTER TWO

### HEALTH RISKS, DISEASES AND OTHER PROBLEMS AFFECTING THE PAKISTAN HEALTH ENVIRONMENT

In the previous chapter an effort was made to characterize the health environment of Pakistan. This characterization clearly suggested that Pakistan was generally an unhealthy geographic area. Indeed, it has been described in terms of health status as "miserable." Its inhabitants suffer from a variety of communicable diseases such as enteric fever, cholera, malaria, influenza, diphtheria, scarlet fever, measles, mumps, tuberculosis, dysentery and typhoid, as well as numerous other direct and related health problems (see the tables at the end of this chapter). The following is an attempt, to the extent permitted by our data, to examine these diseases as well as other areas of prominent health risks to Pakistan.<sup>1</sup>

#### Areas of Prominent Health Risks

##### Malaria

Malaria continues to be a major public health problem of Pakistan despite an intensive program in recent years designed to eradicate the disease. Before this project got underway, it was estimated that malaria was responsible for 24 million cases and 500,000 deaths per year. By the end of 1965 about 53% of the population of both wings were living in areas protected by spraying operations. Although significant progress was thus achieved, malaria remained a serious problem with large areas in which malaria was not eradicated. Understandably, priority was given to those sections which had a high population density and where the incidence had been greatest in the past. Unfortunately, due to a slackening of effort in the late sixties and early seventies, especially in the long-run maintenance phase of the program, the progress achieved in the middle sixties was lost and malaria rates have increased strikingly to the epidemic level once again.

Throughout Pakistan, malaria is most prevalent during the years when the monsoon rains are heaviest and in the areas which are poorly drained. When the pre-monsoon rains and the July-August precipitation are above normal, certain areas of Pakistan are flooded, and conditions are conducive to mosquito breeding, particularly in the riverine plains. The end result is a high mosquito population and a high incidence and mortality from malaria. In 1971, 10.4% of all recorded deaths in Pakistan were attributed to malaria.<sup>2</sup>

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<sup>1</sup> The data used in delineating specific diseases in this Chapter are derived principally from the Health Data Publication, *op. cit.*, pp. 31-45; Prof. A.H. Awan, M.D., The System of Local Health Services in Rural Pakistan. Lahore: Public Health Association of Pakistan, 1969, pp. 7-18; GOP Development Perspective, *op. cit.*, pp. 287-298, 320-321; Annual Plan: Health and Population Planning, 1975-1976. Islamabad: GOP Planning Commission, 1975; Health and Health Related Statistics of Pakistan. Islamabad: GOP Planning Commission, 1975; and unpublished documents provided various consultants by the GOP.

<sup>2</sup> See GOP Development Perspective, *op. cit.*, p. 321, and Table 4 at the end of this chapter.

In many parts of Pakistan the situation is being compounded by man himself. The improper construction of many irrigation canals and dams has resulted in the soil becoming waterlogged, particularly where drainage is inadequate. Standing water in low-lying land not only renders the land unfit for cultivation, but also provides excellent breeding places for the malaria vectors.

A small survey made in 1960 in then West Pakistan, indicated that about 60% of the malaria cases were caused by *Plasmodium vivax*, and 35% were due to *P. falciparum*. The remainder were mixed infections. This survey was made along the Indo-Pakistan border, and it is not known whether these percentages are applicable to the rest of Pakistan. Transmission in Pakistan is said to be greatest in the fall and early winter months.

The chief vectors of malaria in Pakistan are: *Anopheles culicifacies*, *A. superpictus* and *A. stephensi*. *A. culicifacies* is widely distributed throughout Pakistan, while *A. superpictus* is common in those divisions which border on Afghanistan in the west and the northeast. In the Gilgit district, *A. superpictus* is believed to be transmitting malaria at elevations up to 10,000 feet. *A. stephensi* is largely restricted to the Hyderabad division (Sind).

### Cholera

In Pakistan, cholera appears from time to time in epidemic form, and after partition from India, epidemics occurred in the then West Pakistan for three or four years. It was thought the disease was imported from India by the refugees and this was strengthened when it disappeared from West Pakistan during the 1950's. However, in 1960 there was an epidemic involving about 7,500 cases and 1,225 deaths. This epidemic was most severe in the vicinity of Lahore, Sialkot, and Gujranwala; cases were also reported in Peshawar, Quetta, Makran, Kalat and Hyderabad. No further cases were reported until June 1965, when twelve cases were reported from Karachi. There was cholera in Baluchistan and it spread widely in Afghanistan and Iran. During the latter sixties many more cases were seen in Lahore and elsewhere, but these were not reported. In 1971, there were 224 cases of cholera and six deaths reported.<sup>3</sup> Later data on cholera are not available.

### Tuberculosis

Tuberculosis is a massive public health problem in Pakistan. Its size has never been accurately determined. Officials have estimated that there may be well over one million active cases, and that two thousand persons may die from this disease each year.<sup>4</sup> The official data released by the GOP on notifiable diseases for 1973 showed 33,256 cases with only 514 deaths.<sup>5</sup> In any event, many do not seek medical care of any type and are unaware that they have tuberculosis. In addition, health analysts believe that most of the cases are never reported. Surveys have been made of selected groups of the population, however, and these indicate a high

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<sup>3</sup> Unpublished GOP statistics on communicable diseases. See tables at the end of this chapter.

<sup>4</sup> See Awan, *op. cit.*, p. 16 citing the GOP's Outline of the Third Five-Year Plan which suggests that as many as 150,000 may die of this disease each year which, of course, appears to be an inordinately high figure.

<sup>5</sup> See Tables at close of this chapter.

level of infection and disease among high school and college students and mill workers. A countrywide BCG vaccination program was inaugurated in 1951, and thirty-two mobile combat teams were in operation. During the early sixties, over 40 million were tuberculin tested and some 20 million vaccinated. About 13 million of these were tested during the four-year period, 1960-1963. The effect of this program upon the incidence of tuberculosis during the remainder of the sixties and early seventies is not precisely known, but its effect seems to have been minimal at best.

### Trachoma

Trachoma is a very serious problem in Pakistan. It is a major cause of blindness among the Pakistani. Surveys taken in the late sixties showed the disease to be active in 30-70% of the population, and that as high as 90% of the people have or have had the disease. The World Health Organization (WHO) has sponsored a control program which began operations in 1962. Five teams, each headed by an ophthalmologist, have been active in this program and have been treating patients since 1964.

### Smallpox

During the late sixties Pakistan and India constituted the main reservoir of smallpox in the world. The disease was always present in the country and severe epidemics occurred at irregular intervals. In 1958, a severe epidemic affected the then East Pakistan, and within a six-month period there were 45,000 cases and 20,500 deaths. The disease was classical smallpox, and the case fatality ranged from 35-45%. During the same year, there were reported over 3,000 cases from then West Pakistan. An extensive vaccination program was instituted during the epidemic of 1958 and is reported to have been maintained since that time. The incidence of smallpox has declined in recent years which is reflected in GOP data for 1973 showing 9,258 cases and 1,122 deaths.<sup>6</sup> Since 1973 continuing surveillance suggests that transmission of this disease may have ceased.

### Other Enteric Diseases

Enteric diseases are a major cause of illness and death in Pakistan. The Ministry of Health reported that for 1973 there were 9,714 cases of enteric fever recorded with 67 deaths. Like virtually all of the GOP data, we believe this represents gross underreporting. Another source, for example, estimates at least 1.2 million cases of enteric fever annually in Pakistan with a fatality rate of 2.25%.<sup>7</sup>

As is usual when a multiplicity of etiologies is involved, specific diagnosis is seldom possible. Thus, the relative importance of the various types of enteric disease is unknown.

Both amebic and bacillary dysenteries are also present, as are the common diarrheas. It is reported that amebic dysentery is more common than bacillary dysentery. This may not be true, because it is easier to demonstrate in the laboratory the presence of *Entamoeba histoly-*

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<sup>6</sup> See Awan, *op. cit.*, p. 17 in which he claims a smallpox morbidity rate of 90 per 100,000 and a mortality rate of 36 per 100,000.

<sup>7</sup> *Ibid.*, p. 17.

*tica*, than the presence of *Shigella* infections. All hospitals have microscopes used for stool examination, but very few can perform bacteriological isolations for *Shigella*. There is also a tendency for some workers to make a diagnosis of amebic dysentery whenever an amoeba is found, and this overlooks the fact that man can harbor the amoeba without giving rise to disease. In any event, the GOP's Ministry of Health reported that in 1973 there were 86,580 cases of dysentery in Pakistan with 164 deaths. These data may also represent serious underreporting.

The occurrences of enteric disease in Pakistan can reasonably be ascribed to a lack of basic sanitation, with the resulting pollution of water supplies, inadequate excreta disposal, contamination of food, and an abundance of flies. Until these defects in the culture are overcome, the so-called filth-borne diseases will remain widespread.

#### Typhoid and Paratyphoid

Although typhoid and paratyphoid fevers are quite common, no reliable data are available to indicate their prevalence. Two thousand to 4,000 cases were reported to the Ministry of Health each year during the sixties. Most cases were seen in children, and the adult population appears to be immune. The adult Pakistani has probably become resistant to infection with enteric organisms as a result of previous experience with these diseases.

#### Tetanus

Tetanus is quite common in all parts of Pakistan, but the number of cases is not known. The disease results from infection of wounds by the tetanus bacillus - often puncture wounds. The case fatality is high. Tetanus of the newborn is particularly prevalent and, to a large extent, is the result of dressing the umbilicus at birth with non-sterile applications.

#### Dengue

Dengue is said to be endemic in all parts of Pakistan except in the mountainous areas of the northwestern frontiers. Studies conducted in the late sixties indicated that many cases may be misdiagnosed and are really West Nile virus disease. Dengue is seldom fatal and rarely requires hospitalization but is likely to occur in extensive, explosive epidemics. It is mosquito-transmitted, and the chief vectors in Pakistan are *Aedes aegypti* and *A. albopictus*.

#### Respiratory Disease

Until recently, it was commonly assumed by residents of the temperate zones that tropical and semitropical countries do not have much respiratory disease. This is not so, and respiratory disease is quite common in tropical climates. In Pakistan there is a high incidence of acute respiratory disease, ranging from the common cold to influenza and pneumonia. GOP health institution-based data of sickness records respiratory diseases as constituting up to 20% of all institution reported illnesses.

Pneumonia is quite common in both children and adults, and both bacterial and viral pneumonias occur. Streptococcal disease is also prevalent. Influenza occurs in the epidemic form at irregular intervals. In 1973, however, the GOP reported only 3,165 cases of influenza with one death; again, we believe, another instance of serious underreporting.

### Intestinal Helminthiasis

As a result of the defective sanitation and the non-hygienic habits of the people, most Pakistani are infected with one or more types of intestinal parasites. According to the GOP, parasitic diseases constitute up to 30% of institution reported morbidity and over 53% of reported mortality. Helminthiasis is highly prevalent and is directly related to soil pollution. The most common forms of helminths are hookworm, roundworm, whipworm and pinworm. In Pakistan the predominating type is *Ancylostoma duodenale*. The roundworm, *Ascaris lumbricoides*, is particularly common in children. The whipworm, *Trichuris trichiura*, and the pinworm, *Enterobius vermicularis*, have widespread distribution.

Infection with tapeworms is limited by the dietary habits of the people. The Moslems do not eat pork, and most Hindus are vegetarians and look upon the cow as a sacred animal. Consequently, the Moslems are seldom infected by the pork tapeworm (*Taenia solium*) and the Hindus rarely acquire the beef tapeworm (*Taenia saginata*). Infections with the rodent tapeworm (*Hymenolepis diminuta*) and the dwarf tapeworm are seen but they are rarely reported, but may be more common than supposed.

### Other Diseases of Lesser Health Risks

#### Leprosy

Leprosy is found in certain areas of Pakistan. Estimates of its prevalence vary widely and are not reliable. It has been reported by the GOP that in 1973 there were 376 cases of leprosy recorded in Pakistan. This, of course, may be very low since other sources believe that there were at least 20,000 cases in the sixties.

In the late sixties there were asylums for advanced cases but they had little or no equipment for treatment, and most lacked medical supervision. Many of the leprosy patients were treated on an outpatient status, and there were leprosy drug dispensaries located in the Regional Health Centers. There were also a number of mobile treatment units.

#### Typhus Fevers

Epidemic typhus occurs in some parts of Pakistan, notably where the winter is cold and heavy clothing is worn. The disease is most frequently encountered in the following districts: Dera Ismail Khan, Multan (around Dera Ghazi Khan) and Peshawar (around Hazara) in the tribal areas of the old Northwestern Province (Dir, Swat, Amb, Kalam, Chitral) and in Gilgit district. Since the vector is the human body louse, the seasonal incidence is during the late winter and early spring months when the louse population is greatest. The 1973 GOP reported recorded only fifty-five cases of typhus with no deaths.

Murine typhus was also reported in the cities of Pakistan during the sixties. It is primarily a disease of rats and can be transmitted to man by the rat flea, *Xenopsylla cheopis*. It is only in recent years that scrub typhus has been recognized in Pakistan. Conditions are favorable for the vector mite, *Leptotrombidium deliensis*, and it has been seen in parts of Sialkot. Other species probably act as vectors among the hills, mountains and oases. However, scrub typhus is a rural disease, and the majority of those attacked do not receive medical care. Its presence was suspected, but human cases were first recognized during the Kashmir War when they occurred on both sides of the cease-fire line. The number of human cases has not been great, but recent surveys have isolated the causative agent, *Rickettsia tsutsugamushi*, from rodents and chiggers in many parts of northern Pakistan, including places at elevations up to 10,500 feet where snow lies on the ground for nine to ten months of the year.

### Relapsing Fever

Louse-borne relapsing fever has not been reported in Pakistan in the past few years. Although no epidemics have occurred, the disease is probably present. It is most likely to occur in the mountainous regions along the northwestern frontier of Pakistan where the people wear heavy clothing during the winter months. Louse control measures against epidemic typhus are equally effective against this form of relapsing fever and the anti-typhus campaign has probably been effective in reducing relapsing fever. However, lice are still present and the disease is a potential threat.

### Infectious Hepatitis

Infectious hepatitis occurs infrequently among Pakistani adults but is the cause of considerable illness and incapacitation among visitors and residents who have come to Pakistan from America and Europe. It is believed that most Pakistani develop the disease in childhood and experience mild or inapparent disease which immunizes them so that they do not have the disease as adults.

### Sandfly Fever (Pappataci fever, Phlebotomus fever, three-day fever)

This acute, self-limited, febrile disease is non-fatal but incapacitating. It is transmitted mainly by a blood-sucking fly (*Phlebotomus papatasi*), although other sandflies have been found infected and may also transmit it. The disease is highly endemic in Pakistan, particularly in the central and northern parts. Sandfly fever occurs more frequently in the summer and early autumn when the sandfly population is at its height.

### Brucellosis

Brucellosis occurs in both man and animals and is a serious economic problem. *Brucella abortus* infections are common in cattle, including buffaloes, and *B. melitensis* is found in sheep and goats. *B. canis* has not been recognized, probably because swine are proscribed to the Moslem population. Transmission of this disease to man usually occurs through the ingestion of milk and other dairy products, although it can also be contracted through contact with infected animals, their tissues or secretions. Most infections can be avoided by boiling or pasteurizing all milk before use.

### Leishmaniasis

Leishmaniasis occurs in both the visceral and cutaneous forms in Pakistan. The disease is transmitted by species of sandflies. Transmission is greatest between November and February when the sandfly population is at its height. Its greatest impact appears to be in young adults, and the disease is most prevalent in rural areas.

The cutaneous form (Oriental sore) is found in Pakistan. It is caused by *Leishmania tropica* and is found where the climate is hot and dry. The most common vectors are *P. papatasi* and *P. aegypti*. Oriental sore is endemic in the vicinity of Lahore. It is also found in Peshawar, Dera Ismail Khan, Rawalpindi, Sarghoda, Multan, Hyderabad, and Karachi.

### Rabies

Rabies is endemic in Pakistan, and human cases frequently occur. In addition to dogs and other domestic animals, much of the reservoir is among wild animals. Rabies is not reportable, and the incidence is not known. A phenolized vaccine is used to vaccinate dogs, but this is not compulsory, and the destruction of stray dogs meets with public opposition. During 1966, for example, an epidemic in lower animals and man was reported.

### Plague

Although plague has not been a great problem in Pakistan since independence, the disease does occur, and during the sixties it was reported in and around the city of Bahawalpur. The presence of rats in the large cities is a constant menace. Internationally, plague was at a low ebb during the 1950's but signs of recrudescence occurred in the sixties.

Most cases of plague are of the bubonic type which is transmitted by the rat flea. However, septicemic cases occur from time to time, and even the pneumonic type may occur. Prompt treatment with the broad spectrum antibiotics or streptomycin is highly effective with the pneumonic form, although less so than with bubonic form.

### Venereal Disease

As in all other countries of the world, venereal disease is present in Pakistan. Most of the cases are never seen by a physician and their number is unknown. It is known that all types of venereal disease are common. As always, syphilis and gonorrhea are most frequent. Chancroid, *lymphogranuloma venereum* and *granuloma inguinale* are all present.

### Other Communicable Diseases Constituting Minor Health Risks

In addition to those diseases of a more serious and widespread nature recorded above, the Government of Pakistan's Ministry of Health has also indicated several other ailments which threaten the Pakistani people. Again, we believe that these data may reflect serious health problems but are unable to verify these suspicions at this time.

Thus, in 1975 the Ministry of Health recorded (see table at end of chapter) 42,960 cases of whooping cough with no deaths; 911 cases of poliomyelitis with 58 deaths; 17 cases of tubercular spinal disease resulting in 40 deaths; 517 cases of chickenpox with 1 death; 1,346 cases of diphtheria with 49 deaths; 406 cases of sprue, no deaths; 447 cases of puerperal fever with 22 deaths; 5,005 cases of measles and 320 deaths; and, 2,551 cases of mumps with 6 deaths.

Finally, the Government reported only six cases of scarlet fever resulting in 1 death and 150 cases of frysipelas.

### Other Non-Communicable Diseases and Health Problems

#### Malnutrition and Nutritional Diseases

A large part of the population of Pakistan suffers from undernourishment. Although food production has been adequate to provide a minimum amount of dietary requirements for the popula-

tion, malnutrition still occurs due to imbalance in production toward cash crops, bad distribution of food and inadequate facilities for the preservation of food.

The principal agricultural products of vegetable origin are wheat, fruits, rice and vegetables which contribute about half of the production. The main products of animal origin are buffalo milk, beef, buffalo, mutton, poultry and fish. Only about one-third of the proteins are from animal origin while two-thirds are from vegetable origin.

Distribution of food is variable according to income. Therefore, the poor suffer the most from malnutrition. But the problem of distribution exists also at the household level. There the wage earner (male) consumes the biggest and best share of the food available with the consequent concentration of malnutrition in women, especially when pregnant, and in children.

Inadequate facilities for the preservation of food are responsible for loss of a sizeable amount of the grains produced. Lack of transportation facilities also contributes to the limiting of varieties of foods among all Pakistanis. Additional problems are the lack of dietary education which does not allow the population to consume inexpensive but adequate foods, and adulteration of foods which, by press reports, seems to be very frequent in the country.

Evidence of malnutrition among the population has been obtained from Government nutrition surveys which indicate that caloric intake is on the average adequate, but that this intake varies with income so that poorer Pakistanis only get a fraction of the minimum requirements estimated by FAO for Pakistan.<sup>8</sup> The same thing happens with protein intake, although the income variable seems to be less important in this case. The primary problem with protein intake is basically one of quality insofar as only about 12% of the protein intake is from animal origin.

For both the urban and rural populations, thus, there are deficiencies of Vitamin A, Riboflavin, Vitamin C, iron, and iodine. The urban population also shows a deficiency of calcium intake. In particular, there are serious deficiencies of vitamins, iodine and iron among pregnant and lactating women. The surveys show that malnutrition is very prevalent and one of the principal causes of disease, not only because it produces disease itself, but also because it debilitates the body, reducing the resistance to other diseases (see Chapter Four for additional detail).

#### Maternal and Child Health

It was estimated at the close of the sixties by the Government Planning Commission that adequate MCH services in Pakistan would require one MCH center for every 10,000 population. It was assumed at that time that this would require 12,000 MCH centers for both East and West Pakistan.

At the close of the decade, 862 such units were available, 585 in West Pakistan and 117 in East Pakistan. After the secession of Bangladesh some additional centers were constructed so that by the beginning of 1974 the Government believed there were 715 MCH centers in Pakistan.

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<sup>8</sup> See Awan, *op. cit.*, p. 14, see also Government of Pakistan, Nutrition Survey of West Pakistan (February 1965-November 1966): A Report, June 1970. Islamabad: Government of Pakistan, Ministry of Health, Labor and Family Planning, 1970; and others, see bibliography.

Along with the family planning program, the Government of Pakistan hopes through the new MCH centers to reduce maternal and infant mortality significantly. The infant mortality rate was believed to be 150 per 1,000 live births in 1960 but has improved somewhat since then, registering about 111 per 1,000 in 1974. Maternal mortality has also improved over the past decade and in 1974 stood at about eight per 1,000. At the same time infant mortality was 25 per 1,000 in 1965 and maternal mortality was 0.9 per 1,000 in 1949 in the United States.

#### Degenerative Diseases

The data available from the GOP Ministry of Health on degenerative diseases in Pakistan is extremely limited. As in most LDC's, the degenerative diseases, cardiovascular and carcinoma, are, as yet, only a minor blight on the health environment but will undoubtedly become more prominent as urban industrialization gains momentum.

Thus, the Government of Pakistan has recorded that diseases of the heart and circulatory system account for only 3.0 to 4.0% of health institution sickness, while tumors comprise only 0.5 to 1.0% of such illnesses. Cardiovascular diseases account for only 1.79% of estimated deaths in Pakistan while tumors are accorded only 0.34% of estimated mortality in Pakistan.

#### Special Aspects of Pakistan's Health Environment: Associated Conditions

##### Environmental Deficiencies

Most of the population of Pakistan live in rural areas where there are not adequate means for collecting and disposing excreta and refuse. Bodily functions, such as defecation, are usually done in open fields, where the excreta serves as breeding grounds for disease vectors, contaminates the water supply and serves as sustenance for mosquitoes and flies, from whence they transmit infections to animals and humans alike. One of the most urgent needs in Pakistan from the health point of view is the provision of sanitary latrines appropriate to the cultural framework of the Pakistani rural population.

Lack of pure and safe water supply is an equally important problem. Although natural sources of pure water are often available, the water is usually contaminated before it is consumed. This is due to lack of education of the population, lack of latrines, and no special provisions for drinking water for animals. Further, there are no proper drainage facilities even in urban areas. Air pollution is also beginning to affect the industrial areas and to be a cause of concern due to the respiratory diseases that this may provoke.

Lack of personal hygiene has to be added to environmental problems as a cause of disease in Pakistan. The population may wash in polluted water but the lack of use of soap makes the conditions substantially worse. (See Chapter Eight for a more detailed survey.)

##### Excessive Population Growth

The excessive growth of the population and the consequent redistribution by age and residence has also contributed to the poor health of the population by putting pressure on the nutritional resources, accentuating environmental deficiencies recorded just above, and by diffusing the gains produced by the economy.

Preliminary results of the 1972 census indicated a population of 64.9 million persons for Pakistan. By the close of 1974 Pakistan was estimated to have a population of approximately 70 million. This implies a doubling of the rate of growth since the 1950's. At the same time

excessive growth has increased the proportion of people in the younger ages (0-14) which today account for about 45% of the population. Excessive growth has also changed the distribution among provinces and the distribution between rural and urban areas.

During the period 1970-74, the GNP grew only at an average rate of 3.7% per year, although it grew at 4.3% for the period 1964-74. With a rate of growth of population of 3% per year (or perhaps more) the average GNP per capita could only grow at a rate of about 0.7% per annum. Moreover, food crops increased only by 79% since the early fifties, whereas the population has doubled as noted above. Thus, there has been a decline in per capita food production while practically all the gains of the economy during the last four years were absorbed by population increase rather than by higher standards of living. Continuation of present trends in the economy, in population growth, and in health expenditures, would then imply that few improvements in health care would be forthcoming until the balance between the GNP and population changes. (See Chapter Five for the details of the Pakistan family planning program designed to reduce the population growth rate to below 3.0% by 1980.)

### Health Services Inadequacies

The high mortality due to disease is to a large extent a consequence of the lack of medical services. It is estimated that the country had approximately 15,000 physicians in 1973-74, but far fewer numbers of nurses, lady health visitors, and various medical technicians to provide medical services for the population. This implies only one doctor per 1,400 persons; one nurse for 23,300 people and one lady health visitor per 70,000 people (see Chapter Four for details of health manpower resources).

Distribution of personnel and physical facilities between rural and urban areas, however, makes the situation worse for the rural population. There is one physician in the rural areas for 25,000 people. Medical facilities are also totally inadequate. There is one hospital bed per about 600 people in urban areas, but there is only one hospital bed for 13,000 people in rural areas. Furthermore, dispensaries, which constitute the smallest unit for the provision of health care, number only 3,086 for the whole country with 2,097 of these in rural areas. The nonexistence or inadequate number of professional medical services implies that the population has to use the services of *hakims*, homeopaths and similar personnel, or go without services. The non-professional medical personnel (*hakims* and others) are estimated to be about 40,000 in the country, or one per 1,750 people.

Thus, the rural population remains largely in the hands of the private sector mainly for curative services, which suggests virtually no western-oriented medical care for the masses of Pakistani people. The private sector is relatively expensive, given the fact that the average income per capita is only about \$100 per year, and in rural areas it is possibly only about \$20 to \$25. Although the services may be expensive for the public, they are not expensive enough for the western-trained medical practitioner. Professionals, therefore, prefer not to practice in the rural areas. High costs of drugs also contribute to the lack of medical care for the general population (see Chapter IV for details of Pakistan health manpower).

### Financial, Manpower and Other Constraints

Financial Problems - As reported in Chapter I, the data on Pakistan health budgets differ, depending on the source. The Government official data for 1972-73 indicated only 95.55 million rupees (Rs) expended, while private sources suggested the health budget for fiscal year 1972-73 was Rs 322 million. Out of this Rs 139 million correspond to the development budget and Rs 183 million to the non-development budget. The estimated expenditure per capita came to Rs 4.73 per year. For 1973-74 private sources estimated the budget to be Rs 415 million, while the Government recorded only 157.67 expended. The budgetary differences, however, may reflect the dif-

ference between actual GOP health expenditures and planned budgetary funding. Using the private estimates, this increase suggested that the expenditure per capita would amount to Rs 5.93 per year. The significant point to observe, in any event, is that this corresponds to approximately 0.50% of GNP which reflects no increase in priority for the health sector as compared to the past fifteen years.<sup>9</sup>

Expenditures on health in the private sector do not appear to be proportionately higher. Private expenditures in health, calculated by the GOP for 1972, were about Rs 1,600 million. This figure appears to increase the per capita public and private health expenditure to about 3.2% of GNP.<sup>10</sup>

These data, whether official Government or private estimates, imply that the GOP will face considerable difficulties in providing more services for the rural population. Improved quantitative and qualitative services depend on expansion of the budget in real terms. But budgetary expansion in real terms implies an increase in per capita productivity, which does not seem apparent. Until the present time, a large part of the health budget has been financed by foreign aid, especially from the United States, the UNDP, and WHO. Such bountiful aid may not be forthcoming in the future. Even if this aid continues in the future as planned, however, health improvement will only be accomplished with a larger quantitative commitment on the part of the Government.

Manpower Restrictions - The Pakistani quantitative deficiencies in health manpower were summarized previously. Although the Government is making efforts to increase the health manpower by opening new medical colleges and expanding admissions in already existing colleges, the problems of distribution and migration of personnel to foreign countries are still present.

Several questions arise regarding the training of health personnel. One is the quality of personnel to be trained. Secondly, in respect to paramedical personnel it is evident that given the cultural background of the population, more female personnel are required. A third question arises in respect to the contents of the curricula. What is needed in the country is people trained in new environmental and preventive medicine (see above and Chapter Four for details on health manpower).

Administrative Problems - It is evident that the health delivery system in Pakistan is plagued by administrative problems. There are problems in the performance of functions; in proper maintenance of physical facilities; in the logistics to move drugs and money; in coordination within the different branches of the health system; in recruitment; and, finally, there are problems in supervision, and use of a management information system (see Chapter Three for details on Pakistan's health administration).

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<sup>9</sup> See Development Perspective, *op. cit.*, p. 302, Table 5; see also Table 25 at the end of Chapter Ten reflecting combined health and population expenditures which for 1974-75 were recorded as 788.51 million rupees or 0.79% of GDP. The Country Health Programme: Information Document (unpublished GOP document), December 1974, Table A-13, indicates a total health expenditure of only 578.10 million rupees for 1974-75 which represents 2.52% of total GOP expenditures, a decline from 3.15% in 1970-71. This document is subsequently cited as Tahir (ed.), *op. cit.*

<sup>10</sup> Unpublished source.

### Problems and Conditions: A Statistical Summary

One observer of the Pakistan health environment has described it as "miserable." Despite the paucity of data he was able to cite several statistics on morbidity and mortality, in addition to those on the several problems recorded immediately above, all tending to support the relative accuracy of this description. These statistics were derived from Pakistani public health officials.

Life expectancy, for example, has been estimated at 47.5 years for males and 45.1 years for females. Infant mortality is 113-121 per 1,000. About 26% of children born die before they reach age five.

At least five times as many maternal deaths in pregnancy or childbirth occur in Pakistan as in the United States. The crude mortality rate is estimated to be 15-19 per 1,000 in 1975.

It is estimated that approximately 12 million Pakistanis contracted malaria in 1975. Tuberculosis appears to affect 50% of some regional populations. A sample survey of four villages in the northern areas of Pakistan found that among the sampled population, 36.4 per thousand suffered from goiter, 27.2 per thousand had chronic bronchitis, 23.5 per thousand suffered from pneumonia, 22.0 per thousand suffer from anemia, and 20.8 per thousand had rheumatoid arthritis.

Environmental conditions, as we suggested above, contribute substantially to the diseases afflicting the Pakistanis. The physical environment in most of urban and almost all of rural Pakistan is extremely unsanitary. Twenty-two to twenty-five percent either live in or are surrounded by urban slum conditions, and the rest of the population lives in or is surrounded by unsanitary rural environmental conditions.

Only 15% of the urban population enjoy access to basic sewerage facilities. Thirty percent of urban residents are currently served by some system of potable water supply (i.e. the water is safe to drink if it is boiled for fifteen minutes). The rural situation is even worse. Less than 15% have potable water supplies. There are no adequate facilities for collection and disposal of excrement and refuse.

In some rural areas, people defecate in open fields, where the excrement serves as an ideal breeding ground for disease vectors and contaminates the water supply. Even in cities, there are few areas that have proper drainage facilities. Parts of cities are laced with open cement catchment bins where nite soil and garbage are deposited.

There are comparatively few motor vehicles in Pakistan, but the exhaust from the scooters, trucks, etc., is exceptionally repugnant because the gasoline is mixed with oil. The result is a bluish haze in urban areas where there is not any traffic congestion at all.

Air pollution from factories is beginning to affect the industrial areas. There is still time for the GOP to control this potential source of illness, however.

Lack of personal hygiene has to be added to environmental problems as a cause of disease in Pakistan. Perhaps elementary health education and the cultivation of habits of personal cleanliness would be an area of major emphasis in programs to clean up the environment.

Finally, there follow several tables prepared by the GOP's Ministry of Health on morbidity and mortality. At best, we believe these data to be informal estimates. The table on communicable diseases in the NWFP was accompanied by a cautionary note observing that for the common communicable diseases, "these figures only present the tip of a submerged iceberg. Only a fraction of the people so afflicted go to the government hospitals where their diseases are recorded

Table 1: STATEMENT SHOWING NUMBER OF PATIENTS TREATED FROM \*  
COMMUNICABLE DISEASES IN NWFP DURING THE YEAR 1968

Disease	(Patients Treated)		Total	Deaths
	Indoor	Outdoor		
Cholera	--	--	--	--
Smallpox	98	334	432	23
Plague	--	--	--	--
Louse-Borne Typhus Fever	--	--	--	--
Louse-Borne Relapsing Fever	--	--	--	--
Yellow Fever	--	--	--	--
Measles	173	11,136	11,209	6
Chickenpox	39	531	570	--
Diphtheria	99	2,329	2,428	14
Tuberculosis (including T.B. of lungs)	5,014	78,639	83,653	145
Scarlet Fever	--	6	6	--
Enteric Fever	1,303	23,397	24,700	19
Brysipelae	--	1,096	1,096	--
Influenza	440	21,579	22,019	--
Peurperal Fever	--	--	--	--
Cerebrospinal Meningitis (Meningococcal Infections)	254	707	961	1
Dysentery	1,614	206,707	208,321	19
Leprosy	422	2,146	2,568	1
Mumps	71	3,770	3,841	--
Whooping Cough	186	17,616	17,802	--
Sprue	2	511	513	--
Acute Anterior Poliomyelitis	1	572	573	--

\* Government of Pakistan, Ministry of Health, 1968.

Table 2: COMMUNICABLE DISEASES NOTIFIABLE IN PAKISTAN IN 1973 \*

Disease	Punjab		Sind		N.W.F.P.	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Smallpox	415	50	7,848	897	194	35
Influenza	--	--	3,165	1	--	--
Typhus	--	--	55	--	--	--
Whooping Cough	53	--	4,446	--	187	--
Poliomyelitis	--	--	911	38	--	--
Relapsing Fever	--	--	26	--	--	--
Cerebrospinal	--	--	516	40	--	--
Chickenpox	140	--	149	1	--	--
Diphtheria	2	--	1,239	49	--	--
Leprosy	--	--	311	--	--	--
Sprue	--	--	406	--	--	--
Puerperal Fever	--	--	447	2	--	--
Scarlet Fever	616	--	60	--	--	--
Enteric Fever	15,931	65	7,469	2	772	--
Dysentery	3,155	92	50,001	39	15,170	--
Tuberculosis	--	348	24,641	85	3,680	--
Frysipelas	363	--	130	--	--	--
Measles	97	159	3,904	161	442	--
Mumps	--	--	2,377	6	57	--

Disease	Baluchistan		Total	
	Cases	Deaths	Cases	Deaths
Smallpox	801	140	9,258	1,122
Influenza	--	--	3,165	1
Typhus	--	--	55	--
Whooping Cough	--	--	4,686	--
Poliomyelitis	--	--	911	38
Relapsing Fever	--	--	26	--
Cerebrospinal	--	--	516	40
Chickenpox	228	--	517	1
Diphtheria	--	--	1,241	49
Leprosy	65	--	376	--
Sprue	--	--	406	--
Puerperal Fever	--	--	447	2
Scarlet Fever	--	--	60	--
Enteric Fever	857	--	9,714	67
Dysentery	5,478	33	86,580	164
Tuberculosis	1,780	81	33,256	514
Frysipelas	--	--	130	--
Measles	294	--	5,003	320
Mumps	--	--	2,531	6
			<u>158,878</u>	<u>2,324</u>

\* Government of Pakistan, Ministry of Health, 1973.

Table 3: HEALTH INSTITUTION BASED DATA OF SICKNESS

Disease	Percentage of Total
Gastrointestinal including parasitic diseases	25 - 30
Respiratory diseases	15 - 20
Fevers	10 - 15
Diseases of the skin and areolar tissue	5 - 10
Malaria	5 - 8
Diseases of the eyes	5 - 6
Injuries general and local	4 - 6
Diseases of the ear and nose	4 - 6
Diseases of genito-urinary tract	3 - 5
Dental diseases	3 - 5
Diseases of the heart and circulatory system	3 - 4
Diseases of bones, joints, muscles, etc.	2 - 3
Diseases of nervous system	2 - 3
Tuberculosis of all forms	1.5 - 3 (80% TB of lungs)
Infectious/communicable diseases	1.5 - 2.5
Deficiency diseases	1 - 2
Diseases of lymphatic system	0.75 - 1
Tumors	0.5 - 1
Other diseases	1.5 - 2

Source: Patient records of reporting public hospitals and dispensaries, 1973.

Table 4: ESTIMATED DEATHS BY CAUSE OF DEATH

Disease	Pakistan	Urban	Rural
<u>All Causes</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>
Tuberculosis of all forms	5.55	2.86	6.09
Bacillary dysentery and amoebiasis	2.51	2.88	2.44
Malaria	10.44	7.86	10.96
Diabetes mellitus	1.14	0.75	1.22
Diseases of heart and circulatory system	1.79	3.92	1.35
Tumors	0.34	0.00	0.41
Peptic ulcer, appendicitis, intestinal obstruction and hernia	1.20	1.09	1.22
Complications of pregnancy & childbirth	1.13	1.39	1.08
Congenital anomalies, birth-injury, difficult labor and causes of perinatal mortality	7.36	5.64	7.71
Infective and parasitic diseases	53.84	67.64	63.07
Accidents, poisoning & violence	1.88	1.05	3.03
Unknown causes	12.82	4.92	1.42

Source: Statistical Division, Population Growth Survey, 1971. Karachi, 1974.

with partial accuracy." This situation, of course, has been suggested when reviewing the previous data. These statistics, however, are useful in that they illustrate very poignantly the scope, if not the depth, of disease in Pakistan.

The aforementioned data are especially illustrative of the nature of the Pakistan health environment. Taken together, we believe they support the conclusions of private consultants who listed the principal causes for the "miserable" state of Pakistan's health environment as follows: (1) environmental conditions, (2) malnutrition, (3) excessive rate of population growth, and (4) a severely deficient health care system.

In this and the previous chapter, we have attempted to provide an overview of the Pakistan health environment, only touching upon the major factors: diseases, human pollution, lack of health manpower and facilities, etc., which comprised this health environment. In the subsequent chapters an effort will be undertaken to review, in as much detail as sources permit, each of these major factors which influence the Pakistan health environment and its economic and social development. Diseases will be omitted, of course, since we have already delineated in Chapter Two this aspect of the Pakistan health environment as extensively as our data permit.

## CHAPTER THREE

### ORGANIZATION AND FUNCTIONING OF THE PAKISTAN HEALTH SYSTEM: HEALTH AND DELIVERY OF HEALTH CARE

#### The Foremost Challenge

The available data, inadequate though they are, clearly reflect the inability of the current Pakistan public health system to serve the people. This is especially true with respect to caring for the rural population. Pakistan has a rapidly growing population which is primarily rural and which is afflicted with a wide variety of diseases and related problems stemming in large measure from the peoples' physical environment and socioeconomic status. These illnesses commonly include intestinal worms, goiter, respiratory infections, dysenteries, enteritis, rheumatoid arthritis, tuberculosis, pneumonia and chronic bronchitis. Despite this depressing health status, it has been reliably estimated that only about 15% of this rural population receives coverage from existing western-oriented health services.

Thus, the problem of providing health care to the rural population of Pakistan constitutes the foremost challenge facing the Government relating to the social welfare of the Pakistani people. Given this dearth of public health care, it is hardly surprising, therefore, that the vast majority of the Pakistani people have had to rely on private health care, to a limited extent upon western-trained professionals, and to a far greater extent upon the native, traditional *hakims* and *vaidas*.

#### The Imperial Health Service and Its Legacy

##### Caste and Charity

In 1947 the new Pakistan inherited a health structure pressed onto it by British imperial administrators. The health system under the British was designed to insure medical care for the armed forces and the civil services. The staff for this medical care was drawn from the British Indian Army Medical Services.

Thus, most of the Pakistanis who were accorded even this meager western medical care were the ruling hierarchy. The civil servants were provided medical care under an elaborate system which afforded medical care to the civil servant in accordance with his status in the government hierarchy. For the officers of the civil services there was a civil surgeon in each district belonging to the army medical service. He had a small staff and simple facilities. Lesser civil servants in each district were attended by an assistant surgeon or the sub-assistant surgeon according to the cadre to which each belonged. This service, in theory at least, was available only to the civil servant and not to his family or dependents although we doubt this structure was adhered to very strictly.<sup>1</sup>

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<sup>1</sup> Data for this chapter was derived in part from unpublished briefing papers provided by USAID consultants and derived ultimately from the Government's Ministry of Health.

In an effort to keep the staff of government hospitals and dispensaries occupied, however, the custom was adopted of permitting native citizens to use these facilities, sometimes as a matter of charity, but more often if they could pay for the medical care so dispensed. Thus, an interesting custom developed whereby government-employed physicians in the imperial service gradually became entitled to practice along with their government service. This practice has continued to the present time whereby, as our source observed, "the doctors in Government service in effect are whole-time private practitioners and part-time Government servants."

Although these hospitals and dispensaries were designated as charitable institutions, most of the care was on a fee-for-service basis. Thus, the native population, for the most part, was forced to depend upon the indigenous systems of medicine, variously called Islamic Systems of Medicine, and these systems, directed by the *hakims* and *vaidas*, has continued up to the present time. Similarly, the hospitals and dispensaries retained their designation as "charitable" institutions.

British administrators did undertake some health measures for the general population, however. Periodically, they provided vaccination against the epidemic diseases such as smallpox, and undertook emergency treatment in the face of outbreaks of cholera, plague, and typhus and sought to combat malaria. It was also the British who introduced local self-government institutions and made the local governments responsible for providing indigenous medical care. To assist these local governments, the British established as many hospitals and dispensaries throughout the sub-continent as resources would permit.

Upon independence in 1947, the hospitals and dispensaries in each province belonged to the local government. The total number of hospitals in the Punjab in 1947 was 163, with 416 dispensaries. There were reportedly only 1,200 physicians (one for every 60,000 people). There was one TB clinic in each province. There were no rural health centers or basic health units, of course, but there were Maternal and Child Health Centers in the large urban areas of Lahore, Multan and Rawalpindi. There was also one functioning medical college and one public health nursing school. A second medical college had just been organized in Sind Province. Moreover, Pakistan also found the influx of six million plus refugees needing medical care. Such was the background and status of the health sector upon independence in 1947.

#### Health Services Since Independence

For continuity and before reviewing private health services and the current status of Pakistan's health organization, a word on the nearly three decades which separate independence from contemporary Pakistan might be in order. Since the Government lacked health administrators and had to struggle to survive in any event, nothing in the way of public health services was accomplished immediately after 1947. Indeed, at best, the development of Pakistan's health services was haphazard. During those early years after independence attention was focused on expanding training facilities for medical and paramedical manpower. Several medical and nursing schools were established as well as the Institute of Hygiene and Preventive Medicine at Lahore to train medical administrators.

By 1955, however, the then West Pakistan Health Department put forth a fifteen-year master health plan for rural health services and referral hospital development. It would have provided for Rural Health Centers, district, and *tehsil* hospitals and would have been completed in 1972. This plan was rejected by the Planning Commission as too expensive and ambitious. During the second and third five-year plans, the objectives of rural health services contained in the original master plan were mentioned but no progress was made in improving rural health, nor did the Government have an articulate national health policy. During these years, however, the Ministry of Health did expand and obtained a full staff with the new graduates from the medical schools and the school at Lahore.

Finally, by March 1972, the Pakistani Government did unveil its first national health policy which was called the "People's Health Scheme." Its objective was to provide basic health services to the long neglected rural areas of Pakistan and it assigned priorities and articulated the financial and human resources required. The scheme, as noted elsewhere, was developed around the Basic Health Unit, to serve between 6,000 and 15,000 people as a sub-unit of the Rural Health Center. These BHU's and RHC's were then to feed the seriously ill into *tehsil* hospitals of sixty beds and/or district hospitals of 250 beds. Thus, the People's Health Scheme was designed to serve all of the rural people in the provinces by adhering to the system of local government, the Union Council, of which there were approximately 2,350, and providing every Union Council with a facility of which every fifth facility would be a Rural Health Center.

Of the 2,350 facilities initially to be built (a facility being either a BHU or an RHC for each Union Council), only 137 RHC's and 369 BHU's had been constructed by 1975. Thus, for a variety of reasons discussed below, the People's Health Scheme is foundering and the rural Pakistanis must continue to rely on so-called private health care, i.e., the traditional *hakims* and *vaidas*.

### Private Health Care

In 1972 there were approximately 14,000 medical doctors, i.e., western trained, in Pakistan serving an undetermined number of Pakistanis.<sup>2</sup> By 1975 it is believed that there were about 15,000 physicians in Pakistan. Approximately two-thirds of this number are in private practice with the remaining third in the public health service.<sup>3</sup> Many of those in the public health service are retired army physicians who, in any event as noted above, engage in dual practice. A very large number of the private practitioners are located in Pakistan's urban centers, leaving the rural areas either devoid of or sparsely served by western trained physicians.

The Government health officials have sought to alleviate this shortage of western-trained physicians by two means: (1) utilizing paramedicals and auxiliaries, the details of which we will examine in a subsequent chapter, and (2) promoting the practice of indigenous medicine.

### Hakims

This indigenous system of medicine is termed *unani* (*Tebbi*) and has been practiced in Pakistan for many centuries, having been introduced during the Moslem conquest of the Indian sub-continent.

The *unani* system is derived from ancient Greek medicine as developed by Hippocrates and evolved through the Arab conquests of the Near and Middle East. The practitioners of the *unani* system of care are called *hakims*, and in theory, are registered by a government board; but, in fact, are entirely engaged in the private practice of medicine.

The *unani* system is an empirical type of medicine, most of the medications of which are herbal. Many of the *hakims* have received almost no training while others have had several years

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<sup>2</sup> See Chapter Four for details.

<sup>3</sup> See Health Data Publications, *op. cit.*, p. 50, reference is to 1960 data.

of training, either from an experienced *hakim* or from one of three schools now training *hakims* on a regular basis. It is estimated that there might now be as many as 40,000 *hakims* practicing in Pakistan.<sup>4</sup>

### Vaids

There is also another system of native medicine practiced privately in Pakistan. This is the *Ayurvedic* system, deriving from India where it was introduced about 250 B.C. This system is based on the Hindu religion and philosophy, and employs the use of herbs in its treatment. Practitioners of the *Ayurvedic* system are called *vaids* and this system is also recognized by the Pakistani Government.<sup>5</sup>

Both the *Unani* and *Ayurvedic* systems have continued to prosper in the face of western medicine due to the extreme shortage of western-trained Pakistani physicians and the availability among the people of the *hakims* and *vaids*.

### Private Health Sector Income

In any event, it is apparent that the average Pakistani, whether rural resident or urbanite, relies much more on the private sector, including, of course, the *hakims* and *vaids*, than upon the public sector. Thus, it had been calculated that the annual expenditure for private services for western-trained physicians, drug and private hospital services, amount to about \$150 million. It has also been calculated that the Pakistanis spend about an additional \$30 million per year for the drugs and services dispensed by the 40,000 *hakims*. No figure has been estimated for the less prevalent *vaids*. But, the calculable expenditures for the services of the private health sector in 1973 or 1974, for example, amounted to about \$180 million. By comparison, the total public expenditure for health in FY 1974 was only approximately \$38 million, while the GOP budget for public health in FY 1975 called for health expenditures of only \$58 million.<sup>6</sup>

## The Public Health Sector

### The Ministry of Health and Social Welfare Organization

Our available data provide somewhat conflicting information on the organizational and operational status of the Government's federal ministry of health, perhaps because the health sector has been in a state of flux since 1971. In any event, a recent GOP publication designates the Ministry of Health and Social Welfare as part of the Health and Social Welfare Division, Department of Health, Labor and Social Welfare, Government of Pakistan.<sup>7</sup> The Minister of Health is

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<sup>4</sup> Unpublished USAID Briefing Paper on Hakims, September 1974.

<sup>5</sup> Health Data Publications, op. cit., p. 51.

<sup>6</sup> DAP, op. cit., p. 8, Health Sector; see the Table in Chapter Ten on annual expenditures for treatment in the private sector. The GOP estimated this to be 1,528,000,000 rupees (annually, 1970-1975), some \$25+ million less than the private consultant's estimate of \$180 million. As to the GOP health budget, initially it was set at 578,100,000 rupees for 1974-1975, approximately \$57,374,000, but later was increased to 788,100,000 rupees.

<sup>7</sup> Annual Report of the Director General Health, June 1971-June 1972. Government of Pakistan, Ministry of Health and Social Welfare, Health and Social Welfare Division, 1972.

assisted by a Director General of Health Services, located in Islamabad. The Director General is responsible, in theory at least, for the implementation of Government policies (see tables of organization below).

Prior to the independence of Bangladesh, the Minister of Health and Social Welfare was also assisted by two Provincial Directors of Health Services, one each for East and West Pakistan. At that time, the two Provincial Directors were supposed to enjoy relative autonomy, but in practice, were subject to the approbation both of the Minister and the Director General of Health Services, especially since the national government provided a significant part of the provinces' health budgets.<sup>8</sup>

Again, before the secession of Bangladesh, the Director of Health for West Pakistan was located in Lahore. He administered the public health services in West Pakistan through four divisions whose headquarters were located in Peshawar, Multan, Hyderabad and Quetta. These administrative divisions were further subdivided into fifty health districts, each of which was further administered by a civil surgeon for curative and a health officer for public health.<sup>9</sup>

#### The Ministry of Health and Social Welfare: Official Functions

The Federal Health Ministry is concerned with policy making and coordinating inter-provincial matters concerning health in the following specific areas:

- Negotiations and agreements with other countries and international organizations in the field of medicine and health;
- International aspects of medical facilities and public health; international sanitary regulations; port health and medical facilities abroad;
- Medical, nursing, pharmaceutical and allied subjects such as (1) maintenance of educational standards, (2) education abroad, and (3) educational facilities for backward areas and for foreign nationals;
- Standardization and manufacture of biological and pharmaceutical products and standards for export and import drugs;
- Medical research;
- Vital health statistics;

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<sup>8</sup> Health Data Publication, *op. cit.*, p. 49; Annual Report, *op. cit.*, pp. V-VIII; *idem.*, *op. cit.*, p. 50; table for 1974 does not show this Provincial Director's position, but in the data showing that some similar provision for federal-provincial relations was established. Thus, we have delineated the situation prior to 1971 for want of precise, definitive data showing an alternative federal-provincial relationship.

<sup>9</sup> See *Trip Report*, July 1974. A consultant visiting Pakistan in 1974 traveled to Lahore, Peshawar, and Karachi to talk to the Secretaries of Health for Punjab, Sindh and the North-West Frontier Province. He was unable to visit Quetta.

- Medical and health services for central Government employees;
- Medical service of Pakistan;
- National associations in medical and allied fields, such as the Red Cross, T.B. Association, etc.

There are attached two tables showing the organization of the Ministry of Health and Social Welfare within the Department of Health, Labor and Social Welfare of the Government of Pakistan and its planning division.

The Ministry of Health and Social Welfare: Functioning of the Public Health Sector

The whole public health sector, like the Ministry itself, has been fluid and undergoing change since 1947 at the creation of Bangladesh. The situation plus the vestiges of the colonial background from which the components of public health emerged have severely reduced its efficiency and effectiveness. Virtually all of our data, including official GOP publications, attest to this condition. In this fashion, the following are the principal factors sustaining the poor functioning of the public health sector:

- Due to the "service" orientation of the tradition of the Pakistan public health service, it has evolved into a patchwork pattern without a clear delineation of the responsibilities of the federal, provincial, district or local authorities.

The attitude of the "service" oriented public health officials towards the general public and their felt responsibility towards the public is to protect the public from or defend the public from.

The public health service is a patchwork of services, detracting from public health service efficiency, with the result that expenditures for public health services are extremely low, amounting to 0.7% of GDP in 1960-61 (including expenditures for population control).

Public health officials are plagued with administrative problems ranging from the failure of health workers to the inability to store and transport drugs.

Public health facilities are generally ill-constructed and vehicles are old and unreliable.

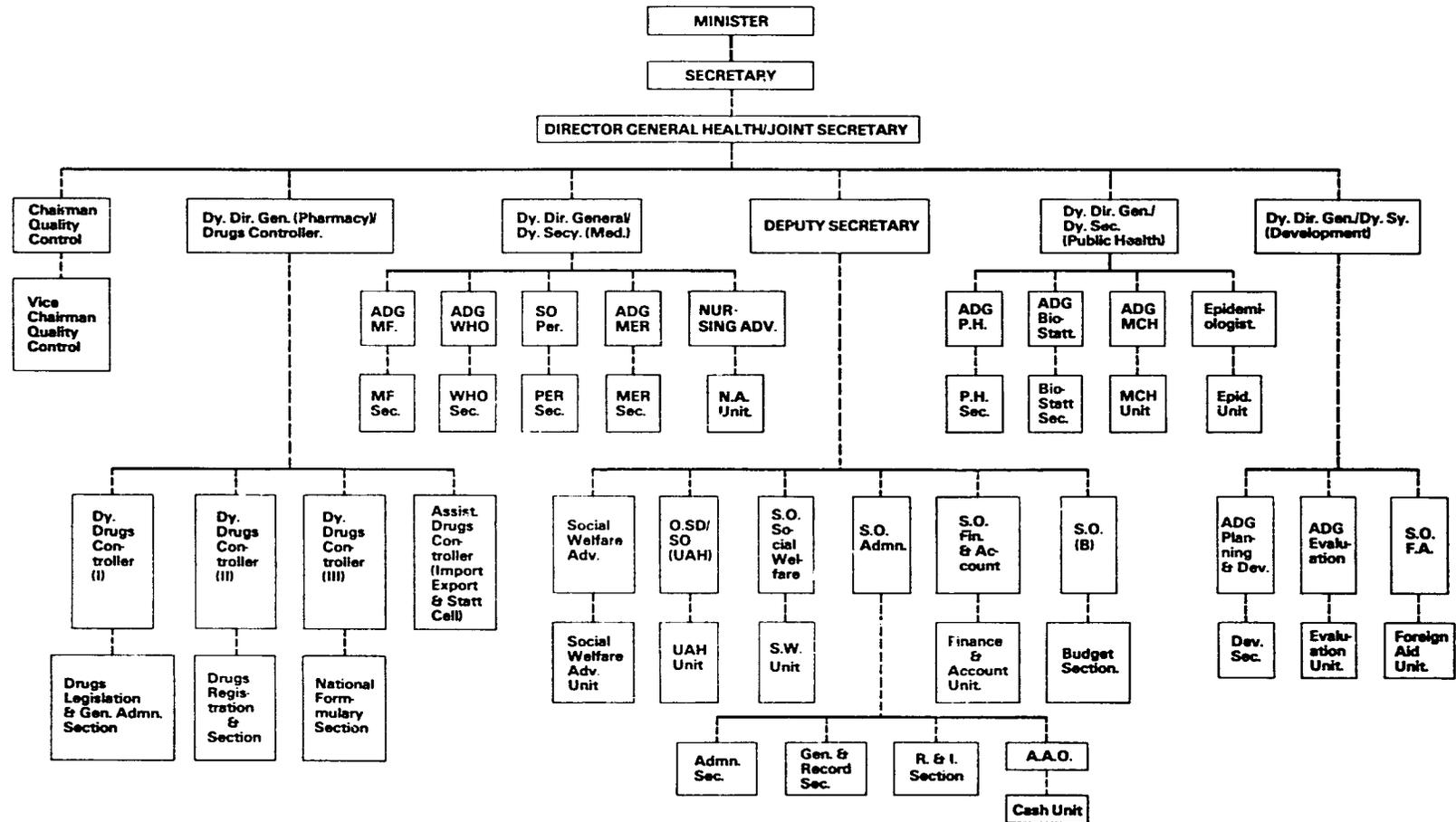
Public health officials have totally inadequate research and planning data.

Public health officials are overworked physicians with no management training and no continuing education opportunities.

Public health officials are overworked physicians who are overworked previously, and are not able to do other health care activities. All public health programs operate in isolation and are not integrated with the Ministry of Health or be integrated with other government departments and institutions.

Table 5:

**POSITION CHART OF THE HEALTH AND SOCIAL WELFARE DIVISION, ISLAMABAD \***

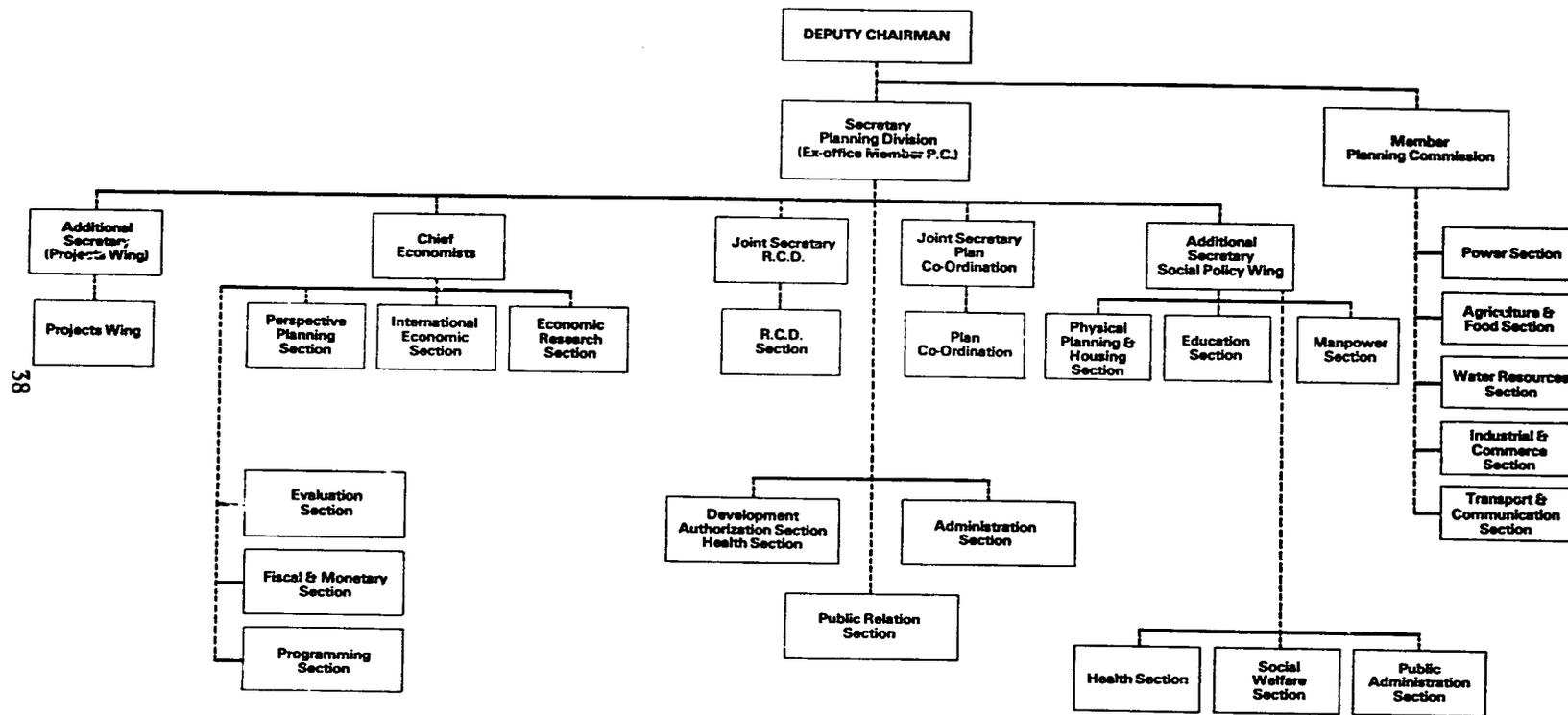


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\* Country Health Programme by M.I.K. Tahir (ed.), Islamabad: GOP, December, 1974, p. 50.

Table 6:

**FUNCTIONAL CHART OF THE PLANNING DIVISION \***



\* Ibid., p. 51.

- The federal and provincial health officials do not cooperate which some claim results from the failure to integrate all health programs, i.e., a causation for the retrogression of the malaria eradication program and the Health Guards experiment.

There are other important factors working against improved public health care including manpower constraints, planning deficiencies, educational shortcomings, etc., which will be reviewed in subsequent chapters. The historical, philosophical and administrative deterrents, recorded above, however, are alone severe enough to undermine implementation of the objectives of the fifth five-year plan, including the People's Health Scheme.

### Provincial and Local Health Departments and Services

In the prior review of the functions of the Pakistan Ministry of Health, it was noted that as a practical matter the provision of health care fell to a great extent on the provisional health departments and thence upon local districts. Indeed, as the Pakistan federal system progressed after 1947, primary responsibility for public health was supposed to rest with the provincial secretaries of the respective departments of health. But the federal Ministry retained control of special projects such as malaria eradication, family planning, etc. Thus emerged the current dispute between vertical and integration programming. Nevertheless, a review of the health environment, health activities and the structure and functioning of the health department of one of the provinces, the Northwest Frontier Province, will provide a useful example of the organization and operation of the provincial and district public health organizations and services in Pakistan.

Health Environment and Activities in the N.W.F.P.<sup>10</sup> - The North West Frontier Province is subject to virtually all of the diseases tormenting Pakistanis which were recorded in detail in Chapter Two. In particular, the people of the N.W.F.P. suffer from respiratory diseases due to the severity of the cold climate, water-borne diseases resulting from contaminated water and lack of excreta disposal, malaria, parasitic diseases, and high maternal and child mortality.

The provincial and district health departments pursue several active health activities, some in cooperation with the national Ministry of Health to combat these diseases. There are, for example, eighty-two MCH centers, nineteen Rural Health Centers and fifty Basic Health Units operating within the N.W.F.P. Not only is curative and preventive treatment practiced in the MCH centers, but each center also dispenses family planning assistance. In addition, there are also immunization programs underway in smallpox, cholera, and typhoid at the district and *tehsil* level. Finally, there is an extensive malaria eradication program underway in cooperation with the Ministry of Health funded by the central government, WHO, and other foreign donors.

The available data show that there were 439 physicians practicing in the province. There were also 205 nurses and 94 Lady Health Visitors as of 1973. Thus, in 1973 there was one physician for every 19,138 people, one nurse for each 40,985 persons and one Lady Health Visitor for every 89,382 persons. Not only is this a very unsatisfactory health worker-to-population ratio, but many of the physicians practice in the few cities of the province. Still, the above health programs are operable.

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<sup>10</sup> See Tahir, op. cit., Chapter Five, pp. 11-23.

Finally, due to the rugged terrain and poor roads, transportation is a very vexing problem. Most of the transport for health services in the N.W.F.P. has been provided by vehicles loaned by the UNICEF and WHO in connection with specific projects. The N.W.F.P. Department of Health has provided ambulance service to the district and *tehsil* level hospitals for secondary and tertiary care.

Provincial Department of Health - The provincial Department of Health of the N.W.F.P. is headed by the N.W.F.P. Secretary of Health who reports directly to the Minister of Health in Islamabad (see the following table delineating the organization of the N.W.F.P. Department of Health). The Secretary of Health is served by a Deputy Secretary of Health who, in turn, is assisted by six section officers that handle technical matters, budget, personnel, research, etc.

There is also a Health Directorate headed by a Director of Health Services who is assisted by four Assistant Directors for: (1) Medical, (2) Public Health, (3) Administration, and (4) Planning and Development. The Assistant Director for the Medical Section is responsible for drug inspection, for example, while the Assistant Director for Public Health covers the inspectorate of health services, health education and the T.B. program.

District Department of Health - In the districts, administration of preventive medicine, and supervision of the district hospital and dispensaries are the responsibilities of the district health officers. The district headquarters hospital is administered by the District Medical Superintendent. The rural health centers are also under the administration of the District Medical Superintendent. Finally, there is a straight line of authority in the malaria program from the Minister of Health down to the province level and, it would seem, to the district level.

Other Programs - The provincial Department of Health also has other health related responsibilities. One of these is supervising medical education in the provinces. In the N.W.F.P. there is only one medical college at the University of Peshawar, which is autonomous but there is clinical instruction at the Lady Reading Hospital in Peshawar, which is a government institution and is under the direct authority of the N.W.F.P. Secretary of Health. The provincial department is also responsible for health education in the education system. It also issues licenses to drug companies for the manufacture of pharmaceuticals. Finally, it is the responsibility of the provincial departments to provide transport service, i.e., ambulances, at the district and *tehsil* level.

Health Functions of Union Councils - The system of Union Councils was introduced in Pakistan by the Ayub Government through the Basic Democracies order of 1959. The objectives of the Government in creating the Union Councils included the association of the local Pakistanis in the management of public affairs and the promotion of basic democracy through local self-government.

The Union Councils were given a number of functions dealing with local governing matters including several public health functions concerning primarily environmental aspects. These public health functions included:



- environmental cleanliness
- clean water supply
- excreta and refuse disposal
- insuring adequate housing
- food hygiene and supervision of slaughterhouses
- collection of vital statistics
- occupational health, and
- first aid.

In addition, the Union Councils were to cooperate with the District Councils and the District Departments of Health in such functions as:

- direct medical care
- infectious disease control
- vaccinations
- provision of management of water works
- supervision of environmental sanitation
- health education
- malaria eradication, and
- medical education of paramedical personnel.

#### Health Facilities and Medical Care at Various Levels in Pakistan

In the early sixties the GOP reported that West Pakistan had 390 general government hospitals and 39 specialized government hospitals (maternity, chest, leprosy, eye, etc.), with a total of 4,057 beds.<sup>11</sup> This report also observed that there were an additional 353 "cottage and dispensary" government hospitals with 1,592 beds. At that time, there were also reported thirty general and nine specialized private hospitals with 2,598 beds.

By 1975 the health facilities in Pakistan had increased substantially even though the health care had not kept pace, and indeed, had only improved marginally due to several factors. There were then 548 hospitals, 3,086 dispensaries, 715 maternity and child health centers, 137 rural health centers, 369 sub-centers of rural health centers (BHU's) and 92 tuberculosis clinics.<sup>12</sup> There were also in 1975 a total of 38,033 hospital beds of which 7,379 beds were in rural areas. Although official GOP data claim that there were only 10,000 physicians in Pakistan in 1975, other data suggest that there were probably about 15,000.<sup>13</sup> Over one-third of the posts for physicians in the public health service (presumably at rural hospitals) and all in the rural areas were vacant, however, which suggests that there continues to be a severe shortage of physicians in rural Pakistan.

The GOP also reported in 1975 that there was only one nurse for each 23,300 people and one Lady Health Visitor for each 70,000 population. Thus, the RHC's and BHU dispensaries and MCH centers continue to be staffed, when staffed at all, with nurses and paramedicals whose morale is often low due to poor management and administrative problems. Moreover, almost all of these health outlets are poorly supplied with medicines and supplies. Finally, despite elaborate charts and tables of organizations, health consultants have repeatedly confirmed that these

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<sup>11</sup> Health Data Publication, *op. cit.*, p. 70.

<sup>12</sup> See Health Statistics, *op. cit.*, p. 71.

<sup>13</sup> DAP, *op. cit.*, p. 7, health sector; see also Annual Plan, *op. cit.*, p. 1.

"outlets" have not been organized properly so as to insure adequate supervision and support by western-trained public health physicians. It is of no surprise, then, that the rural Pakistanis continue to rely on the *hakims* for medical care.

### Government Health Policies and Plans

Despite the almost overwhelming lack of western-style medical care for rural Pakistanis, the GOP, especially over the past several years, even prior to Bangladesh's independence, has been concerned with plans and schemes to correct this gross deficiency. As early as 1965 a scheme for constructing health centers both in West and East Pakistan was begun. At that time seventy-six Rural Health Centers were constructed in West Pakistan and thirty-one in East Pakistan.<sup>14</sup> When the Bhutto administration assumed office in December 1971, after the Bangladesh disaster, one of the first programs adopted was the so-called "People's Health Scheme," which called for substantially increased expenditures for health.<sup>15</sup> According to this program the increased expenditures were to bring new health care to the rural Pakistanis in such areas as clean water, environmental sanitation, health and nutrition education, maternal and child health, and preventive medicine. The conduit for the direct medical care was to be the new Basic Health Units and the supervisory Rural Health Centers, the construction of which had faltered in the latter sixties. These new Basic Health Units were to be constructed throughout rural Pakistan and were to be staffed by a health team of well-trained auxiliaries. This implied, of course, an expanded training program for health auxiliaries.

But the new People's Health Scheme foundered on several obstacles over the following years. First, the staff of the GOP Ministry of Health was severely reduced by the defection of the Bangladesh personnel who departed for service in the east. Second, the remaining personnel concentrated their efforts on the adoption of a new drug law (Generic Drug Law) with which to provide cheaper pharmaceuticals for the Pakistanis. Third, the Pakistan Medical Association criticized the People's Health Scheme for offering inadequate protection and incentives to Pakistani physicians whose cooperation, of course, was indispensable. Finally, the scheme was widely criticized throughout Pakistan as one which, in fact, neglected the rural population in favor of physician training, hospital construction and sophisticated research. Then, in August 1973, the new Pakistan constitution was adopted which placed the primary burden for health care on the provincial governments rather than the national government. Although this had little practical effect on public health administration, it did appear to further inhibit the People's Health Scheme which, in any event, was only implemented on a very limited, ad hoc basis, at least through 1975. In conjunction with the new five-year plan (1975-80) the GOP Federal Planning Commission in 1973 and 1974 undertook both to upgrade and delineate the requirements for finally implementing a much revised People's Health Scheme, taking care that it would fit into overall Pakistan economic development and would respond to the various criticisms leveled at the initial People's Health Scheme. The new health policy drafted to be incorporated into the five-year plan for the first time focused GOP resources on the provision of health services for rural Pakistanis. The basic objective of the Ministry of Health long-term plan is to achieve a balance between rural and urban areas in basic health coverage. Thus, it is hoped that by constructing new RHC's and BHU's and staffing them with a health team of auxiliary health workers under an

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<sup>14</sup> Health Data Publications, *op. cit.*, p. 54.

<sup>15</sup> DAP, *op. cit.*, p. 3, health sector, and previous discussion.

area physician's supervision, to extend coverage from the present 15% to 50% of the rural populations by 1980, and by 1990-1995 to embrace the whole of Pakistan's rural population.<sup>16</sup>

In drafting this new health program, the government has been able to take advantage of several projects undertaken during the past few years. One has been a joint GOP-WHO Country Health Planning Exercise which developed the guidelines for the new government health policies. Still another has been the Northern Areas Health Scheme which trained and employed Health Guards (paramedical) to diagnose simple ailments and provide standard medicines in treating these diseases. The government has attempted to respond to the critique of the physicians and provincial officials alike.

The new GOP health plan which has emerged focused Pakistani resources in increasing amounts on preventive medicine, environmental sanitation, health education and maternal and child health. The media for achieving this improved health, as we noted above, remains the Rural Health Center and its sub-unit, the Basic Health Unit, which are to be staffed with sufficient numbers of physicians, nurses and paramedical personnel.

Specifically, the new program provides for constructing Basic Health Units at the rate of about 700 per year and to complete construction in about seven years (1975 through 1981). The BHU/population ratio would then be one BHU to 10,000 rural Pakistanis. This schedule would provide about 3,250 BHU's for general rural areas and 1,650 for sparsely populated rural areas.<sup>17</sup> Each BHU would be staffed by auxiliary paramedical personnel. This new health team would include a female auxiliary for midwifery and family planning, an auxiliary for care and control of communicable diseases, and a third for general curative medical care and administering the BHU. This would be a minimal health team.

Other features of this new plan include: (1) improvement, utilization and integration of existing government dispensaries, both urban and rural, into the new BHU system; (2) increasing available medicines for existing hospitals; (3) increased funds for medicine and equipment for *tehsil* and district hospitals; (4) substantially expanded medical school facilities, together with teaching hospitals; (5) new paramedical training facilities for paramedicals such as health guards; and, (6) a scheme to make the services of physicians in rural areas much more remunerative so as to encourage them to pursue the practice of medicine at the new RHC's also to be constructed under the health plan, where they would have supervisory functions over several (four or five) BHU health teams (above).

Under the long-term objectives of this plan all the preventive and curative services are to emanate from the BHU's with the same staff having responsibility for the total health conditions in their area of jurisdiction. It is anticipated that all services connected with the health of a community, including the programs for family planning, malaria eradication, smallpox and tuberculosis control, will be provided by the same health units in an "integrated" system. Along with this integrated system at the local level, the *tehsil* and district hospitals are expected to be substantially improved so as to handle those cases which are too serious for the local BHU's. The plan also envisages creating national institutes in twelve major fields, including nutritional disorders, gastrointestinal diseases, tuberculosis, coronary heart disease, and cancer, as well as expanding the public health laboratory system.<sup>18</sup> The GOP planners hope, through this integrated system, to cover each entire province with curative and preventive health ser-

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<sup>16</sup> See the Annual Plan, *op. cit.*, p. 7.

<sup>17</sup> See Dr. Siraj-ul-Haq Mahmud and Prof. N.R.E. Fendall, Primary Health Care in Rural Areas of Pakistan. Islamabad: Government Planning Commission, 1975, pp. 8-9; we have rounded these figures off to comply with a seven-year program.

<sup>18</sup> See Research Programme on National Health Problems, 1976-1980. Karachi: Pakistan Medical Research Council, 1975.

vices. Included in this system will be provision for health education, environmental sanitation, potable water, adequate disposal of sewage and wastes, better nutrition and a school health program.<sup>19</sup>

Finally, even before this new health plan can be launched, the GOP in 1974 decided to launch a new malaria control program.<sup>20</sup> This new malaria control program may cost as much as \$100 million over the next five years (the life of the next five-year plan). As suggested in Chapter Two, malaria is one of the major diseases afflicting the Pakistanis, especially rural Pakistanis. Moreover, in recent years it has revived or recovered from earlier malaria control efforts and is threatening to assume catastrophic increases in new victims. In fact, the Government Planning Commission anticipates the number of cases increasing from 2.4 million in 1974 to 12.0 million in 1975.<sup>21</sup> A revived campaign against malaria, of course, fits in very well with the new health program which focuses on preventive care as well as curative health care.

#### Problems, Conditions and Difficulties Associated with the Pakistan Health Sector

Despite an almost bewildering array of socioeconomic and health problems, the GOP has demonstrated a commendable grasp of the deplorable state of its health environment by the unveiling of its new health programs, the most innovative and objective since independence. For the first time the government planners appear to have recognized several elements in devising their health plan: (1) that good health for Pakistani citizens, especially the abundant rural poor, is a very important factor in promoting increased productivity and therefore, a significant element in boosting the GDP/GNP; (2) in order to make any significant impact in improving the national health of Pakistan, a substantial expansion of health services for the rural Pakistanis must be undertaken; (3) that some kind of treatment center must be available and accessible to the rural Pakistanis, hence the Basic Health Unit programs; (4) that these BHU's must be staffed with western trained health teams to provide adequate medical care and that an increased supply of western trained physicians and nurses must be forthcoming and inducements must be proffered to bring these physicians and nurses to the countryside to practice (a similar situation exists for paramedical personnel); and, finally, (5) the GOP has apparently come to believe that if the above measures are instituted, a large segment of the rural population can be convinced to abandon the traditional *hakims*, at least those not accredited with paramedical training, and in lieu thereof to accept western oriented medical care.

The government faces imposing obstacles toward fulfilling the ambitious health plan set forth above, however. Initially, two fundamental attitudes of very long standing will have to be reversed: (1) the tradition of government parsimoniousness with health budgets and (2) faith by rural Pakistanis in the *hakims* and distrust of western medicine must be altered. Whereas the first attitude may be dispensed with in a radical fashion if the government has, in fact, altered its attitude toward health care as is now indicated, the second can only be eliminated over a relatively long period of time.

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<sup>19</sup> See Country Health Programs, *op. cit.*, p. 25, and Annual Plan, *op. cit.*, pp. 1-3.

<sup>20</sup> DAP, *op. cit.*, p. 5, Health Sector.

<sup>21</sup> *Ibid.*, p. 2.

The GOP, of course, is confronted with other obstacles of an immediate but practical nature. One is the increased training for physicians and paramedical personnel. Although several new medical schools have opened recently, with an entering class of over 3,800 per year, western observers suspect that they may be quite substandard in instruction and lab facilities, libraries, etc. Moreover, the government has not yet made known its plans for convincing new physicians to work in the rural areas. For that matter, it has not completely succeeded in even retaining Pakistani physicians in Pakistan instead of losing them to emigration.<sup>22</sup>

Other problems are also evident. There is inadequate production of drugs and medicines, for example, as well as convalescent equipment. Nor is there adequate foreign exchange to purchase equipment abroad.

There are also abundant administrative and policy problems as were recorded above. The relationship between the national and provincial health administrations is not clear, with the latter theoretically independent but heavily dependent upon the national administration for funding, technical assistance and guidance. Then, too, within the national Ministry of Health there are many administrative problems over such items as job descriptions. Staff positions are often unfulfilled which leads to too much overwork on the part of the existing staff.

These and the myriad other problems, i.e., environmental sanitation, funding, health manpower training, overpopulation, malnutrition, referenced previously, will be reviewed in detail below. Individual chapters have been prepared in an effort to analyze available data on the conditions influencing the GOP's health programs.

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<sup>22</sup> See Annual Plan, *op. cit.*, p. 2; a ban was imposed on the emigration of physicians in 1973. They are not permitted to go abroad for service except on a government-to-government basis.

Table 7: HEALTH INSTALLATION BY URBAN AND RURAL AREAS

Facility	Pakistan		Urban		Rural	
	Number	Number	%	Number	%	
Hospitals	548	413	75.36	135	24.64	
Dispensaries	3,086	989	32.05	2,097	67.95	
Maternity child health centers	715	399	55.80	316	44.20	
Rural health centers	137	1	0.72	136	99.27	
Sub-centers of rural health clinics	369	-	Nil	369	100.00	
Tuberculosis clinics	92	87	94.57	5	5.43	
<b>Total installations</b>	<b>4,947</b>	<b>1,889</b>	<b>38.19</b>	<b>3,058</b>	<b>61.81</b>	
Hospital beds	38,033	30,553	80.33	7,480	19.67	

Source: Federal Health Ministry and Provincial Health Department data.

Table 8: PHYSICAL TARGETS FOR 1975-1976

Item	Annual Targets for 1975 - 1976					
	Punjab	Sind	N.W.F.P.	Baluchistan	FATA	Total
Doctors	400	550	144	86	--	1,180
Nurses	300	116	35	34	--	485
Lady Health Visitors	130	45	36	17	--	228
Technicians	--	160	--	16	--	176
Midwives	--	200	69	--	--	269
Auxiliaries (Medical Assistants)	1,000	--	--	--	--	1,000
Dispensers	N.A.	N.A.	190	80	60	330
Sanitarians	100	--	--	--	--	100
Dais	N.A.	N.A.	57	--	--	57
Hospital Beds	961	1,500	--	--	58	2,519
Rural Health Centers	5	30	24	2	2	63
Basic Health Units	--	--	96	10	8	114
Dispensaries/MCH Centers	--	100	72	6	57	235
T.B. Centers	--	4	--	3	--	7
T.B. Beds	108	--	--	--	50	158
Training Schools for Auxiliaries	--	1	2	1	--	4

Table 9: PHYSICAL ACHIEVEMENTS/TARGETS IN THE HEALTH SECTOR

Category	1973-74	1974-75	1975-76
Doctors	745	1,560*	1,180
Nurses	414	732*	485
Lady Health Visitors	--	214	228
Technicians	--	154	176
Midwives	115	248	269
Auxiliaries (Medical Assistants)	--	--	1,000
Dispensers	426	370	350
Sanitarians	96	100	100
Hospital Beds	515	721	2,519
Rural Health Centers	12	29	63
Basic Health Units	--	16	114
Dispensaries/MCH Centers	--	72	235
T.B. Centers	5	4	7
T.B. Beds	--	24	158
Training Schools for Auxiliaries	--	--	4

\* The increase in the production in 1974-75 compared to targeted figures for 1975-76 is due to graduation of two different classes.

## CHAPTER FOUR

### HEALTH MANPOWER RESOURCES

#### Background

In the previous chapters, the severe shortages of Pakistani health manpower from physicians through health auxiliaries was noted. In this chapter we shall endeavor to delineate more precisely the state of Pakistan's health manpower resources and the future requirements attendant upon creating a viable Pakistan health program. Such a delineation, it should be noted, must be limited, however, by the paucity of available Pakistan health data.

Despite the current admittedly severe shortage of health manpower in Pakistan, even a cursory review of the evolution of that country's health manpower resources since 1960 reveals some progress toward better health care. The following health manpower status prevailed in 1960.

#### Physicians

In both East and West Pakistan in 1960 there were 10,587 physicians registered with the Ministry of Health. Of this number, 4,782 held Bachelor of Medicine or Bachelor of Surgery degrees, while 5,805 held Licentiate's indicating four years of medical training. The number of physicians in private practice in 1960 was 3,187 in West Pakistan and 4,372 in East Pakistan.<sup>1</sup> Even at this time virtually all of these were practicing in urban areas. We have no data on the number of physicians in the public health service in 1960, but the number is believed to have been very small.

#### Nurses

In 1960 there were only 1,657 registered nurses with diplomas. Of this number, 1,379 were in West Pakistan. It was reported at that time that most of these nurses were in the government public health service. Nevertheless, the shortage was very acute, with the result that many of the nursing positions in the hospitals remained vacant.

#### Dentists

In 1960 there were reported to be only 141 graduate dentists in West Pakistan. At the same time, only five were reported practicing in East Pakistan, in Dacca. (See also Chapter Nine).

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<sup>1</sup> Health Data Publications, op. cit., p. 50.

### Midwives

There were 816 midwives with certificates or diplomas registered with the Pakistani government in 1960. Unlike physicians, most of these midwives were not in private practice, but operated from hospitals and MCH centers. The ratio of midwives, including assistant midwives, to the population was one to 42,000 in West Pakistan and one to 176,000 in East Pakistan.

### Assistant Midwives

In 1960 there were 454 assistant midwives registered with the Pakistani government. These midwives had not earned a diploma and like the registered midwives, worked out of hospitals and MCH centers. Nonetheless, it is believed that then, as now, most Pakistan births occurred unattended by any western trained personnel.

### Auxiliary Personnel

Unfortunately, there are no data available on auxiliary health personnel in Pakistan during the decades of the fifties and sixties. The only exception is a reported 600 Pakistan veterinarians in 1955.

## Current Health Manpower Status (1970-1975)

### Physicians

As reported previously, in 1972 it was estimated that there were then about 14,000 physicians in Pakistan. Our data does not delineate the nature of their degrees, degree or licentiates. By 1975 it was further estimated that the number of Pakistan physicians had increased at least to 15,000 (in 1960 there were 10,587 registered physicians).<sup>2</sup>

Financial remuneration in Pakistan, even though practicing in urban areas, is low relative to other countries. The result has been a significant loss of medical personnel to the United Kingdom, the United States, Libya, Iraq and other Arab countries. Thus, the encouraging increase in medical school graduates over the past several years has been negated to some extent.

### Nurses

The Moslem tradition of secluding women has provided another severe restraint on introducing women into the health profession. It has worked especially against an increase in nurses and the all-important lady health visitors. Thus, by 1970, the number of nurses had

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<sup>2</sup> See table at end of chapter provided by Ministry of Health and Health Statistics, *op. cit.*, p. 77, table 64. These data, both presumably from the Ministry of Health, present conflicting statistics on the number of physicians. The health data publication lists only 10,000 physicians in 1974, the same number as in 1960. The USAID table lists 16,485 registered physicians in 1973. Even given secession and emigration, we must assume a 5,000 increase in physicians in fifteen years.

increased to about 4,000, most of whom, we must assume, were in West Pakistan. By 1972, the number of nurses in Pakistan had increased to about 5,500 (in 1960 only 1,657 nurses were reported in Pakistan).<sup>3</sup>

#### Dentists

By 1974 the number of dental surgeons had increased to 700 (in 1960 there were only 141 dentists).<sup>4</sup>

#### Midwives

In 1972 the number of registered midwives with certification or diplomas had only increased very slightly, from 816 in 1960 to 887 (according to other published government data, however, the number of midwives had increased to 2,700 in 1974 - see table at end of chapter).<sup>5</sup>

#### Nurse Midwives

There were no data available for 1970 on Assistant Midwives, of which there were 454 in 1960. In lieu thereof, in 1970 there were 2,642 registered nurse midwives in Pakistan.

#### Lady Health Visitors

In 1971 there were 1,322 Lady Health Visitors in Pakistan.<sup>6</sup> Until recently, i.e., during the sixties, between 75 and 100 girls were trained each year as health visitors. These girls provide a variety of nursing services both in rural and urban areas.

#### Lady Family Planning Visitors

In 1970 there were about 500 Lady Family Planning Visitors. These women devote their efforts toward the practical aspects of family planning such as demonstration of various types of contraceptive usage including IUD insertions.

#### Family Planning Officers

In 1970 there were approximately 600 family planning officers, principally in West Pakistan at that time. These family planning officers not only develop family planning programs on the local level, but supervise family planning activities in their jurisdictions including use of contraceptives and IUD insertions.

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<sup>3</sup> Health Statistics, op. cit., p. 77 lists 3,000 nurses in 1974, while the USAID data lists 5,504 registered nurses.

<sup>4</sup> Ibid., p. 77 provides figures of 700 dental surgeons.

<sup>5</sup> Ibid., p. 77.

<sup>6</sup> Ibid., p. 77 this government report listed 1,000 health visitors in 1974.

### Other Categories of Health Workers

There were also reported to be 201 Medical Technologists in 1973, 117 Physiotherapists in 1973; 7,026 Dispensers in 1972; 1,418 Sanitary Inspectors in 1973; and, 636 Malaria Inspectors in 1973. In 1972 there were 752 qualified pharmacy graduates in Pakistan.

### Health Manpower Training Programs and Facilities

Since the defection of Bangladesh in 1971 the Pakistani government has taken cognizance of the poor quality of health care in the rural areas of Pakistan. In its efforts to repair these shortcomings, the government has launched several programs designed to provide adequate health care to at least 50% of rural Pakistanis by 1981 (in 1974 it was estimated that only 15% of rural Pakistanis received adequate health care).<sup>7</sup> One of these programs is a commitment to an extensive training program for medical auxiliaries. Under this new training program (which we are not certain has actually been launched) three kinds of auxiliary or paramedical personnel will be trained, in addition to those already provided for. These will include:<sup>8</sup>

- Maternal and Child Health (MCH) auxiliaries
- Communicable disease control (preventive) auxiliaries
- General medical auxiliaries.

A training period of two years was programmed for these auxiliary personnel. The entire program was coordinated with the physical plans of the Ministry of Health, i.e., the construction of rural health centers and basic health units (RHC and BHU). The staffing pattern for these health facilities would require approximately the following numbers of auxiliary personnel:

- MCH auxiliaries: 17,616
- Communicable disease  
and general medicine 14,220
- Total new personnel 31,836

Other programs are either planned or underway to augment the critical shortage of physicians and nurses in the rural areas. One of these, as noted above, is the basic health worker,<sup>9</sup> known as the "Health Guard." The period of training for the Health Guard was to be limited to three months. His focus would be on preventive medicine, but he would also have the ability to treat relatively simple ailments and diseases. The Health Guards have already been active in the northern provinces but an analysis of their work is not yet available.

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<sup>7</sup> A. McPherson and John W. LeSar, Health Manpower Development in Pakistan. Honolulu: University of Hawaii, 1975, p. 1.

<sup>8</sup> Ibid., pp. 2-4.

<sup>9</sup> Ibid., p. 2.

The GOP Ministry of Health also developed a program to train tutors for the massive health training programs outlined above. These tutors, in turn, would be expected to help develop curricula for the training programs for the proposed approximately 32,000 paramedical personnel as well as to teach many of the courses involved.

The core of any health manpower training program, of course, is the capacity of a country to train physicians and nurses. The dire shortage of physicians and nurses in the rural areas belie the capacity for this training in Pakistan which, as early as 1961, had six medical schools in West Pakistan and three in East Pakistan.<sup>10</sup> Since 1972, the government reports that seven new medical colleges have been commissioned, presumably providing a total of thirteen medical schools in Pakistan. Moreover, the capacity of existing schools has been increased since the early sixties. In 1960, there were 586 graduates from the six medical schools in West Pakistan. In 1973 it was reported there were 800 new physician graduates, both M.D.'s and Licentiates.<sup>11</sup> The GOP also reports that the number of entrants to Pakistan medical schools has increased from 976 to 3,885 per year in 1975.<sup>12</sup> In any event, the government estimates that the current output of physicians in 1975 is almost 1,200 annually. Unfortunately, Pakistan has not been able to utilize this total increase in the number of physicians since many have emigrated to the U.S., the British Commonwealth countries, and the Arab States.<sup>13</sup>

In the early sixties the West Pakistan medical schools were located in Lahore (King Edward), Karachi (Dow), Lahore (Fatima Jinnah), Multan (Nishtar), Hyderabad (Liaquat), and Peshawar (Khyber). These university medical schools offered courses leading to the degree of M.B.B.S. Two years of premedical training were required for admission to the medical college. The course was five years.<sup>14</sup> Our current data do not reveal any changes in the curriculum along with the expansion of the medical schools' capacity and the new medical schools.

In the early sixties there were also facilities in both East and West Pakistan for training of Licentiates. In West Pakistan these were at Quetta and Bahawalpur. At that time each of these schools could admit a maximum of thirty students for a four-year course. When they had successfully completed this course they were awarded the L.M.F. diploma (Licentiate of Medical Faculty).

The Licentiate graduates were and are regarded as medical assistants or second class physicians in Pakistan. They suffer this condition due to the allegedly inferior training they receive. Both the Licentiates and M.B.B.S. candidates are required to have ten years of primary and secondary education, but the latter are also required to have two years of premedical university training. We cannot verify the quality of training for the Licentiates, but it is alleged to be inferior due to lack of staff and clinical facilities at the Licentiate institutions.

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<sup>10</sup> See Health Data Publications, op. cit., pp. 52-54.

<sup>11</sup> See unpublished tables prepared from government data for the USAID.

<sup>12</sup> Annual Plan, op. cit., p. 2.

<sup>13</sup> In 1973 a ban was imposed on physician emigration, however.

<sup>14</sup> Health Data Publications, op. cit., p. 52.

The only dental college in Pakistan in the early sixties was the de Montmorency College of Dentistry at Lahore. This college offered a four-year course and awarded a degree of Bachelor of Dental Surgery. Admissions to this college numbered only thirty annually in the early sixties. By 1975 the government estimated that sixty dentists were graduating annually.<sup>15</sup>

Despite the reluctance of Moslem girls to enter nursing, there were six nursing training facilities in West Pakistan and two in East Pakistan in the early sixties. These training centers were established in hospitals in Lahore, Karachi, Hyderabad, Multan, Peshawar and Bahawalpur in West Pakistan, and Dacca and Chittagong in East Pakistan. These training facilities or schools of nursing were never fully utilized during the sixties due to the low repute in which nurses were held, the Moslem custom of secluding women and the lack of suitable living quarters for these Pakistani girls. Thus, by 1970 there were only about 4,000 nurses in both East and West Pakistan.

Since 1960, however, the government has gradually increased the number of nursing schools to twenty-eight, of which twenty-five are for women and three for men. The annual entering classes in these twenty-eight schools total about 650. Nurses graduating now number about 500.<sup>16</sup>

As indicated above, during the past decade there were also facilities in Pakistan to train auxiliary health or paramedical personnel, including midwives, sanitary inspectors and health visitors. Thus, courses in midwifery were given in Karachi, Lahore, Peshawar, Hyderabad, and Dacca during the sixties. These courses covered a two-year period and the graduates, of which there were about 500 per year, were awarded diplomas. Sanitary inspectors were trained at the Institute of Hygiene and Preventive Medicine at Lahore, the Sanitary School at Karachi, and the Institute of Public Health in Dacca. During the sixties these three schools awarded about 100 diplomas each year.

About 100 girls were also trained as health visitors in training centers in Karachi, Lahore, Peshawar, and Dacca during the sixties. It is estimated that about 200 health visitors are now graduated annually.

Finally, recipients of the M.B.B.S. degree who had at least one year's experience could attend the Institute of Hygiene and Preventive Medicine at Lahore. After completing an eleven-month course these students were awarded a Diploma of Public Health. A maximum of twenty students graduated from this course each year during the last decade.

#### Prospects for Health Manpower in Pakistan: Problems and Considerations

It is clear enough from the foregoing that Pakistan suffers severe qualitative and quantitative deficiencies in health manpower. This is especially true regarding the latter and has resulted in extremely limited numbers of western trained health manpower to serve the majority of Pakistan's population living in rural Pakistan. With the new RHC-BHU program at last under-

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<sup>15</sup> Annual Plan, *op. cit.*, p. 2.

<sup>16</sup> *Ibid.*, p. 2.

way, with plans to construct 700 BHU's per year, about 3,500 auxiliary health workers (five workers per unit, not counting extras at the RHC) will be required annually. As noted above, the GOP has taken some measures to provide this new training. Interestingly, however, in 1975 the ratio of Pakistan physicians to auxiliary workers was still one-to-one, whereas it should have been one-to-five.

In any event, a number of problems and considerations remain to torment Pakistan's health manpower. These include the nature of the training both for Pakistani physicians and auxiliary health personnel and its relevance to Pakistan's short- and long-term health requirements. Also included are problems of incentives and remunerations which might curtail the desire of Pakistan's physicians and nurses to emigrate. Problems involving the paramedical personnel adjusting to alien regions and villages, and their acceptance by the local population, are also apparent. An effort to examine these and associated problems follows.

Several key questions concerning training of Pakistan health personnel have been raised by consultants from various agencies who have investigated Pakistan's health system over the past two years. With respect to Pakistan physicians, given the acute shortages of physicians in rural areas, consultants have questioned whether it is necessary that these physicians be trained to western professional standards. Thus, they might well opt for the Licentiates or even a training program for physicians reduced by another year. This option may be realistic and very empirical given Pakistan's limited professional and financial resources. Under a program of reduced time frame for Pakistani physicians, the number of graduates might be doubled within a few years. This might also be made acceptable to the student candidates if they could be promised additional post-graduate training at government expense after completing a stint of rural service.

In connection with training auxiliary and/or paramedical personnel, apparently there is disagreement among the Ministry of Health and Social Welfare, the provincial health departments, and the Pakistan Medical Association over the curricula. Disagreements have occurred over the number of years of formal schooling required for the "medical auxiliary" and whether or not a standard "core" curriculum should be used for the whole country.<sup>17</sup> Consultants examining the "auxiliary" curriculum problem for the USAID believe it should be oriented toward environmental and preventive medicine, or at least, environmental and preventive medicine should be given equal status with curative services so that they all proceed in a parallel fashion. Traditionally, medical training of any level in Pakistan has been oriented toward curative services only.

The consultants also believed, by way of example, that the current activities of the innovative health guards is not sufficiently oriented toward preventive and environmental medicine. They have observed that whereas they are given parallel training in preventive and environmental medicine, it is much easier for them to dispense medicines than to undertake the harder preventive measures. Thus, they rapidly become curative agents once again.

But there are also problems and issues of a more abstract nature which impede the development of Pakistani health manpower. With respect to paramedical personnel, it is very evident that many more female personnel are required to help service the health units and centers and to serve as Lady Health Visitors and in the family planning program. Nevertheless, the Moslems

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<sup>17</sup> McPherson and LeSar, op. cit., p. 4.

frown upon their girls entering this service. While this taboo is breaking down in urban areas, it is still a force in rural Pakistan. Moreover, urban girls do not want to serve the rural areas due to unacceptable living conditions.

Other areas affecting the availability of health personnel, both physicians and auxiliary workers, involve how the health personnel regard themselves and how they are accepted by the rural community to which they are sent. The auxiliary personnel, in particular, require sufficient training to make medical decisions and treat patients in an area where a western-trained physician is not available. He must be presented to this community as a competent health or medical assistant and be accepted as such by the community. The rural communities must not be allowed to feel they have a second class health system.

The Pakistan health system also faces severe problems of adequate support systems for the rural health programs. These support systems have to provide the auxiliary health professional with physician leadership, regular supplies of medicines and sufficient consultative services or backup from the hospitals in urban areas and the Ministry of Health through the provincial health departments. Otherwise, the "medical assistants" will be reluctant to serve in the rural areas without a "receptive framework."

Finally, there is the grave problem of the lack of an organized health system in which physicians and auxiliary medical assistants can take pride. The curriculum and other educational disputes between the Ministry of Health and the provinces illustrate the lack of an acceptable program as well as the lack of federal leadership. Strenuous efforts should be made during this current plan, 1975-1980, to overcome these several differences in health policies between federal and provincial health agencies. This may necessitate a reduction of provincial autonomy in the long term.

In any event, the decision of the government to introduce auxiliary and/or paramedical personnel on a relatively large scale as a means of bringing some health care to rural areas appears to have the concurrence of the provinces. Consultants who have studied Pakistan's health problems also believe it to be one of the few viable alternatives to leaving rural health care to the *hakims*. One group of consultants has offered some suggestions as to how the use of auxiliary workers might best be facilitated.<sup>18</sup> In summary, the most pertinent of these include:

- Obtain the concurrence and cooperation of the Pakistan Medical Association and use it to help formulate policy for the auxiliaries;<sup>19</sup>
- Make the auxiliary service as attractive as possible by affording auxiliary workers adequate responsibility and appropriate salary for that responsibility;
- Keep entrance requirements modest enough, however, to attract rural Pakistanis into the service;
- Deploy some auxiliaries into urban hospital outpatient clinics for training and to avoid perception of a "second class" health system;

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<sup>18</sup> Ibid., pp. 9-11.

<sup>19</sup> Ibid., p. 10.

- A sound economic and logistical support system must be in place before large-scale training of auxiliaries takes place;
- Use of modern curriculum adapted to rural requirements and keep early classes of auxiliary trainees modest in size to avoid major errors;
- Develop full-time, competent teachers with rural health experience for use in auxiliary training programs;
- Provide an adequate training budget for continuing education of auxiliary grades;
- These suggestions are applicable both for provincial and federal training programs which should be coordinated to avoid inconsistencies.

Table 10: HEALTH MANPOWER DATA

Type of Health Worker	Published GOP Health Data*	GOP Health Data Provided USAID Consultants	Health Data used in this Report	New Entrants into Health Care	Year
Physicians	10,000	--	--	1,200**	1974
	--	16,485	15,000	--	1973
Dental Surgeons	700	--	700	60**	1974
	--	539	--	--	1973
Nurses	3,000	--	--	500**	1974
	--	5,504	5,500	--	1972
Health Visitors	1,000	--	--	200**	1974
	--	1,322	1,322	--	1971
Midwives	2,700	--	--	--	1974
	--	887	887	--	1972
Nurse Midwives	--	--	--	--	----
	--	2,642	2,642	--	1970
Physiotherapists	150	--	--	50**	1974
	--	117	117	--	1973
Pharmacists	500	--	--	--	1974
	--	752	752	--	1972
Medical Technologists	100	--	--	--	1974
	--	201	201	--	1973
Dispensers	8,000	--	--	--	1974
	--	7,026	7,026	--	1972
Sanitary Inspectors	1,450	--	--	--	1974
	--	1,418	1,418	--	1973

\* Health Statistics, op. cit., p. 77, Table 64.

\*\* Derived from Annual Report, op. cit., p. 2.

Table 11: STATEMENT SHOWING REGISTERED NUMBER OF DOCTORS IN PAKISTAN

Year	Number	Progressive Total
1947	-	-
1948	1,360	1,360
1949	552	1,912
1950	386	2,298
1951	323	2,621
1952	239	2,860
1953	367	3,227
1954	371	3,598
1955	325	3,923
1956	347	4,270
1957	500	4,770
1958	617	5,387
1959	581	5,968
1960	517	6,485
1961	770	7,255
1962	639	7,894
1963	725	8,619
1964	799	9,418
1965	664	10,082
1966	763	10,845
1967	887	11,732
1968	637	12,369
1969	642	13,011
1970	1,098	14,109
1971	753	14,862
1972	927	15,789
1973	646	16,485
1974		
1975		

Number of Re-enrollments

Not included in the registered number of doctors

Year	Number	Progressive total
1966	326	326
1967	628	954
1968	236	1,190
1969	100	1,290
1970	109	1,399
1971	59	1,458
1972	42	1,500
1973	31	1,531
1974		
1975		

Source: Ministry of Health for the U.S. Agency for International Development.

CHAPTER FIVE  
POPULATION AND FAMILY PLANNING

Background: Statistical Data and the Context of Overpopulation

Basic Demographic Statistics

At the close of the decade of the sixties, Pakistan (East and West) had an estimated population of 127 million and, at that time, ranked fifth in the world. Although Pakistan population data is not completely reliable, the census data of 1961 permitted the government to produce some revealing statistics on Pakistan's population growth which, in the area that eventually became Pakistan, has been striking since the turn of the century.

In 1901 the population of the Muslim area of the sub-continent was thought to be approximately 45.5 million. By 1951, Pakistan having achieved nationhood in the intervening years, the population had increased to 93.8 million and in 1970, just prior to the defection of Bangladesh, it had reached something over 120 million. In 1972, after the independence of Bangladesh the population of (West) Pakistan was reduced to about 65 million, but by mid-1974 it had already climbed to about 70 million. Thus, the population of (West) Pakistan, it is believed, had about doubled since 1951.<sup>1</sup>

In the early sixties the age for women at marriage was about nineteen years, but the trend since that time has been toward marriage at a later age. The number of females of reproductive age (fifteen to forty-four) in 1965 was 20.4 million (both East and West). By 1975, due to the secession of Bangladesh, the number of females aged fifteen to forty-four stood at 14.3 million.<sup>2</sup> Approximately 85% of all Pakistani women are married.<sup>3</sup>

In 1961, 44.5% of the population was under fifteen years of age and 16.3% was forty-five years of age or over. In 1975, despite the substantial increase in population growth, the population fourteen years and under had reached only 44.9% of the total population.<sup>4</sup> The population forty-five and over was reduced to 13.5%. In 1961, about 87% of the population lived in rural areas (95% in East Pakistan). During the past decade, however, migration to urban centers has

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<sup>1</sup> See Hardee and Satterthwaite, op. cit., p. 1; see also Health Statistics, op. cit., p. 17, Table 19.

<sup>2</sup> Annual Plan, op. cit., p. 13.

<sup>3</sup> Hardee and Satterthwaite, op. cit., p. 1.

<sup>4</sup> See Health Statistics, op. cit., p. 18.

accelerated so that in the 1972 census, the rural population had slipped to 75% and in 1975 the government projected rural population as 71.16% and urban population at 28.94%.<sup>5</sup>

### Ethnic and Religious Background

Historic and geopolitical factors concerning Pakistan have been delineated in the appendices of this paper. Suffice it to note here that the Pakistanis derive from various tribes of central and western Asia but have been inundated by numerous invaders over the past 5,000 years including Dravidian, Aryans, Greeks, Persians, Afghans, Arabs, and Monghuls. The dominant racial type in Pakistan is Indo-Aryan, however.

In 1961, about 88% of the Pakistanis practiced the Muslim religion, while 11% were Hindus. The remainder were Christian and others. It should be noted, however, that in West Pakistan, 97% were Muslims while 80% practiced the Muslim religion in East Pakistan.<sup>6</sup>

### Literacy and Economic Levels

The literacy rate for both East and West Pakistan was reported to have been about 19% during the early sixties.<sup>7</sup> There were wide variations, however. Urban males in East Pakistan were reported to have a 55% literacy rate, while urban males in West Pakistan had only a 33% rate. Rural females in East Pakistan had about a 10% rate, while rural females in West Pakistan had only slightly over a 3% rate. Since the independence of Bangladesh, the literacy rate for Pakistan is not known precisely, but reportedly is still under 20%.<sup>8</sup>

Economic conditions, including industry, employment, per capita GNP, etc., have been reported in detail in the appendices. Briefly, however, in 1965 per capita GNP was about \$90 (rupees 432). By 1974, despite excessive population growth rate and other economic factors, per capita GNP had increased to \$129.00.

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<sup>5</sup> Ibid, p. 21, Table 21.

<sup>6</sup> Hardee and Satterthwaite, op. cit., p. 2.

<sup>7</sup> Ibid., p. 2.

<sup>8</sup> Health Statistics, op. cit., p. 45, Table 43, which showed a literacy rate of 19.4% in sample surveys of villages in the Punjab and Northern Areas; see also DAP, op. cit., pp. 1-3; Education Sector; educational investment and achievement in Pakistan is still very limited. Until the present time, GOP expenditures for formal education were less than 2.0% of the GNP. Although student enrollment increased threefold between 1961 and 1971, from 2.9 million to 6.6 million, this still only represented 22% and 27%, respectively, of the school age population (five to nineteen years).

### Population Growth Data

Given the frequent unreliability of GOP health data, it is not surprising that there is a divergence of the statistics on the Pakistan population growth rate. Thus, the government statistics on Pakistan's population growth rate are somewhat different from and lower than, those prepared by private consultants.<sup>9</sup> The GOP data maintain that the growth rate for the first three decades of the twentieth century was less than 1.0%, while during the fifties it averaged about 2.2%. By 1975 the government conceded that it had reached 3.0%.<sup>10</sup>

The PGE survey, on the other hand, assumed an average annual growth rate of 3.3% during the period 1962-1965. Other consultants have adopted population growth rates from 2.9% for the period 1970-1973, to 3.0% for the period 1970-1974. Still others have suggested that the growth rate is much in excess of 3.0%.<sup>11</sup>

One of the principal reasons for the increase in the population growth rate has been the rapid decrease in the death rate over the past several decades. During the twenties the crude death rate for Pakistan and India was 36/1,000 and 31/1,000 during the thirties. By the decade of the sixties the death rate had dropped to 16/1,000 and by 1975 is estimated to be 15.5/1,000.

### Fertility Trends

During the period 1962-65 when Pakistan was experiencing an average annual population growth rate of 3.3%, private analysts calculated that Pakistan's average crude birth rate was 52/1,000. The GOP, however, used the rate of 50/1,000 in drafting its third five-year plan, 1965-70. There are various estimates of the level of the crude birth rate between 1970 and 1975 but the government has adopted a figure of 45.5 per 1,000 population.<sup>12</sup>

If the mortality continues to decline, which may result from the very slowly improving health care in Pakistan, private analysts believe the population of Pakistan in 1985 may range anywhere from approximately 80 to 125 million.<sup>13</sup> Others, however, believe that it will be 95 million as a minimum and may surpass the 123 million mark by 1985. Even the most conservative estimate now available, which set the growth rate at 2.7%, concedes that Pakistan has increased its population by 50% in the past twelve years.

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<sup>9</sup> Hardee and Satterthwaite, *op. cit.*, p. 1; reference is made by the authors to the Population Growth Estimation Project (PGE) which presumably was conducted by a private consulting firm. Other private population consultants are referenced by these authors. Still others are cited by AID and other documents.

<sup>10</sup> Health Statistics, *op. cit.*, p. IV.

<sup>11</sup> See Country Program Analysis Paper (CPAP) for Pakistan (draft), USAID, 1973, p. 1, which used a 2.7% growth rate for 1971. See also General Background Paper on Pakistan, USAID, 1974, which upgraded the population growth rate for the period 1970-1974 to 3.5-4.2%. We would tend to agree with these latter figures but have used 3.0%, the official GOP figure, in this study.

<sup>12</sup> Health Statistics, *op. cit.*, p. IV.

<sup>13</sup> *Ibid.*, p. 17, Table 19, projects the population in 1980 at 81,450,000.

### Population Growth and the Labor Force

During the sixties it is believed that the labor force in Pakistan constituted only about 31% of the Pakistan population. This is regarded as a low figure, even for a developing country. It results from the very low rate of female employment, the high dependence ratio, and of course, the general economic performance of a developing nation. With respect to the dependency ratio, in particular, in 1961 it was estimated that 47% of the population was under fifteen years of age. The ratio has scarcely changed since it is also reported by the GOP that in 1975 44.9% of the population was fourteen years of age or younger.<sup>14</sup>

At the middle of the last decade the labor force included about 37.3 million persons (for both East and West Pakistan), with a total population of 115.7 million. We do not have data on the current level of the labor force for (West) Pakistan, but in keeping with the level of population growth for (West) Pakistan and the same ratio of labor force to population as in 1965, the current labor force should be approximately 22.4 million in a population of about 79 million. In any event, in the year 1965, out of the total labor force, 21.8% were without regular employment.<sup>15</sup>

As to projections, the Pakistan Central Planning Commission anticipated the size of the labor force in 1985 to be from 60 million to 74 million (for both East and West Pakistan). They assumed that at least 27 million new jobs would have to be created to take care of this huge increase in the labor force, but still leaving an unemployed rate of at least 5%. If these data are applied to Pakistan for 1985, it would seem that there would be a labor force of at least 31 million and the necessity of creating another 8.6 million jobs just to keep the unemployment rate from exceeding the 1965 level of almost 22%.

### The Pakistan Family Planning Program

#### Early Attempts at Family Planning

The concept and later, the implementation of family planning developed only slowly in Pakistan. After the creation of a new nation of Pakistan as a member of the British Commonwealth in 1947, a few dedicated wives of prominent Pakistani officials, along with other social workers, began to organize family planning activities and to disseminate family planning literature as part of the social work programs. The Pakistan Women's Voluntary Service and the All Pakistan Women's Association also sponsored family planning activities in those years immediately after independence.

Later in 1952, family planning services were informally organized in Karachi, Lahore, and Dacca and the following year a Family Planning Association of Pakistan, with eight branches in various Pakistani cities, was formally organized. In 1954 the Family Planning Association of Pakistan was affiliated with the International Planned Parenthood Federation.

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<sup>14</sup> Ibid., p. 18, Table 20.

<sup>15</sup> Hardee and Satterthwaite, op. cit., p. 2.

### Government Recognition of the Need for Family Planning Programs

The first comprehensive and integrated effort at family planning supported by the Pakistani government occurred in the process of drafting Pakistan's first five-year plan. Therein, the GOP planners recognized the increasing dangers to Pakistan's stability and economic development by the rapid population growth then underway in Pakistan. These planners, however, still seemed to underestimate the nature of this threat. For planning purposes they assumed the population growth rate to be only 1.4%, while as we now know, it had already reached 2.2%.<sup>16</sup> They agreed to provide Rs 500,000 in the plan for support of family planning by voluntary agencies in Pakistan.

During the remainder of the fifties, additional organizational success was achieved. In February 1958 the Family Planning Council and several government health agencies organized the National Family Planning Board, which was to direct and help organize family planning activities throughout Pakistan. As a result of this new effort, Provincial Family Planning Boards were organized in each province to approve projects and allocate funds. In 1959 conferences on the growing population problem were held in Pakistan and the assistance of the Population Council was obtained to undertake a general survey of Pakistani population problems.

As a result of this promotional activity of 1958 and 1959, the government planners incorporated an expanded program in both their second (1960-65) and third (1965-70) five-year plans. The government proposed to spend Rs. 50.5 million for family planning during the second plan. This funding was to be used to provide services to hospitals and dispensaries, creation of research and training units and establishment of the National Research Institute of Fertility Control. In 1964, for example, a National Family Planning Directorate was instituted to propose new policy for the family planning program, while similar directorates were established in the provinces. During the early sixties, moreover, about 1,000 physicians, 200 nurses, and 250 Lady Health Visitors were training in family planning techniques.<sup>17</sup>

Despite this increased effort and expenditures, more ground was lost to the population growth rate. It increased from 2.2% in the fifties to 3.3% between 1962-65. The Population Council report cited the following causes for the dismal showing of the program:<sup>18</sup>

- inadequate allocations for supplies
- poor distribution
- lack of field workers
- absence of new contraceptive technology, and
- overburdened health personnel.

Despite the failures of the second five-year plan, a still greater effort was scheduled for the third five-year plan (1965-70). Foreign assistance was solicited on a large scale from Sweden and the U.S., and several agencies were enlisted to promote this further effort. An Advisory

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<sup>16</sup> Ibid., p. 3; see also above data on population growth rate.

<sup>17</sup> Ibid., p. 3.

<sup>18</sup> Ibid., p. 4.

Coordinating Group, composed of Swedish and American experts, together with representatives of the Population Council and the Ministry of Health, was created to provide new approaches. The objectives of the Family Planning Program of the third five-year plan was, "to reduce the birth rates from fifty to forty per thousand by protecting 25% of the nation's approximately twenty million fertile couples by 1970."<sup>19</sup> Rs 284 million (US \$69 million) was programmed to achieve these objectives.

Despite the foreign assistance, an apparent sincere effort by the GOP, and increasing numbers of trained family planning personnel, the success of the program during the period 1965-70 was marginal. This period was one of political turmoil within Pakistan resulting first in martial law and then, after the close of this period, in the civil war and the defection of Bangladesh. The GOP was swept with discontent and reorganizations, all of which had unfortunate effects upon the family planning program.

The reorganizations were themselves impeding to the program. Initially, a Central Family Planning Council was created apparently to replace the National Family Planning Directorate of the second five-year plan. Then it was replaced by a Division of Family Planning within the Ministry of Health, Labor and Social Welfare. In 1968 the Division of Family Planning was upgraded within the governmental hierarchy and the Ministry within which it resided was changed to the Ministry of Health, Labor and Family Planning. These changes seem to have reflected the political infighting within the GOP which undermined the objectives of the program. In any event, observers seem to agree that with the resignation of President Ayub Khan in September 1969, the whole family planning program fell into eclipse.<sup>20</sup>

There were some limited accomplishments during the period (1965-70) nevertheless. The program was implemented on the provincial level through the Provincial Family Planning Boards and on the district level by the District Family Planning Boards. The personnel of a district board for example, consisted of the executive officer, a physician, a family planning officer, Lady Organizers, Lady Health Visitors, and Lady Family Planning Visitors, who actually distributed the contraceptives and literature. One cannot escape the impression that these boards received very little guidance from the Ministry, but had to depend upon their own initiatives. In any event, the Population Council claimed that a field staff comprising physicians, LHV's and LFPV's totaling 90,000 was assembled and by 1969 had reached approximately 80% of the Pakistani people employing mobile clinics and IUD camps where necessary.<sup>21</sup> This activity resulted in the GOP releasing some impressive statistics published by the Population Council, but which have been called into question recently, given the continued high population growth rate. According to the GOP, from July 1965 through June 1969 over 2,400,000 initial IUD insertions were made, with retention rates of as high as 63% over a twelve-month period. By the end of June 1969 about 479 million conventional contraceptives were sold. Between 1965 and 1969 there were over 770,000 sterilizations performed, both in East and West Pakistan.

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<sup>19</sup> *Ibid.*, p. 4.

<sup>20</sup> See DAP, *op. cit.*, p. 37.

<sup>21</sup> Hardee and Satterthwaite, *op. cit.*, p. 5; the LHV's and LFPV's were, in large part at least, "daises," the traditional midwives, and were employed as field motivators. The Boards also used (commissioned) shopkeepers to sell contraceptives. One source claims there were 15,000 "dais" and 30,000 shopkeepers (agents) in 1969.

It is very difficult to assess the success, if any, of the family planning activities during 1965-70. One innovation called the Continuous Motivation System (CMS) was introduced in the Siaklot District in December 1969. Its objective was to reduce the birth rate rapidly and dramatically in this district. The Pakistan authorities apparently regarded the CMS as a success since it became the basis for the fourth and fifth five-year plans. It is noteworthy to observe, nevertheless, that it is generally agreed the Pakistan population growth rate dropped from 3.3% annually in the period 1962-65, to the range of 3.0% between 1965-1970.

#### Current Policies and Objectives

In 1968 the UN and WHO completed a detailed evaluation of the Pakistan Family Planning Program the recommendations from which provided the basis for the program in the fourth five-year plan (1970-75). Although internal political problems, the Bangladesh rebellion, and war with India intervened to render much of the fourth five-year plan inoperable, the revisions in the program so recommended have been retained and are part of Pakistan's current planning process (for the fifth five-year plan, 1975-80). These revisions included:<sup>22</sup>

- a broadening of the contraceptive method offered to include oral contraception and greater emphasis on female sterilization as part of the "Continuous Motivation System" (see below), a plan designed to cover the entire fertile population of Pakistan;
- reduction of the crude birth rate from the current 45.5 per thousand to 35 per thousand during the fifth five-year plan so as to reduce the growth rate somewhat below the current 3.0% plus;
- gradual replacement of illiterate "dais" as the basic field worker by male and female literate teams located at each Union Council (unit of local government) with a population of 10,000. These teams would be responsible for listing the fertile couples in their area and educating them to accept family planning by whichever method proved feasible;
- training of family planning visitors was to be broadened to include more aspects of family health and nutrition; and
- the training, research and evaluation activities formerly carried out by several research units were incorporated into an organization called TREC (Training, Research, and Evaluation Center) so as to give coordinated direction to family planning research in Pakistan.

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<sup>22</sup> Ibid., pp. 8-9.

After the Bhutto government assumed power in Pakistan amidst the disasters in the east, clearly and very early this administration recognized the increasing dangers in overpopulation and reinvested the family planning program with new resources and energy. Building upon the UN and WHO recommendations of 1968, it adopted, for the entire program, the previous experimental "Continuous Motivation System."<sup>23</sup> The male-female high school educated family planning teams were expanded to cover (a claimed) 75% of the population with the remainder subject to mobile teams, midwives and clinics. More than 8,400 field workers were given training up to 1974 and deployed to their respective areas. The Bhutto administration also decided, "that conventional contraceptives were the most acceptable method of contraception in Pakistan."<sup>24</sup> The government thereupon decided on a radical subsidy system to make pills and condoms available through about 50,000 outlets at 2-1/2 cents per month.

Since the "Continuous Motivation System" now occupies the paramount position in the government's family planning scheme, a word about its organization is in order. The entire family planning program, as suggested above, is directed by the Pakistan Population Planning Council, whose chairman is the Minister of Health and Social Welfare, and whose members include the provincial Ministers of Health, the Secretary of Health and Social Welfare and representatives from the Ministry of Finance, Planning and Development and other government agencies. There is also a Provincial Population Planning Board in each province. Each district in the CMS also has a district Population Planning Officer who reports to the Provincial Board. A Senior population Planning Officer reports to the District Officer and the "Senior Officer" supervises three Population Planning Officers. Each Population Planning Officer, in turn, supervises six teams of Population Planning Workers. In areas with a low density (less than 300 per square mile) mobile CMS teams of a male field worker, a Lady Welfare Visitor and an assistant operate.

The objectives of the CMS are to cover the entire country as soon as possible and to reduce the rate of growth of the population from the current 3.0% plus to 1.5% by 1985. The directors of the CMS also have an intermediate goal of having at least 40% of all eligible couples practicing contraception by June 1975, which, if achieved, could reduce the birth rate to 40 per 1,000 soon thereafter.

The work of the teams, which is basic to the success of the program, consists of almost constant contact with the target population so as to gather statistics, encourage continued family planning, and provide supplies. The motivation work of each team is all important and is handled by the male member for targeted men and by the female member for targeted females. The fundamental objective is to achieve a no-birth record for each family each year. The significance and possible results of the CMS are discussed below.

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<sup>23</sup> DAF, op. cit., p. 37.

<sup>24</sup> Ibid., p. 37.

## Foreign Assistance

In its current attempts at family planning, as in the recent past since 1959, the government of Pakistan has received substantial foreign assistance. According to the Population Council this assistance amounted to \$32.1 million between 1959 and 1970.<sup>25</sup> Of this amount, the Population Council provided \$864,000, the Ford Foundation provided grants in the amount of \$3.8 million; the Swedish International Development Authority provided \$4,940,000 for the Family Planning Council; the Rockefeller Foundation granted \$200,000 jointly to Johns Hopkins University and the University of Punjab for family planning research; others include \$4,260,370 from the International Planned Parenthood Federation and \$653,000 from UNICEF in the form of vehicles and supplies. Both the Netherlands and the UK also provided substantial grants for family planning activities in Pakistan.

The U.S., of course, has also provided a significant part of that total of \$32.1 million for family planning up to 1970 and has continued to obligate funds since then. Through June 30, 1974, the USAID had obligated \$7,900,000 for a project entitled, "Population Planning."<sup>26</sup> Plans provided for an obligation for \$4,860,000 during FY 1975 for this project. In addition, through June 30, 1974, the USAID had obligated \$398,000 for another population planning project within "PIDE," the Pakistan Institute for Development Economics. This unit within PIDE is conducting independent research on determinants of population change and evaluating the effect on population growth of Pakistan's family planning policies. The USAID planned to obligate an additional \$140,000 for this PIDE project in FY 1975. As for Pakistan, the government Planning Commission had planned to allocate Rs 145,000,000 for implementation of the CMS in 1974-75, as well as for residual population planning programs.<sup>27</sup>

### Progress and the Future of the Family Planning Program

#### Evaluation

Some analysts of the Pakistan health environment purport to view progress in family planning optimistically and point to several positive measures taken within the past few years to support this optimism. They suggest initially that the government has finally come to recognize that urgent and dramatic steps are necessary to reduce Pakistan's population growth rate and have moved to implement this recognition. The Bhutto administration instituted the "Continuous Motivation System" and has made it an integral and important part of the planning process (fifth five-year plan).

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<sup>25</sup> Hardee and Satterthwaite, op. cit., p. 8.

<sup>26</sup> See unpublished DAP data provided by the USAID. In addition, the USAID also supported a "Family Planning" project in Pakistan between 1962 and 1973 for which unpublished data indicate \$6,499,000 was obligated.

<sup>27</sup> See Annual Plan, op. cit., p. 14

In more concrete terms, the government has adopted a policy of utilizing conventional contraceptives as the most acceptable method of contraception in Pakistan. Thus, it has obtained a commitment from the USAID and other donors for substantial funding to purchase the pill and condom in sufficient quantities. It has instituted a program of distributing the pill without medical or paramedical constraints. And it has undertaken to subsidize the distribution of the pill and condom through some 50,000 outlets at 2.5 cents per monthly supply.<sup>28</sup>

In further support of the "Continuous Motivation System," which the government claims now covers up to 90% of the population, the Pakistani government has enlisted the aid of the press and radio and has launched a national publicity campaign. Other ministries of the government, Education and Agriculture, were also enlisted to promote family planning in response to long-term food supply. The training programs for health workers in the family planning field is being accelerated and the PIDE has found substantial financial support for its demographic research.

On the other hand, the early performance of the CMS program on a national basis reveals a number of very serious tactical flaws. First, the CMS was and is based upon "motivation" of the fertile couples, but this motivation has broken down for several reasons, including failure of the workers to maintain "motivation" through required number of visits. Second, the couples have proven less willing to accept family planning than initially anticipated. Third, record-keeping by the CMS workers has broken down recently, undermining the validity of the national data. Fourth, contraceptive supplies do not seem to be adequate, despite the government's subsidization of these supplies. Fifth, the CMS field workers were supposed to receive continuous training, but this effort also seems to have been discontinued or severely reduced. Finally, consultants have observed that both supervision of the field workers and management of the program are inadequate due both to lethargy among management personnel and lack of adequately trained managers.

#### Future Prospects

In addition to the technical shortcomings in the CMS noted above, there are also some other generally sobering aspects of the population problem in Pakistan, which cast shadows over future prospects of radically reducing the population growth rate. These include both technical and cultural-sociological problems, some of which have been touched upon and which in summary are as follows:

- The present plan, however innovative it may appear on paper, remains to be tested and proven feasible and until then the government is really only groping forward in family planning;
- The USAID estimates that at least \$150 million will have to be budgeted during the next five years in order to fund the government family planning program;

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<sup>28</sup> DAP, op. cit., pp. 37-38.

- There are still severe weaknesses in the GOP's public health administration and in cooperation and coordination between the GOP Ministry of Health and the provincial and district health departments;
- Health manpower constraints remain formidable and it is very doubtful that enough family planning workers, including physicians and nurses, can be trained to implement fully the CMS program;
- There are also severe economic and cultural-sociological problems principally concerning convincing the Pakistani peasant that it is in his best interest to curtail the size of his family. This is the age-old problem encountered in all developing countries and may only be resolved very slowly as economic and educational conditions in the countryside gradually improve;
- Finally, the data are so imperfect that the GOP and its assisting agencies may not be informed accurately as to the gravity of the problem. It appears now that the growth rate declined from the high of 3.3% per annum between 1962-1965 to about 3.0% between 1965-70, but the central government cannot be certain of this until more data are collected, refined and analyzed. Thereafter, however, some authorities believe that the population growth rate has soared to between 3.5 and 4.2% in the period 1970-1975.

Table 12: AGE-SPECIFIC FERTILITY AND MARITAL FERTILITY RATES FOR 1,000 WOMEN  
 BASED ON PGE 1963-65 AVERAGE AND PGS 1968 AND 1971 AVERAGE FOR PAKISTAN

Age Group	Fertility Rates		Marital Fertility Rates	
	PGE 1963-65 (CS)	PGS 1968 & 1971	PGE 1963-65 (CS)	PGS 1968 & 1971
15 - 19	75	58	250	187
20 - 24	242	223	295	275
25 - 29	268	261	282	284
30 - 34	254	252	264	265
35 - 39	188	200	200	213
40 - 44	100	124	114	138
45 - 49	73	85	89	105
Total fertility rate	6,000	6,000		
Total marital fertility rate			7,470	7,340
Gross reproductive rate	2.91	2.93		
Marital gross reproductive rate			3.64	3.58

Definitions

Age specific fertility rate - Number of children ever born per 1,000 women in specified age group.

Age specific marital fertility rate - Number of children ever born per 1,000 married women in specified age group.

Total fertility rate - Total number of children ever born to 1,000 women during the reproductive years, 15-49.

Total marital fertility rate - Total number of children ever born per 1,000 married women during the reproductive years, 15-49.

Gross reproductive rate - Total number of daughters ever born per 1,000 women during the reproductive years, 15-49.

Marital gross reproductive rate - Total number of daughters ever born per 1,000 married women during reproductive years, 15-49.

Source: Prologue to development policy and population policy. The Pakistan Experience, February 25, 1975.

Table 13: REPRODUCTIVE AGES AND BIRTHS BY AGE OF MOTHERS

Ages of females in complete years	Pakistan		Urban		Rural	
	Population of females	births	Population of females	births	Population of females	births
Total	100.00	100.00	100.00	100.00	100.00	100.00
15 - 19	17.83	5.19	20.87	4.86	16.78	5.28
20 - 24	18.31	21.74	18.52	23.85	18.23	21.16
25 - 29	18.26	24.68	17.18	27.13	18.65	24.01
30 - 34	15.77	21.58	14.93	22.06	16.06	21.45
35 - 39	12.77	14.71	12.71	14.31	12.79	14.81
40 - 44	10.15	7.74	9.08	5.54	10.52	8.34
45 - 49	6.91	4.37	6.71	2.25	6.97	4.95

Source: Statistical Division, population growth survey: 1971, De facto estimates, Karachi, 1974.

Note: Population of females for age 45-49 relates to that age group only, but the births of females of age groups 45-49 includes births to females 45 and over.



## CHAPTER SIX

### NUTRITIONAL DEFICIENCIES IN PAKISTAN

#### Nutritional Conditions in Pakistan

##### The West Pakistan Nutritional Survey, 1964-1966<sup>1</sup>

During the period 1964-1966 the Government of Pakistan undertook a nutritional survey of the then West Pakistan as part of the National Nutrition Survey, having completed a similar survey in East Pakistan some years previously. This nutrition survey in West Pakistan produced confirmation of a condition long suspected, i.e., that there was widespread malnutrition in West Pakistan. Since 1966 other surveys and studies have been conducted which only confirmed the findings of the National Nutrition Survey.<sup>2</sup>

Clinical, dietary and biochemical appraisal was used during the conduct of this survey. During the course of the survey, over 1,400 households with a population of over 8,800 people were analyzed for nutritional status, while almost 6,000 people were examined clinically.<sup>2</sup>

##### Significant Results of the Nutritional Survey

Mortality and Growth Curve Data - The data of this survey revealed a very high mortality rate among children deriving in large measure from poor nutrition. Thus 13% of the children died within the first year of life, 12% died within the first four years and 0.9% died between four and five years of age. A total of 25.9% of Pakistani children died within the first five years of life according to these data. With such deplorable mortality data, it is hardly surprising that the growth curve also suggests widespread growth retardation among Pakistani children of preschool age. After the first three months a gap develops in height and weights between Pakistani and northern European children. This gap continues to increase at least until the age of five. After the fifth year the data suggest that nutrient requirements of West Pakistani children are satisfied at a lower level than that of northern Europeans. Then, too, Pakistani children in the age five-eighteen years are both shorter and weigh less than do their northern European counterparts. Part of this condition is genetically caused, of course, but again, it is also due to poor nutritional status.

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<sup>1</sup> See Nutrition Survey of West Pakistan, February 1965-November 1966; A Report. Islamabad: Directorate of Nutrition Survey and Research, Ministry of Health, Labor and Family Planning, Government of Pakistan, 1970.

<sup>2</sup> Ibid., p. 1; Blood and urine analyses were also used. See also Report on the Extent of Malnutrition in Flood Affected Areas of Punjab and Sind. Ministry of Health, 1974 and a Baseline Sample Survey of Northern Areas, Planning Commission, Government of Pakistan, 1974, p. 7.

Calorie, Protein and Vitamin Deficiencies - There is also widespread calorie and vitamin deficiency. In the rural areas 46% of the families consumed less than recommended allowances of calories with a certain number consuming much less than health requirements demand. The principal source of calories is wheat which provides about 70% of the consumed calories.

Protein deficiency is also widespread in Pakistan. This survey showed that it was the protein from animal sources that was especially lacking. About 70% of the consumed protein was derived from cereals, while only 11% came from animal sources.

Vitamin deficiency is also widespread. The dietary intake of Vitamin A is insufficient in almost the entire population where average consumption is about half the recommended allowance. The authors of this survey believe that lack of knowledge is the principal cause of Vitamin A deficiency rather than unavailability. This survey also revealed that virtually the whole population is deficient in Riboflavin consumption. It was also confirmed that about half of the population has Vitamin C deficiencies, especially prevalent among the urban poor.

Diet Among the Pakistanis - In the latter sixties, therefore, this survey established that a very large part of the population suffered from undernourishment and certain vitamin deficiencies. Despite the passage of several years since this survey, more recent analyses reveal essentially the same dietary patterns. These deficiencies, moreover, stem only partially from a lack of food production since about 70% of the Pakistani population is agrarian and food production, although outpaced by the rapid increase in population, is subject to quantitative increases. Rather, the more serious causes are an imbalance in production toward cash crops, poor food distribution, inadequate facilities for food storage, general dietetic ignorance, and certain cultural characteristics.<sup>3</sup>

Dietary intake derives principally from vegetable products, the most important of which are wheat, fruit, rice and various green vegetables. Vegetable production represents about half of the Pakistan food production. The Pakistanis derived some nourishment, but very little proportionately, from animal origin, including buffalo milk, beef, buffalo, mutton, poultry and fish. About one-third of the proteins are from animal origin, while two-thirds are from vegetable origin.<sup>4</sup>

Problems of distribution, food preservation and cultural patterns also contribute to these dietary deficiencies. Distribution of food is variable according to income. The poor, therefore, obtain the smallest share of the food and suffer proportionately more malnutrition. Cultural patterns also have a considerable effect on food distribution at the household level. The wage earner, in almost all cases the male head of the household, consumes the largest and best

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<sup>3</sup> See Ibid. p. 7.

<sup>4</sup> Ibid., p. 7; in the northern rural areas, for example, maize is consumed by 97% of the inhabitants of four sample villages, while wheat is consumed by 86.5% and rice is consumed by only a small percentage of these villagers. The principal source of fat is pure ghee, ranaspati and oil. Eggs were consumed by only 5% and 1.5% of children and mothers, respectively, in the sample villages. Meat was only sporadically consumed, the main source of which was mutton. Pulses were used by 63% of the households in these villages. Green vegetables were consumed by 65.2% of the households; milk consumption was very limited to about 11.6% of the villages.

share of the available food. The wife and children share the remainder of the available food. Thus, malnutrition is visited more harshly upon women, especially when they are pregnant, and children.

Finally, there are only very limited storage, refrigeration and preservation facilities in Pakistan. This results in a substantial wasting of food. In addition, transportation is poor, both road and rail facilities grossly inadequate. Thus, the local populations are virtually limited to the products of the area in which they live. Dietary education, which might help alleviate the absence of food variety, is also nonexistent.

#### Nutritional Disease Patterns

We have already observed the abnormally high mortality among preschool children in Pakistan: 13% of infants die, 12% within one to four years, 0.9% between four and five years, a mortality of 25.9% within the first five years of life. We have also noted that both urban and rural populations suffer a deficiency of Vitamin A, Riboflavin and Vitamin C. These nutritional deficiencies lead to the following disease patterns.<sup>5</sup>

##### Vitamin A Deficiency

Vitamin A deficiency is widespread and common to all income and geographic groups. Clinical signs of this deficiency appear in preschool children especially. Among adults, 3.26% of pregnant and lactating women and 39% of women of childbearing age have bitot's spot, a sign of Vitamin A deficiency. Finally, it was discovered that 34% of the population assessed biochemically had Vitamin A deficiencies.<sup>6</sup>

##### Riboflavin

Riboflavin is essential for metabolism at the cellular level and is vital for the proper functioning of every cell in the body. Almost 100% of Pakistani families consume less than the recommended level of Riboflavin irrespective of income. Survey data revealed that 7.9% of the population demonstrated clinical deficiencies in Riboflavin.

##### Vitamin C

There is widespread inadequacy of dietary consumption of Vitamin C among Pakistanis, but it is especially prevalent among low income groups. The deficiency is also more acute in urban areas. About 50% of all families surveyed consume less than the recommended allowances. Incidence of clinical signs related to Vitamin C are about 8.0% of the population generally, but with 43% of pregnant and lactating women showing deficient plasma levels.

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<sup>5</sup> See Research Programme on National Health Problems, *op. cit.*, pp. 3-8.

<sup>6</sup> Nutrition Survey, *op. cit.*, pp. 2-3.

### Anaemia

About 36% of the rural and 56% of the urban population suffer from anaemia. Approximately 76% rural and 100% urban pregnant and lactating women had low or deficient levels of hemoglobin. But there are very little data of mortality and morbidity for anaemia. Although dietary intake of iron was thought to be sufficient, it is believed that most of this anaemia is of the iron deficiency type. Further intense study is required, therefore, to confirm the dietary intake of iron as sufficient or to associate the anaemia with other diseases such as infestation and diarrheal diseases.

### Goiter

The incidence of goiter resulting from iodine deficiency is not widespread in Pakistan, but it is present in about 5% of pregnant and lactating women. It is known, however, that it is common in some isolated areas of Pakistan reaching about one-third of the population in some villages.

### Other Diseases Affected or Influenced by Malnutrition

Due to the lack of acceptable data, it has not been possible to include the detailed effect of malnutrition on other diseases in Pakistan. But with malnutrition so prevalent, it is evident that it plays a major role in several diseases afflicting the Pakistani people, not only because it produces disease by itself, but also because it debilitates the body, reducing the resistance to other diseases.<sup>7</sup> Thus, such diseases as tuberculosis, dysenteries and diarrheas, typhoid, respiratory diseases, and intestinal helminthiasis may be attributed to malnutrition as a contributory factor if not the principal element in the prevalence of these illnesses.

### Government Programs to Improve the Nutritional Status of Pakistanis

The foregoing suggests that several measures of reform are necessary before progress toward adequate nutrition in Pakistan is achieved. These reform or corrective measures include better nutritional education at the local level, improved distribution of agricultural products among the several regions of Pakistan, better and greatly increased storage facilities for available food, more attention by the GOP's public health authorities and planners to nutritional problems and, of course, some increased food production.<sup>8</sup>

The GOP, in any event, through its own observations and advice of several international agencies and advisors, is now aware of the deficiencies in nutrition standards and the need to

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<sup>7</sup> See Research Programme on National Health Problems, *op. cit.*, pp. 3-5 for the plans set forth by the Pakistan Medical Research Council to undertake nutritional studies so as to formulate appropriate responses to prevention of nutritional disorders.

<sup>8</sup> See DAP, *op. cit.*, p. 50.

<sup>9</sup> *Ibid.*, p. 50.

increase food production. Thus, the GOP, by cooperation with the USAID, has developed a Nutrition Planning Project, the purpose of which is to assist the GOP generally and its planning division in particular to identify and quantify nutrition problems and to develop policies and programs to respond to these problems.<sup>9</sup> In conjunction with this project, a new comprehensive National Nutrition Survey has also been undertaken and the results from this survey should be available during 1976.

In the interim the government has under study and implementation in most instances, means to increase Pakistan food production as well as the quality of that food. The USAID is supporting several nutritional projects: Project in Tea and Flour Fortification, Village Food Processing, Nutrition Planning and Research. The former, which fortifies wheat atta with niacine, riboflavin, iron and thiamine, those elements in which the Pakistanis are most deficient, is highly important to Pakistan's nutritional efforts.

The GOP itself is seeking to increase agricultural production through various methods (see appendices for details). These include:

- A billion dollar program to construct fertilizer plants to make Pakistan self-sufficient, at least in urea, by 1979;
- A large fertilizer import program until 1979 which is supported by the USAID;
- An eleven-year program is being developed by the GOP to control water-logging and salinity in 14 million acres of land at a cost of over \$500 million which the USAID is also supporting;
- The Baroni Agriculture Project designed to increase the production of 7.5 million acres of baroni (rainfed) land also supported by USAID; and
- Other agriculture production projects including cotton seed oil extraction research, integrated rural development, rural electrification and rural roads, are either underway or planned for the period 1975-1980.

In the past twenty years the quantum index of all crops has increased by 100% while the population has more than doubled. Thus, there has been a reduction in agricultural production per capita. In food crops, this situation is worse since food crops only increased by 79% in the past twenty years. It is in connection with the measures touched upon above that the GOP is basing its expectations to substantially increase food production. It is hoped, thereby, to equal and then surpass the population growth rate so that gains will be apparent in future agricultural production per capita and malnutrition will be reduced accordingly.

#### Summary

Due to several factors delineated above, Pakistan currently suffers a major health problem of malnutrition, the salient points of which include:

- A quantitative lack of caloric intake especially among low income groups in the rural and urban population;
- A qualitative lack of protein;

- Important nutritional disorders deriving from nutritional anemias and Vitamin A deficiencies in addition to protein-calorie malnutrition;
- A totally unsatisfactory distribution process for food on the family level with the male wage earner taking the major share and women and children dividing an insufficient remaining quantity of food; and
- A cumulative mortality rate of 25.9% among pre-school children (five years and under) deriving from an indeterminate but pernicious malnutrition.

The GOP, as recorded above, is aware of the need to increase and diversify food production and is taking measures during this current planning period, 1975-1980 to do so. There is scant evidence, however, that similar measures in educating the masses to the need for better nutritional habits and more rational cultural patterns for family living are also being pursued with any vigor.

Table 14: PER CAPITA CONSUMPTION OF FOOD GOODS

	(ounces per day)		
	Household Survey	Nutrition Survey	Food Balance Sheet
Wheat	13.00	13.34	11.20
Other cereals	N.A.	0.63	1.50
Rice	1.49	1.92	2.32
Pulses	0.63	0.68	0.81
Sugar, refined	0.46	0.91	0.85
Sugar, raw	0.78	--	1.66
Fats and oils	0.95	0.71	0.86
Vegetables	1.24 <sup>1</sup>	2.36	--
Milk <sup>2</sup>	5.36	4.86	--
Meat	0.67	0.60	--

<sup>1</sup> Includes potatoes and onions only.

<sup>2</sup> FAO/IBRD estimates of milk consumption result in 12.20 ounces per capita per day.

## CHAPTER SEVEN

### MATERNAL AND CHILD HEALTH CARE

#### Some Problems Associated with MCH Care in Pakistan

Some of the activities associated with MCH care also fall within the scope of other sections of this study such as family planning, general health care and delivery, nutritional problems and health manpower. This may engender some repetition. Nevertheless, it should be useful to examine briefly, and in summary fashion, the various aspects of MCH in Pakistan, including the outstanding problems, the GOP programs for dealing with these problems and the future prospects for MCH care in Pakistan.

The following appear to be the principal problems affecting maternal and child health care in Pakistan.

- The coverage of the population relating to maternal care activities is extremely limited, probably no greater than 15% of the population, that portion which has access to western-style health care;
- Only a very limited number of births are attended by western-trained health personnel, physicians, midwives etc., something less than 5% of the deliveries. By comparison, for example, about 65% of the deliveries in Jamaica were attended by western-trained health personnel;<sup>1</sup>
- Virtually none of the Pakistan women have access to the more sophisticated treatment for multiparity or high risk pregnancies. Thus, maternal deaths during childbirth is thought to be very high, about 8 per 1,000 live births;<sup>2</sup>
- Almost all, i.e., over 99% of the pregnant and lactating women are anemic or suffer from low levels of haemoglobin;
- There is an abominable lack of child care in Pakistan and a very high level of mortality and morbidity among children up through five years of age. Mortality for these children was 25.9% during the latter sixties while they suffered from most of the childhood diseases recorded in Chapter Two (see also Table at end of Chapter). The infant mortality rate in 1974 was still 111 per 1,000.

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<sup>1</sup> See Information Paper: Interactions and Socioeconomic Development in Jamaica, OIII, 1975, p. 47.

<sup>2</sup> See Sample Survey of Northern Areas, Planning Commission, GOP, 1974, p. 5; according to this GOP survey, these estimates of consultants are extremely high and inaccurate. In their northern survey, GOP statisticians claim there was no maternal mortality in several villages surveyed but acknowledged an average infant mortality rate of 273 per 1,000 live births.

- The MCH clinics are woefully understaffed and are so situated geographically as to provide very limited coverage. Moreover, it appears that some of these clinics are to be upgraded to Basic Health Units while, simultaneously, 235 new Dispensaries/MCH Centers are to be constructed by the end of 1975-1976. The GOP claimed to have constructed only twelve MCH Centers in 1974-1975, however.<sup>3</sup>
- Finally, we have also noted that malnutrition is widespread among children and pregnant and lactating women, which is compounded by the cultural pattern of the male household supporter taking the largest quantity of available food, frequently leaving insufficient quantities for the remainder of the family.

### The Pakistan MCH Program

#### The MCH Care Centers

In 1974 the GOP reported that there were 715 Maternal and Child Health Centers in Pakistan. Some of these centers are located in and associated with the Rural Health Centers while others are located separately so as to function as individual units. In any event, 399 were located in urban areas while 316 were situated in rural areas.<sup>4</sup> One GOP report observed that there were none in the mountain areas.<sup>5</sup>

A Lady Health Visitor is usually placed in charge of the MCH Care Center. She is assisted by two midwives and a janitor to do the physical work and provide for the upkeep of the center. The center provides clinical services for the mothers and children. The Lady Health Visitor also undertakes some home visits where feasible. Deliveries are supervised, but only occasionally, while indigenous midwives are trained at the MCH care centers. These centers are supervised by the Inspector of MCH. Her headquarters is usually located in the provincial capital.

#### Problems with the MCH Program and Future Prospects

Until the current planning period in which plans were drafted for the period 1975-1980, (Fifth Five Year Plan), MCH care, like many other aspects of health care in Pakistan, received scarce attention and even less funding. As a result, MCH care in Pakistan was not even adequate for that small percentage of the female/children population who could avail themselves of this care at MCH centers. Specifically, the MCH centers were constantly short of supplies, equipment and midwives to treat their patients. In addition there was never an adequate number of health personnel (Lady Health Visitors) to staff the MCH centers. The Pakistan health officials found it very difficult to recruit Lady Health Visitors due to their reluctance to work in rural areas and the normal problems of marriage and pregnancy.<sup>6</sup>

<sup>3</sup> Drs. M. Piot and G. Deboeck Trip Report, Feb. 14, 1975, p. 32; see also Annual Plan, op. cit., pp. 19 and 31.

<sup>4</sup> Ibid., p. 17.

<sup>5</sup> A Programme for Rural Health in the Northern Areas of Pakistan, Planning Committee, GOP, 1975, p. 2.

<sup>6</sup> DAP, op. cit., p. 7, Health Sector; see also the Annual Plan, op. cit., p. 2 in which the GOP acknowledges that up to 50% of the Lady Health Visitors have been emigrating while the majority of those who remain elect to serve in the urban centers.

Finally, an indeterminate number of the MCH centers were integrated into the Rural Health Centers and, in consequence, tended to lose their identity. No special effort could be made to treat maternal and pediatric maladies since the resources were then focused on the general problems of that part of the rural population that had access to the Rural Health Centers.

The limited data available on the Fifth Five Year Plan indicate that the GOP is aware of the grave deficiencies in the MCH care programs of the past, deficiencies so grave as to render the program essentially ineffective. The GOP, for example, hopes to reduce the infant mortality rate from 111/1,000 in 1974 to 86/1,000 by 1980 and the maternal mortality rate from 8/1,000 in 1974 to 4.3/1,000 in 1980. It is also hoped to reduce the respiratory diseases rate in the 0-4 year age group from 66.3/1,000 in 1974 to 50/1,000 by 1980.

In maternal and child health care, as in other aspects of health care for the Pakistani people, the GOP appears to have recognized belatedly both the deficiencies in, and some of the resources required to render these programs effective. Thus, the GOP, after several surveys, has identified the principal diseases afflicting the general rural population but especially women and children including those such as pneumonia, rheumatoid arthritis, dysenteries, enteritis, tuberculosis, measles, smallpox and ascariasis which are the leading causes of death (see Table at end of Chapter). GOP health planners have undertaken several projects to bring health care to the rural population as delineated in part above.

Thus, during 1975-1976, plans call for the construction of 235 new dispensaries and MCH Centers in rural areas. In order to staff these new centers, both auxiliary and Lady Health Visitor training has been increased for the current year, 1975-1976 so as to train 228 Lady Health Visitors and 1,000 Auxiliary Medical Assistants.<sup>7</sup> Integration of health workers has also begun so that the family planning programs will be coordinated with the work at the MCH Centers. In all, there has been a 28% increase in revenue expenditures and an 80% increase in the development expenditures in the overall health field for 1975-1976 over the revised expenditures of the previous year (see Chapter Ten).<sup>8</sup>

Despite these encouraging signs, the immediate outlook cannot be regarded as especially optimistic. If there is no slippage in the above programming, the GOP will be able to extend health coverage for rural women and children from 15 to 20% by the close of 1975-1976. If the Five Year Plan is completed, extension of coverage will reach 50% of the rural population by 1980.

Consultants doubt, however, that the GOP can achieve even these modest objectives. Some believe that, in the light of past experiences, neither the training nor construction schedules can be achieved. They are also skeptical of the effect of turning existing MCH Centers into RHC's and BHW's. This may actually reduce rather than increase the MCH coverage in the interim while new MCH Centers are being constructed. Finally, there is also some doubt about the wisdom of integrating all the workers including malaria workers. This may focus too much effort on curative medicine while depriving preventive efforts from obtaining required manpower and material resources, i.e., malaria and MCH, for example.

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<sup>7</sup> Ibid., p. 31.

<sup>8</sup> Ibid., pp. 6-7.

Table 15: PRINCIPAL DISEASES AFFLICTING WOMEN AND CHILDREN IN NORTHERN AREAS

The principle diseases in the Northern areas in the descending order are:

1. Ascariasis
2. Goitre
3. Entrobiasis
4. Chronic bronchitis
5. Pneumonia
6. Anaemia
7. Rheumatoid arthritis
8. Pyrexia of unknown origin
9. Dysenteries and enteritis
10. Tuberculosis
11. Smallpox
12. Measles, polio, whooping cough

The common causes of death are:

1. Pneumonia
2. Rheumatoid arthritis
3. Dysenteries and enteritis
4. Pyrexia of unknown origin
5. Tuberculosis and measles
6. Smallpox and ascariasis

## CHAPTER EIGHT

### ENVIRONMENTAL INADEQUACIES AND MALARIA CONTROL IN PAKISTAN

#### Pakistan's Forbidding Environmental Conditions

The physical environment in much of urban and virtually all rural Pakistan is highly detrimental to the health of the Pakistanis. The environmental sins in Pakistan run the course from non-existent sewerage facilities to gathering air pollution in some parts of the major cities.

The most serious offense, however, is the lack of proper sewerage facilities in both urban and rural Pakistan coupled with the lack of personal hygiene on the part of the Pakistanis in disposing of all kinds of wastes. It is estimated that only 15% of the urban population has access to basic sewerage facilities.<sup>1</sup> In rural areas of Pakistan bodily functions such as defecation are almost always done in open fields where the excreta serves as breeding grounds for disease vectors.<sup>2</sup> These practices also contaminate the water supply, provide sustenance for mosquitoes and flies and contaminate animals.

In the Pakistani cities drainage facilities are at a premium. Parts of the cities have open sewers as well as open cement catchment bins where night soil and garbage are deposited.

Lack of pure and safe water also poses a severe environmental sanitation problem. It is estimated that about 30% of urban residents are currently served by some potable water supply.<sup>3</sup> In rural Pakistan it is estimated that less than 50% of the Pakistanis have potable water. Natural sources of water are often available but, unfortunately, due to the lack of proper sewerage, this water is almost always contaminated before it can be consumed.

In addition to the deficiencies in sewerage, garbage and waste disposal and contaminated water, there is a severe personal hygiene problem in Pakistan which provides still another disease source. Not only does the population wash in polluted water, when they do, but the lack of soap and detergents adds to the problem. Further, the housing both in urban and rural Pakistan is so limited and defective, that many of the poorer Pakistanis share their shelter with their animals. Rodents and vermin also breed in these dilapidated shelters.

Finally, air pollution both from industry, gasoline engines and as a result of animal droppings are beginning to create cause for concern. Animal dung, for example, dries in the streets, is pulverized with dried human excrement and becomes part of the dust in the dry season and the mud in the wet season. The dust infiltrates the open air food markets and covers the food. In addition, exhaust from gasoline engines is becoming an increasing irritant in some Pakistani cities where visitors report the forming of a bluish haze where any amount of traffic congestion occurs.

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<sup>1</sup> Trip Report, Pakistan, Autumn 1974.

<sup>2</sup> See Health Statistics, op. cit., p. 33; see tables 16 and 17 at end of chapter.

<sup>3</sup> Ibid., p. 33; see table at end of chapter.

### Required Environmental Reforms

In reference to the above, it is obvious that Pakistan, like most LDC's is in almost desperate need of environmental reforms. The scope of these reforms involves almost all aspects of environmental sanitation.

There is, for example, an urgent need for the provision of sanitary latrines for the rural population of Pakistan. Such a program would begin to eliminate human wastes from the fields from whence so much disease and so many vectors originate.

Similarly, Pakistani cities are in urgent need of operating sewerage and drainage systems. Most health authorities believe that much of the urban disease originates in the open, urban sewers.

Another urgent requirement is the creation of a pure and safe water supply. Pakistan has the advantage of natural sources of pure water but due to lack of sewerage facilities, this water is contaminated before it is consumed.

Pakistani cities are also faced with the new problem of growing industrial pollution of the air, and perhaps the rivers. In time, this may become a major problem for the GOP. At the present, however, latrines, sewerage and potable or piped drinking water are more urgent.

Finally, the Pakistanis, both rural and urban, desperately need education in proper hygiene, both personal and environmental. GOP courses in hygiene and health care, together with a renewed effort to increase the production and distribution of soap, should begin to make the Pakistani citizens conscious of the need for environmental reform.

### The Malaria Eradication Program in Pakistan

In 1960 the GOP estimated that about 20 million Pakistanis were suffering from malaria. In the following year, however, the GOP, with foreign assistance, initiated a malaria eradication program with final eradication of this disease set for 1975.<sup>4</sup> This program was very successful during its first several years so that by 1967 the GOP could report that only about 10,000 people were then suffering from the disease while the parasite rate dropped from 15% to under 0.1%.

Thereafter, the Malaria Eradication Program (MEP) began to suffer from failure to exert proper vigilance, lack of technical personnel, managerial and political problems within the GOP and resistance by the vector to DDT. The MEP slipped rapidly into decay. By the middle of 1969 malaria had reappeared in epidemic proportions, infecting several million Pakistanis and staging a particularly strong resurgence in the Punjab and Sind. Conditions scarcely improved during the next few years. In 1974 the GOP estimated that there were at least 2.4 million cases. During 1975 Pakistan experienced another traumatic increase of malaria wherein the GOP estimated that the number of cases had increased to 12 million.<sup>5</sup>

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<sup>4</sup> Trip Report, Pakistan, Autumn 1974.

<sup>5</sup> Health Statistics, *op. cit.*, pp. 3-4.

Foreign specialists have had opportunities to examine the Pakistan Malaria Eradication Program and their conclusions are interesting and relevant not only to the future efficacy of the MEP but also in relation to Pakistan's public health programs. The following is a synopsis of these comments:

- On paper, the Pakistan malaria eradication program is well organized and provisions for its execution and administration are logically conceived. It provided for the creation of zones of eradication which were divided into subsectors of 12 to 20 villages containing about 12,000 population. Each subsector had a basic worker whose duties were to monitor the malaria situation in his subsector and to treat patients with malaria or to send them to a physician if radical treatment were needed. Additional personnel were hired during the spraying season. The whole zone was carefully monitored from the zonal headquarters.
- On paper, at least, the MEP was far better organized than the general public health programs. And during the early crash years the MEP seemed to have performed as planned. It was successful in reducing the incidence of malaria and the parasitic rate dramatically.
- But in the long-term the MEP plans and operations failed for several reasons:
  - o The MEP was confined to rural areas while the cities like Karachi were supposed to conduct their own programs;
  - o The cities failed to do so properly, thereby leaving vectors untouched and free to reinfect the rural population;
  - o As a result malaria was never eliminated from urban Pakistan and soon spread to rural areas again;
  - o Further, morale and the performance of the staff declined in the rural areas allowing reinfection to take place.

In any event, the GOP, after much consultation with foreign specialists and much internal planning, decided it had to reinstitute the MEP on a large scale, both at the national and local level. The GOP, therefore, committed about \$100 million for a new Malaria Control Program.<sup>6</sup> The USAID is supporting this new effort with a loan (perhaps of \$35 million) and rupee grant. As such, the USAID anticipates providing 60% of the foreign exchange costs for the first three years and 75% of the local costs over the five year control program. Principal technical assistance is being provided by the WHO but the USAID plans to provide a few specialists for specific areas of assistance such as vehicle maintenance.

The new MCP provides for integration of the malaria program with the general GOP rural health programs in accordance with the health plan of the Fifth Five Year Plan, 1975-1980. Some foreign experts are highly critical of the "integration" plans, however, since they claim, with some logic, "for the malaria program to be integrated with the health services system, there must be such a 'system' with which to integrate."<sup>7</sup> As we have observed above, the GOP basic health service system is very nebulous, badly organized and has malfunctioned in the past.

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<sup>6</sup> DAP, op. cit., pp. 53-54.

<sup>7</sup> Trip Report, Pakistan, Autumn 1974.

Malaria specialists fear that the malaria program will suffer from the same malfunction if it is integrated with the basic health services. Others fear that integration would lead to the basic health services usurping the funds set aside for the malaria control program. These specialists concede, however, that since the malaria control organization probably has the best demographic information in Pakistan, these data and the malaria personnel would be very useful and appropriate to begin eradication of some diseases such as cholera, gastrointestinal and other children's diseases, and to begin health education and environmental sanitation.

Table 16: POPULATION SERVED WITH POTABLE WATER AND SEWERAGE SYSTEM

Facility	Urban		Rural	
	Population (million)	%	Population (million)	%
Potable Water .. .. .	6.0	30.0	2.4	5.0
Sewerage System .. .. .	5.0	15.0	--	--

Source: Planning Commission estimates.

Table 17: SYSTEM OF NIGHT SOIL DISPOSAL IN RURAL AREAS

System of Disposal	No. Houses	Percentage
Bore-hole Latrine .. .. .	1	0.1
Privy. Conservancy .. .. .	9	1.5
Open field squatting .. .. .	572	98.4

Note: Some houses were having overlap of disposal system.

Source: Institute of Hygiene and Preventive Medicine, Lahore and Planning Commission, Islamabad. Baseline Survey of Feroz Wala and Gajju Matta (Punjab) April 1975.

Table 18: DRINKING WATER BY SOURCE IN RURAL AREAS

	Well	Hand pump	Total houses
No. .. .. .	233	392	576
% .. .. .	40.4	59.6	100.0

Table 19: UNIT COSTS FOR WATER SUPPLY,  
SEWERAGE AND DRAINAGE PROGRAMME (1975-80)

Area	System	Population to be served (Millions)	Av. Cost per capita (Rupees)
<b>1. WATER SUPPLY:</b>			
A. Urban	(a) House service connections	2.60	250.0
	(b) Stand post	2.00	25.0
	Total A	4.60	--
B. Rural	(a) House connections	2.75	100/0
	(b) Handpumps 50 persons/hand pump	5.33	15.0
	(c) Wells, reservoirs and stand posts	2.80	25.0
	Total B	10.88	--
<b>2. SEWERAGE, DRAINAGE AND SANITATION:</b>			
A. Urban	(a) Water Borne	4.07	175.0
	(b) Septic Tanks and Latrines	4.07	Self financed
	Total A	8.14	--
B. Rural	(a) Water Borne	0.575	175.0
	(b) Latrines	5.100	10.0
	Total B	5.675	--

Source: Planning Commission estimates.

Table 20: RESULTS OF BACTERIOLOGICAL EXAMINATION  
OF DRINKING WATER

Source	No. Water points	Sample size		Water points with faecal coli	
		No.	%	No.	%
Well .. ..	18	8	44.4	2	25.0
Tubewell .. ..	8	2	25.0	--	--
Hand pump .. ..	206	74	35.9	27	36.5
Total	232	84	36.2	29	34.5

Source: Institute of Hygiene and Preventive Medicine, Lahore and Planning Commission, Islamabad. Baseline Survey of Feroz Wala and Gajju Matta (Punjab) April 1975.



## CHAPTER NINE

### DENTAL AND MENTAL HEALTH INCLUDING NARCOTICS CONTROL

#### Dental Health

Data from Pakistan relating to dental problems are very limited. These data which are available, moreover, are difficult to interpret (see tables at end of chapter). We suspect, in addition, that these data derived from extremely limited surveys of rural Pakistani children.

Given these caveats, these data do not show abnormally severe dental problems, especially in view of the extremely limited dental services available in Pakistan. These data purport to reflect calculus, debris, oral hygiene, periodontal, decay, missing and filling indices. Only in the categories of decaying, missing and filling are the percentages of children so afflicted somewhat over 30%. We suspect, however, that more comprehensive surveys, which may be undertaken during the course of the fifth five-year plan, will show substantially greater dental problems among a wider section of the populace than these current data reflect.

As noted previously, Pakistan has only a very limited number of dentists, virtually all of whom, we believe, are confined to urban areas. In 1960 there were reported to be only 141 graduate dentists. Later data reveal that in 1972 there were three institutions training students in dental surgery in Pakistan.<sup>1</sup> These were at the D.M. College of Dentistry, Lahore, Dental Department of Kyber Medical College, Peshawar, and Liaquat Medical College in Hyderabad. The total number of dentists graduating in 1972 was reported to be sixty-two and the progressive total at the close of 1972 was reported to be 556.<sup>2</sup> By 1974 the government reported there were 700 dentists practicing in Pakistan, which permitted one dentist (dental surgeon) for 100,000 Pakistanis.<sup>3</sup>

#### Mental Health and Narcotics Control

The data available for this study revealed only a limited concern by the government with mental health problems in Pakistan. In the Punjab, Sind and N.W.F.P., varying amounts of rupees were expended for mental hospitals each year between 1970 and 1976, ranging from 2,057,120 rupees for Punjab, to 288,450 rupees for the N.W.F.P. (see table at end of this chapter). We could not identify specific programs or physicians involved in psychological, psychiatric or mental health treatment. Given the state of the Pakistan public health service, psychiatric care by the government may very well have a relatively low priority at this point in time. There probably are psychiatrists practicing in the largest cities, at the universities and at the mental hospitals of whom we are not aware, of course.

<sup>1</sup> See Country Health Programme, op. cit., p. 53.

<sup>2</sup> Ibid., p. 53.

<sup>3</sup> Health Statistics, op. cit., p. 77.

On the other hand, our data reveal that there is a narcotics problem in Pakistan and the GOP, in cooperation with the USAID, has taken measures to begin to deal with this problem. The government established a Narcotics Control Board (PNCB) in Rawalpindi with branches in each of the provinces.<sup>4</sup> Little progress was achieved in controlling the flow of narcotics (opium, morphine, heroin) until 1974, when Field Investigation Units were established for this purpose. Twenty units were created in 1974 and another fifteen units were scheduled to become operable in 1975 in a renewed effort to suppress the trade in narcotics.

The narcotics trade in Pakistan derives from poppy growing in the Swabi Tehsil of the North West Frontier Province.<sup>5</sup> The USAID has prevailed upon the GOP to undertake an eradication program in the North West Frontier and has proposed funding a Poppy Eradication Project. Under this program, poppy cultivation in this area would be completely eradicated. In its place an intensive rural development program would be promoted involving rural infrastructure, especially roads and electrification, and the identification and extension of alternative crops. We do not have information, however, as to the progress achieved in this program to date.

Table 21: DECAYING, MISSING AND FILLING INDEX

Number %	0	1	2	3	4	5	6	Total
Number	22	3	69	14	73	9	24	214
Percentage	10.28	1.40	32.25	6.54	34.12	4.20	11.21	100.0

Source: Institute of Hygiene and Preventive Medicine, Lahore and Planning Commission, Islamabad; Baseline Survey of Ferozwala and Gajjumatta (Punjab) April 1975.

<sup>4</sup> See DAP, *op. cit.*, p. 56.

<sup>5</sup> *Ibid.*, p. 56.

Table 22: ORO-DENTAL HYGIENE OF PRIMARY SCHOOL CHILDREN IN RURAL AREAS

Index	Calculus Index		Debris Index		Oral Hygiene Index		Periodontal Index	
	No.	%	No.	%	No.	%	No.	%
0	20	9.35	7	3.27	6	2.80	26	11.71
0.5	38	17.76	41	19.16	22	10.29	--	--
1.0	71	33.18	48	22.43	14	6.54	58	26.13
1.1	5	2.33	17	7.95	--	--	--	--
1.2	26	12.15	13	6.07	17	7.94	10	4.50
1.3	1	0.46	6	2.80	--	--	--	--
1.5	23	10.75	49	22.90	22	10.29	57	25.68
1.7	1	0.46	1	0.46	11	--	--	--
2.0	29	13.56	29	13.56	51	23.84	31	13.97
2.1	--	--	--	--	5	2.33	--	--
2.4	--	--	--	--	15	7.00	--	--
2.5	--	--	--	1.40	19	8.88	40	18.02
3.0	--	--	--	--	37	17.29	--	--
3.5	--	--	--	--	6	2.80	--	--
TOTAL	214	100.00	214	100.00	214	100.00	222	100.00

Table 23: EXPENDITURES FOR MENTAL HOSPITALS IN PAKISTAN

Province	(rupees)					
	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76
Punjab	2,057,120	2,019,040	2,061,770	2,391,800	3,033,000	3,570,000
Sind	532,000	551,400	612,440	653,000	952,000	988,000
N.W.F.P.		288,950	360,000	354,770	425,120	430,960

Source: Health Statistics, op. cit., pp. 75-76, Tables 62(b), (c), and (d).



## CHAPTER TEN

### FINANCING THE PAKISTAN HEALTH SYSTEM

#### Recent Government Expenditures for Health Services

As is the case with most of the data relating to the Pakistan health sector, Pakistani financial data on health are also varied and somewhat conflicting.<sup>1</sup> It is virtually impossible, therefore, to provide exacting or comprehensive numbers on Pakistan's obligations or expenditures for its health care system. In a general way, however, all of these data agree that the record of GOP expenditures for health and family planning has been dismal. During the course of the fourth five-year plan, 1970-75, considering both development and non-development expenditures, the total GOP expenditures for the health sector have averaged 2.47% of total GOP outlays.

In the non-development budget, for example, in 1970-71, expenditures for health were 2.26% of total expenditures. By 1974-75 these expenditures had dropped to 1.90%.<sup>3</sup> Similarly, in the development budget, in 1970-71, expenditures for health represented 6.02% of total development expenditures, but by 1974-75 this had dropped to 3.52%. Moreover, there has been an underutilization of funds allocated for the health sector over the past five years. If the development and non-development outlays for the health sector are combined, then the total annual expenditures for health during the period 1970-1975 have declined from a high of 3.15% of GOP budget expenditures for 1970-71, to a low of 2.05% in 1973-74 and thence to 2.52% in 1974-75.<sup>4</sup>

Out of the total expenditures in the health sector during the fourth plan period (1970-75) 32.5% was consumed by the Malaria Eradication Program. Thereafter, 22.2% went for medical education, training and scholarships, 21.3% was expended on hospitals and 13.8% on the rural health program. Only 5.7%, however, was expended on some of the most serious medical problems such as tuberculosis, smallpox eradication and other communicable diseases, medical research and medical equipment.<sup>5</sup>

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<sup>1</sup> Data for this chapter were derived from The Country Health Programme, *op. cit.*, Section II, Financial, pp. 6-10; the DAP, *op. cit.*, Health Sector; the Annual Plan, *op. cit.*, pp. 3 and 18; Health Statistics, *op. cit.*, pp. 72-77, and other unpublished studies and reports.

<sup>2</sup> Country Health Programme, *op. cit.*, p. 6; Health Statistics, *op. cit.*, p. 72; according to Table 60 in 1960-61 health expenditures were 0.39% of GDP; in 1969-70 they were only 0.56% of GDP; in 1973-74 they were 0.59% of GDP, and in 1974-75 they were 0.78% of GDP.

<sup>3</sup> Country Health Programme, *op. cit.*, p. 7.

<sup>4</sup> *Ibid.*, p. 9.

<sup>5</sup> *Ibid.*, p. 8.

Table 24: ESTIMATED ANNUAL EXPENDITURE ON TREATMENT IN PRIVATE SECTOR

	<u>Million Rupees</u>
Hospital beds	120.00
Doctors in private practice	720.00
Traditional healers	288.00
Drugs and medicines	<u>400.00</u>
Total	1,528.00

Source: Planning Commission Estimates

In terms of absolute numbers of rupees committed to the Pakistani health programs, from both the development and non-development budget, the following data were provided by the government.<sup>6</sup>

Year	Total "outlay"	(millions of rupees) Health "outlay"	Percent of Health
1970-1971	8643.17	272.27	3.15%
1971-1972	9440.49	229.81	2.43%
1972-1973	12751.50	279.40	2.19%
1973-1974	18590.60	381.00	2.05%
1974-1975	22924.88	578.10	2.52%

#### Foreign Assistance, Multilateral and Bilateral

The principal sources of external assistance to Pakistan for health services have been the WHO, UNDP, the USAID, and UNICEF.

<sup>6</sup> Ibid., see appendix A-13; see also Health Statistics, *op. cit.*, p. 72, Table 60 (reproduced at end of chapter as Table 26). Still another unpublished but highly reliable source recorded the Pakistani public health budget for 1972-73 as 322 million rupees or 4.73 rupees per capita, and for 1973-74, 415 million rupees or 5.93 rupees per capita. This latter figure, this source claims, corresponded to 0.5% of the Pakistan GNP.

World Health Organization (WHO)<sup>7</sup>

For the years 1974-1975-1976-1977 the WHO contributed or planned to contribute to Pakistan health services from its regular budget the following funding, to be utilized for strengthening health services, nutrition, health education, health manpower development, communicable disease prevention and control, and environmental health:

1974 = \$629,210	1976 = \$765,030
1975 = \$720,980	1977 = \$778,670.

United Nations Development Program (UNDP)

Between 1974 and 1977 the UNDP contributed or plans to contribute the following toward health engineering research and water supply extension in Peshawar:

1974 = \$97,450	1976 = \$70,000
1975 = \$70,000	1977 = \$70,000.

In addition, family planning funding amounted to \$183,150 for family planning activities in Pakistan in 1974. An additional \$400,000 was programmed for malaria control and \$193,300 was programmed for smallpox eradication.

United Nations Children's Fund (UNICEF)<sup>8</sup>

UNICEF has been a substantial contributor to Pakistan's health programs over the past several years. As such, it has been involved in assisting Pakistan in its rural water projects and providing basic medical facilities in rural villages in the northern areas. UNICEF assistance for health, including family planning and water supply, has been as follows:

1973 = \$2,324,700	1974 = \$3,485,850.
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United States Agency for International Development (USAID)<sup>9</sup>

The USAID has contributed substantial funding to Pakistani economic and social development over a number of years. Through FY 1973 U.S. economic assistance to Pakistan amounted to \$4,194,200,000 in grants, loans, and other economic assistance. In FY 1974 the USAID provided \$35,777,000 and in FY 1975 scheduled \$78,745,000 in grants and loans for Pakistani economic development.

Only a very limited amount of these considerable sums were obligated and expended for Pakistani health programs, however. Most of it was used for agricultural production, infrastructure and education. The USAID has concentrated its health assistance, in the past, on family planning programs, nutritional development and malaria control. In FY 1975, for example, the USAID

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<sup>7</sup> See Proposed Programme and Budget Estimates for 1976-77, No. 220. Geneva: World Health Organization, 1974.

<sup>8</sup> See Country Health Programme, *op. cit.*, Tables A-16 ii and iii.

<sup>9</sup> See USAID Program Summary for FY 1974-75.

proposed \$140,000 in grants for nutrition planning and research, \$165,000 for tea and flour fortification, \$4,860,000 for population planning and another \$140,000 for Pakistan demographic research capabilities.

#### Prospects for Future Assistance

As suggested in the previous chapters, the government appears to have become aware, at last, of the need for dramatic health improvement for the Pakistani people in order to better promote economic development. Some criteria as to the sincerity of the government in promoting better health services for their people are the coordinated effort in which the government engaged with the WHO and USAID to develop a new health program and the health program which was incorporated in the fifth five-year plan.

In view of this planning and the People's Health Scheme in 1972, and the later health guards, the USAID is hopeful that the government, at last, intends to devote adequate resources to the health field. The USAID estimates that this would require an increase in the health budget from the previous 2.0-4.0% to 6.0% or even 8.0% of the annual government development plan, depending on the extent of the rural health programs. In any event, they are prepared to continue their part in the consortium (see below), provided the governmental performance remains consistent with AID's priorities in the health and related fields. The USAID might then consider grants for commodities and technical assistance in health in addition to the loan for the malaria control program.<sup>10</sup>

The WHO, UNDP and UNICEF funding can be expected to continue as delineated above in such areas as health manpower development, environmental health, disease prevention and control, nutrition, health education and family planning programs. We would assume that the other nations of the consortium will also continue their assistance but data is lacking upon which to base this assumption.

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<sup>10</sup> DAP, op. cit., p. 13, Health Sector.

Table 25: TOTAL EXPENDITURE ON HEALTH AND POPULATION PLANNING  
AND GDP AT CURRENT FACTOR COST

(in million rupees)

Year	Expenditure on Health			GDP	Percentages		
	Develop- ment	Non- Develop- ment	Total		Dev. exp. as % of GDP	Non.Dev. as % of GDP	Total exp. as % of GDP
1960-61	10.70	57.00	67.70	17,411	0.06	0.33	0.39
1961-62	22.82	69.00	91.83	18,174	0.13	0.38	0.51
1962-63	35.70	78.00	113.70	19,498	0.18	0.40	0.58
1963-64	36.45	80.00	116.45	21,864	0.17	0.36	0.53
1964-65	77.52	87.00	164.52	24,691	0.31	0.35	0.66
1965-66	61.20	84.00	145.20	26,605	0.23	0.32	0.55
1966-67	50.45	86.00	136.45	30,329	0.17	0.28	0.45
1967-68	100.63	92.00	192.93	33,301	0.30	0.28	0.58
1968-69	101.07	99.00	200.07	35,511	0.29	0.28	0.57
1969-70	112.70	128.00	240.70	43,299	0.26	0.30	0.56
1970-71	103.62	151.70	255.32	45,547	0.23	0.33	0.56
1971-72	82.94	141.10	224.04	48,883	0.17	0.29	0.46
1972-73	122.24	171.90	294.14	60,355	0.20	0.29	0.49
1973-74	260.18	210.10	470.28	78,986 (revised)	0.33	0.26	0.59
1974-75	492.91 (revised)	295.60 (revised)	788.51 (revised)	99,120 (provisional)	0.49	0.29	0.78

Sources: Pakistan Economic Survey 1974-75, Finance Division, Government of Pakistan; and, Annual Plan 1975-76, Planning Commission, Government of Pakistan.

Table 26: SOURCES OF ESTIMATED DISBURSEMENTS OF FOREIGN ECONOMIC ASSISTANCE  
1973-74<sup>a</sup>

(million dollars)

	Project	Non-Project	Total
<u>Consortium<sup>a</sup></u>	<u>64.9</u>	<u>167.8</u>	<u>232.7</u>
<u>Bilateral</u>	<u>32.2</u>	<u>127.8</u>	<u>160.0</u>
Belgium	1.0	2.0	3.0
Canada	3.0	6.0	9.0
France	4.4	5.0	9.4
Germany	6.6	12.0	18.6
Italy	7.1	3.8	10.9
Japan	6.8	15.0	21.8
Netherlands	1.3	5.0	6.3
Norway	-	1.7	1.7
United Kingdom	0.6	6.0	6.6
United States	0.8	71.3	72.1
US Eximbank	0.6	-	0.6
<u>Multilateral</u>	<u>32.7</u>	<u>40.0</u>	<u>72.7</u>
IBRD	5.5	-	5.5
IDA	16.7	40.9	56.7
Asian Development Bank	10.5	-	10.5
<u>Food Aid</u>	<u>-</u>	<u>141.6</u>	<u>141.6</u>
Food Aid Convention	-	23.8	23.8
Canada Wheat Credit	-	37.3	37.3
US Commodity Credit Corp.	-	44.8	44.8
US Public Law 480 <sup>b</sup>	-	35.7	35.7
<u>Non-Consortium</u>	<u>12.1</u>	<u>20.5</u>	<u>32.6</u>
China	2.1	20.5	22.6
Czechoslovakia	0.8	-	0.8
Denmark	1.7	-	1.7
Switzerland	1.8	-	1.8
USSR	5.1	-	5.1
Yugoslavia	0.6	-	0.6
<u>Total All Sources</u>	<u>77.0</u>	<u>329.9</u>	<u>406.9</u>

<sup>a</sup> Excluding Indus/Tarbela Development Funds, but including aid provided outside the Consortium framework.

<sup>b</sup> Including grants and loans.

## CHAPTER ELEVEN

### SYNOPSIS AND CONCLUSIONS: THE PAKISTAN HEALTH ENVIRONMENT, PROBLEMS AND PROSPECTS

#### Current Status of Pakistan's Economy and Society: Some Summary Observations

An outstanding writer in the health field has observed that:<sup>1</sup>

The health of nations is affected by almost any change in their social pattern - from the drainage of swamps to the shortening of working hours, from the introduction of cotton undergarments to the refinement of food products and to the most sophisticated medical practices.

This observation is apropos both for developed and developing nations but it has special reference for Pakistan which, most authorities agree, is a country in economic and social ferment. Despite generally unfortunate circumstances of the recent past which include war with India, secession by Bangladesh, harsh weather conditions, severe inflation, deteriorating trade status, balance of payments deficits and very limited capital for public and private investment, Pakistan's economy nevertheless has recorded continued progress since 1970.

The annual growth rate of the GDP during the period 1970-75, it is true, was only 3.0%, less than half that of the previous decade, 1960-70, which stands at 6.8%. Nevertheless, per capita consumption of almost all foodstuffs and manufactured goods was up noticeably over the previous decade while the GDP growth rate for 1976 is expected to be 4.0%. The economic problems referenced above are sufficiently severe, however, to maintain a precarious economic situation in Pakistan for some time to come, a situation demanding heady foreign assistance and sagacious management.

The political and social ferment of recent years has, to a large extent, paralleled the economic vicissitudes and, of course, cannot be divorced therefrom. During the past five years, for example, the political circumstances can be described at best as unbalanced and fluid. Even before the disastrous war with India over Bangladesh's secession in 1971, General Yahya Khan had been unable to halt the deteriorating political stability in Pakistan. But Yahya Khan's resignation and replacement by Ali Bhutto failed to bring general stability. Ali Bhutto continued dictatorial rule for many months, dismissing provincial governments and overseeing the drafting of a new constitution with a very firm hand. Only after the entry into force of the new constitution in August 1973 did a measure of stability return and that only under a narrowly-based dominant political party, the PPP (People's Party of Pakistan). To its credit and that of

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<sup>1</sup> See René Dubos, Mirage of Health: Utopias, Progress and Biological Change. New York: Perennial Library, 1959, p. 213.

Ali Bhutto, however, Pakistan survived rather well the severely damaging floods of 1973 and the government displayed sufficient leadership to demonstrate a resilient Pakistan economy.

Much of the political instability and economic vicissitudes stem from the recent traumatic events surrounding the secession of Bangladesh and war with India and subsequent defeat. But still more fundamental to this ferment are the social stresses which were becoming evident even prior to the beginning of the current decade. Pakistan, like most LDC's, was caught up in the mood of rising expectations of the sixties. This mood was exacerbated by the movement of the rural population to urban areas, a movement accelerated by a rapid population growth (now something over 3.0% annually), unemployment and underemployment in the urban areas, disastrous housing and sanitary conditions, totally inadequate health services and facilities, and antiquated and poor educational opportunities. These circumstances, of course, are only too familiar to any developing nation, but are the stuff from which social mobility and ferment are made and which have profound effects upon political stability and economic progress.

The Bhutto administration recognized the increasing demands of the populace, especially the minority but growing urban population, for upward mobility. This recognition was incorporated in the fifth five-year plan which focuses on education, health, population planning and nutrition. In order to achieve the objectives of this plan, discussed in detail in Chapter 1, Pakistan's economy must grow in real terms at about 8.0% (GDP growth was 2.6% in 1975 and some economists project only 6.4% for 1977-81) to compensate for the excessive population growth rate. But in order to achieve such a national growth rate the recent decline in private investment must be halted and reversed while simultaneously increased long-term government revenues must be generated from dormant tax rolls for larger public investments (in point of fact, total investment grew by 20% in real terms in FY 1975, mainly in the public sector). Domestic savings must be increased and higher rural incomes must also be generated for the rural masses and not just for the large wealthy landowners. Fortunately, there appears to be an adequate number of aid donors available (both from the Consortium and Arab countries) to finance short-term increased Pakistani agricultural and industrial expansion.

#### Health Challenges to Pakistani Growth

It is interesting to observe that three of the four areas of concentration of the new fifth five-year plan, general health, population planning and nutrition, legitimately fall within the purview of the health field. These areas further call attention to the interactions of health upon Pakistan's socioeconomic development and tend to substantiate Rene Dubos' astute observations recorded above.

The principal health problems which constitute a challenge to Pakistan's socioeconomic progress, just as similar health problems pose challenges to the development of other LDC's, may be summarized as follows:

- The dominant, most obsessive health problem constituting the most severe health impediment to Pakistan's progress is the nation's excessive population growth rate. Although data are not conclusive, the population growth rate appears to be something over 3.0% and may be hovering between 3.5 and 4.2% as some experts believe. In any event, from this excessively high population growth rate stem those obvious impediments to development recorded immediately below:

- Such a high population growth rate places a harsh burden on Pakistan's agriculture to provide sufficient food for the increasing population and could compromise plans for self-sufficiency by 1980;
- The population explosion tends to inundate Pakistan's already fragile educational system which, to date, has only been able to achieve approximately a 19.4% adult literacy rate;
- To date, despite recent emigration of workers to Near and Middle Eastern countries, over 25% of Pakistan's urban work force is unemployed, up from 21.8% in 1965, and there is substantial under-employment among the college educated, which has resulted in a bloated bureaucracy;
- This excessive population only adds to the already ample illness and misery among Pakistan's population and demands additional scarce resources which the government must allocate;
- The above is a familiar litany of overpopulation in underdeveloped countries but there are, of course, other impediments to development. Another is the effect of the morbidity upon the productive population both in rural and urban Pakistan. The vast array of communicable diseases including malaria, tuberculosis, and especially the gastrointestinal and parasitic diseases, sap the energy of the Pakistani worker and significantly reduce production. Indeed, it may well be that a considerable number of rural Pakistanis are ill with one disease or another most of their lives;
- In addition to the financial and material resources which the GOP must allocate to health services, there are the human resources, the skilled manpower of which there is a severe scarcity in Pakistan, which nevertheless must be used for health services, i.e., people's health scheme and health guards;
- Much of the foreign assistance which Pakistan has been receiving in substantial amounts must also be devoted under the fifth five-year plan to health care. These resources could better be used for industrial and agricultural production rather than on human resources, all of which suggests a slippage back into an earlier stage of development; and
- The government cannot begin to make such progress in modernizing its environmental sanitation with the high increase in population and thus break the vicious cycle of source, contamination, infection.

There are also numerous other impediments to the maturity of a developing nation deriving from health problems. These are principally sociological and psychological and include such diverse elements as the movement from rural to urban areas due to population pressures to the instability of family life resulting from disease. These have been alluded to in the previous chapters.

### Specific Health Problems: A Summary

If the above challenges to Pakistan's socioeconomic development deriving from health inadequacies are to be successfully countered, the government must first deal with very specific health problems which, for convenience, are briefly summarized below. These problems include:

- Public health organizations, the Ministry of Health on the federal level and the provincial health departments are uncoordinated, ill-staffed and generally inefficient.
- A deplorable lack of health manpower including physicians, nurses, technicians, etc. (physician ratio of 1/1,400 and a nurse ratio of 1/23,300).
- A totally inadequate distribution of health manpower whereby 80% of the physicians reside in urban areas with 70% of the population in rural areas.
- Only about 15% of the Pakistani population is treated by the public health service.
- Treatment of the rural population is left to the inadequately trained *hakims* and *vaidas*.
- Totally insufficient health facilities with one hospital bed per 600 urbanites and one bed for each 13,000 rural Pakistanis.
- Only 3,086 dispensaries, 715 MCH centers, 137 RHC's and 369 BHU's are available for all of Pakistan.
- A wide range of communicable and other diseases including malaria, cholera, tuberculosis, trachoma, typhoid and paratyphoid, tetanus, dengue, respiratory diseases and various other gastrointestinal diseases, altogether, a "miserable" health environment.
- As to the government family planning program, it is clear that the Bhutto administration is aware of the dangers of overpopulation and is promoting energetic measures to reduce the birth rate and hence, the population growth rate. By employing the "Continuous Motivation System," by increasing both the quality and quantity of family planning workers and by subsidizing the distribution of the pill and condom, the government claims to be reaching 75% of the Pakistan population. The stark reality, however, is that the population growth rate does not seem to be declining and may, in fact, be increasing. Although data are not very reliable, there seemed to have been a decline from 3.3% per annum in 1962-65 to about 3.0% at the close of the decade. But by 1975 some believe it is growing between 3.5 and 4.2% with a minimum of something in excess of 3.0%. This clearly suggests that the factors here as in other LIC's are not altogether technical or material but also sociological.
- Nutritional deficiencies, including malnutrition, are rampant in Pakistan and contribute significantly to a very high mortality and morbidity rate among children. It is believed that at least 25.9% of Pakistani children die within the first five years of life, due in part to nutritional deficiencies.

- Nutritional deficiencies are not limited to children, however. The adult population also suffers from widespread calorie, protein and vitamin deficiencies.
- Maternal and child health care in Pakistan is extremely limited, reaching, it is believed, only about 15% of the population. This is due to the general factors delineated above including a very limited number of MCH centers and trained personnel.
- Pakistan's environmental sanitation is forbidding with only about 15% of the urban population having access to basic sewerage facilities, and with the rural population almost entirely without facilities. Only about 30% of urban residents have potable water, with 0.5% of rural Pakistanis having potable water, thus leaving general water pollution and contamination in many areas of Pakistan perhaps the single most troublesome source of communicable diseases.
- Finally, government health data are very limited, at times unreliable and must be used with caution. The government planning office is aware of their data deficiencies and are receiving assistance in correcting this shortcoming. The data and observations supplied by the WHO and independent consultations and observers are valuable and often can be used in lieu of government data.

#### Some Observations on Assistance Strategy for the Pakistani Health Sector

The health sector in Pakistan has been deprived of human and material resources for such a long period, resulting in the debilitation of the health environment, that there is scarcely an area or a discipline in health in which the government does not require extensive assistance. The scope of such assistance can be gauged by simply reviewing the WHO program for Pakistan for 1976-77. Therein there is a wide variety of proposed aid from family planning to environmental health services covering such diverse disciplines as nutrition, health education and communicable disease prevention and control. It should be noted, however, that the quantity of funding for this wide range of projects is very limited and little progress can be anticipated in individual projects. UNICEF and consortium countries could be expected to supplement the WHO contribution in some important areas.

USAID assistance in FY 1975 in the health sector was focused on family planning including research into determinants of population growth and a substantial loan for malaria eradication. Indirectly, assistance was also offered in nutrition planning and research. USAID strategy envisaged future commodity and technical assistance in medicines, medical equipment and rural health, provided the government espoused and implemented a serious program of upward mobility in the health sector. As we have observed, the fifth five-year plan does, in fact, reorder resources into the health sector in most of the problem areas. If the government persists and sees to the implementation of their health sector plans, then the USAID might well wish to consider increasing its limited commodity and technical assistance in the health sector in FY 1976 and later. If so, we believe the USAID strategy might envisage focusing its increased assistance on the following project areas:

- Reorganization of the Ministry of Health and the provincial health departments so as to improve their planning and statistical functions;
- A substantially expanded program in environmental sanitation and hygiene with the objective of beginning to introduce potable water and modern sewage disposal in rural villages and the urban areas, both technical assistance and loan funding might be considered;

- A significantly expanded health education curriculum in the primary and secondary level of the public education system might also be considered;
- Finally, it would certainly be highly beneficial for the USAID to support the training of auxiliary health workers which are so desperately needed by the rural health services proposed in the fifth five-year plan.

All of this proposed or projected assistance by the USAID, consortium nations, the WHO or UNICEF will be of little consequence, of course, unless the government is able to implement its new health schemes. The government record in the health field, moreover, has been dismal to date. This is not to suggest that the Bhutto administration is unaware of this past dismal record or of the requirements necessary to promote the broad health scheme objectives set forth in the most recent government plan. The government certainly appears to have learned through its experience and is adjusting its programs to meet new exigencies. We remain skeptical, however, that these broad schemes will succeed unless the advice, technical assistance and commodities are accompanied by sociological changes among the Pakistani people encouraged by appropriate GOP leadership. Such changes must include a far greater concern for personal and collective hygiene, a new respect for maternal and child health care and nutritional needs, and a realization of the advantages to be obtained from western medicine.

A P P E N D I C E S



## APPENDIX I

### PAKISTAN: GEOGRAPHIC, CULTURAL AND HISTORIC ASPECTS<sup>1</sup>

#### Physical and Cultural Features

##### Geography

The Islamic Republic of Pakistan is contiguous to Iran and Afghanistan in the west and northwest, China to the northeast, and India to the east. The Arabian Sea completes its border to the south. Today, excluding the Pakistani-held parts of Jammu and Kashmir, Pakistan has an area of 307,374 square miles.

Geographically, Pakistan is situated at the western end of the India-Gangetic Plain, which is ensconced to the north by the great Himalayan mountain ranges and their supporting smaller mountains and foothills, and to the southwest by the Arabian Sea. Flowing into the Arabian Sea are the Indus River and its tributaries, which form the fertile and intensely cultivated Indus Valley. In terms of the whole Asian subcontinent, Pakistan occupies the northwestern part of the southern Asia subcontinent, and is logically divided into six natural regions: the northern mountains, the submontane plateau, the Indus Plain, Baluchistan Plateau, the western bordering mountains, and the deserts.

The northern mountains are comprised of the Himalayan and Trans-Himalayan mountains which occupy the very northern part of Pakistan. They are more than an average of 20,000 feet high and they influence the rainfall pattern in Pakistan by intercepting monsoon winds from the south. It is an inhospitable area, with a generally sparse population which lives by agriculture. Barley and various kinds of fruit constitute its chief crops, while sheep and goats are its principal animals.

Adjacent to but below these mountains is the submontane plateau composed of the Trans-Indus plain, the Potwar Plateau, the Salt Range and Sialkot district. The Trans-Indus plains are west of the Indus and are dotted by several oases, often irrigated, which provide fertile areas for the agriculture of the northwest Frontier Province. The Potwar Plateau lies east of the Indus in the Punjab at a height averaging 1,500 feet and covering an area of 5,000 square miles. With

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<sup>1</sup> In addition to those already recorded, the following sources were utilized in the preparation of Appendix I: Freeland Abbott. Islam and Pakistan. Ithaca: Cornell University Press, 1968; Zulfikar Ali Bhutto. The Myth of Independence. Karachi: Oxford University Press, 1969; W.N. Brown. United States and India, Pakistan, Bangladesh. Cambridge: Harvard University Press, 1972; Herbert Feldman. From Crisis to Crisis: Pakistan, 1962-1969. London: Oxford University Press, 1972; Irvin Isenberg (Ed.) The Nations of the Indian Subcontinent. New York: H.W. Wilson Co., 1974; G.F. Papanek. Pakistan's Development: Social Goals and Private Incentives. Cambridge: Harvard University Press, 1967; Rounaq Jahan. Pakistan: Failure in National Integration. New York: Columbia University Press, 1972; R.S. Wheeler. The Politics of Pakistan: A Constitutional Quest. Ithaca: Cornell University Press, 1970.

limited rainfall (twenty inches) it is a poor agricultural area. The Salt Range lies at the southern edge of the Potwar Plateau at about 2,000 feet and is an extremely arid region. Finally the Sialkot district is a narrow submontane region in the northeast, and is a rich agricultural area with moderate rainfall and good irrigation.

The Indus Plain covers an area of about 200,000 square miles and is the most productive agricultural area of Pakistan. It extends from the Potwar Plateau to the Arabian Sea. Although the rainfall is poor, extensive irrigation allows a prosperous agricultural production in most of the plain.

The Baluchistan Plateau is about 1,000 feet high in the southwestern part of Pakistan, separated from the Indus Plain by the Sulaiman and Kirthar ranges. It is generally an arid region, sparsely populated but highly irrigated, so as to render it productive for primitive agriculture and grazing of sheep and goats.

The western bordering mountains move south from the Hindu Kush. Rainfall is scarce and vegetation limited. The area is extremely poor and supports only the most minimum of primitive agriculture supplemented by grazing sheep.

The desert areas include parts of Sind and Cholistan northeast of Hyderabad. These desert areas are an extension of the Thar desert of western India.

#### Soil and Climate

The soil of Pakistan for the most part is dry, characteristic of a land having low and erratic rainfall. The soil of the Indus Plain, however, is alluvium and is productive, especially when properly irrigated.

Pakistan has a continental climate characterized by extreme variations of temperature that reach severe heights in the summer (126°F in parts of Sind). Winters, on the other hand, are cold with minimum mean temperatures about 40°F. The characteristics of the several regions in Pakistan are determined by variations in rainfall and irrigation, rather than by temperature, however. Thus, the country is highly arid except for the southern slopes of the Himalayas and the submontane areas, with a rainfall of thirty to thirty-five inches. The areas having about twenty inch average precipitation include the area northeast of Lahore, the Potwar Plateau and a part of the Indus Plain in the northeast. These areas obtain enough rainfall for dry cropping, i.e., farming without irrigation by taking measures to conserve water. South of this region or these areas, cultivation is confined mainly to rivertine strips until recent introduction of large-scale irrigation.

Natural vegetation is limited to wiry grass and small bushes with only a few scattered trees. There are, however, wooded mountainsides and some plantations with forest areas and orchards. Some dry condition-adapted plants exist in Baluchistan, while the Indus Plain is very fertile when irrigated. Wheat, cotton, and rice are the principal crops of the Indus Plain.

#### Language and Literacy

There is no single language which is common to all of Pakistan and the population is heterogeneous as far as language is concerned, although Urdu is the official language of Pakistan, along with English. The distribution of languages is as follows: Punjabi, 66%; Sindhi, 15%; Pushtu, 8%; Urdu, 8%; Baluchi, 2%; and, Brahmi, 1%. Urdu is the first language taught in most of the administrative areas of Pakistan in the public school system, except in Sind where

Sindhi is taught as the first language. Nevertheless, most educated Pakistanis learn to speak and write Urdu as their first language.

Literacy, reflecting the poor educational system, is very low. It is only about 19%.

### Religion

About 97% of the Pakistanis are Muslims. Most of these people belong to the Sunni sect, which is the major branch of Islam. There is also a still smaller sect of Ahmadis Muslims which does not regard Muhammad as the final prophet. In 1961, Hindus formed only 0.5% of the entire population. Christian Pakistanis constitute about 1.4% of the population.

## Evolution of the Indian Sub-Continent

### From the Aryans to the Moghuls

The earliest settlements of the Indian sub-continent have been unearthed in the Indus River Valley and tributaries. This Indus civilization emerged in the centuries prior to 2500 B.C. It appears to have shared relations with the Sumerian civilization of the Tigris-Euphrates Valley and employed copper tools and weapons. By 1500 B.C., however, it had been overwhelmed by the Aryans debouching from the north-northwest. The Aryans were a fair-skinned, mobile, iron-employing people who began the numerous invasions of the Indian sub-continent that continued foreign conquests of the sub-continent up to and including that of the British. It was the Aryans, with their dislike for the dark-skinned Indus people, who introduced the caste system with its profound implications for the history of the sub-continent.

During the course of the next millennium the center of Aryan civilization shifted to the Jamma and upper Ganges River valley, while aboriginal societies emerged in central and southern India. Similarly, during these 1,000-odd years the Hindu religion developed, influenced not only by the caste system of the Aryan conquerors, but by such philosophies as Jainism and Buddhism. Of these, Jainism, with its emphasis on rebirth, asceticism, and non-violence, was the most influential.

In 326 B.C., Alexander the Great renewed the pattern of invasion by taking the Punjab and creating therein a new Greek-Indo civilization. There followed several other migratory invasions of the Punjab and northern India during the several hundred years following the collapse of Alexander's empire. These included Parthians, Sakas and Kushans, all of whom were absorbed by the aboriginal Indian societies and from which emerged a powerful, Indian empire, the Gupta Empire. The Guptas were short-lived, however, being overwhelmed in turn by new invaders, the Gujars and the White Huns. With the collapse of the Gupta Empire and the absorption of the new invaders, there emerged in the seventh century A.D. not a new central government, but a feudal society dominated by the Rajput tribes.

This Indian feudal society endured until the 12th century A.D. when the Indus Valley was invaded by Turks. Like the advent of feudalism, the entrance of the Muslims into the Indian sub-continent in substantial numbers was also a benchmark in the history of this area. In this instance, the Muslims were not absorbed by the Indians but remained a thin, Muslim military aristocracy over the huge Hindu majority. Nevertheless, despite numerical weakness, the Muslim empire persisted and, although defeated by Tamerlane and his Mongols, emerged from this ordeal even stronger after Tamerlane's departure.

By the early 15th century, a new Muslim empire, the Moghul Empire under Babur and Akbar, was reestablished out of the destruction left by Tamerlane. This Indian Muslim empire achieved significant cultural and artistic contributions while successfully governing the feudal Rajput-Hindu majority in central and northern India and living in harmony with the Indian principalities of southern India. During this period it also achieved a significant commercial plant and economic success, spurred on by trade with the Europeans in spices and drugs. During the 16th and 17th centuries the Moghuls remained economically and politically powerful, but in the 18th century the empire began to weaken. It was finally crushed by the Persians and Afghans between 1740 and 1760.

### British India

Although it was the Portuguese who first brought European trade to the sub-continent, by the 17th century they had been ousted by the English and Dutch. Since the Dutch focused on the spice trade, the English, under the guise of the British East India Company, concentrated on the textile trade in India. By the early 18th century, as recorded above, the Moghul Empire had begun to disintegrate and the British merchants, assisted by English troops and the navy, began supporting individual Indian and Muslim princes, thereby hastening the Moghul collapse. Between 1740 and 1763, the French posed a serious challenge to the growing British supremacy in India, but could not overcome English sea power. Thus, at the end of the Seven Years' War, the French were also ejected from India and the British were unchallenged by any other European power on the sub-continent.

In the meantime, the Moghul Empire had disintegrated under the blows of the Persians and Afghans. The sub-continent was no more than a feudal entity comprised of numerous principalities and small enclaves led by petty tyrant chiefs, but, as a whole, weak and impotent. It merely remained for the British to take the sub-continent piece by piece. Beginning with Bengal and with a well disciplined, British-officered mixed Indian army, the British moved westward. By 1820 the British had overcome the power of all the independent princes and controlled all of the sub-continent east of the Sutlej River. Then, over the next two generations, after wars with Afghanistan they annexed the Sind, Baluchistan and the Punjab and brought the frontier to the Khyber Pass.

The British were as successful in administering the Indian sub-continent in the 19th century as they had been in conquering it, although the former required considerably more tact and patience. Generally, the British administrators followed the pattern of the Moghul Empire, adding to that pattern of Moghul administration British law and justice and bringing to it the Anglo-Saxon virtue of a pragmatic rather than an abstract approach to the sub-continent's problems. These problems were three in nature: (1) reestablishing order, (2) creating a system of law and judicial review, and (3) providing sound administration, both provincially and locally, so as to embrace and harmonize the Muslim and Indian cultures.

Order had broken down in the latter part of the 18th century with the collapse of the Moghul administration. The countryside was under pillage from roving bands of outlaws. By 1830, however, the army had crushed these bands and an efficient police force was in place to maintain order. As to the law, the British utilized the Moghul law, which was Muslim law based on the Koran, excised its barbaric features, and made it applicable to the old Moghul Empire, but took care to leave Hindu law in southern India where the Moghul Empire had not penetrated. A judicial hierarchy was organized to administer and interpret the law. Under this judicial review, Moghul and Indian law, with Anglo-Saxon contributions, was amalgamated gradually over the next century.

The administration of the sub-continent was accomplished with the same kind of pragmatism that characterized the development of the sub-continental legal system. The provinces of the old Moghul Empire were governed directly through a British administrator and staff, while the princely states, which constituted about two-fifths of the sub-continent, were left to the individual princes with whom the British made separate agreements. This was in keeping with the Moghul pattern. As to local administration, which meant primarily an equitable tax system, the British dealt directly with the individual villages or with individual peasants. But British agents did not interfere with local village administration except in legal or seditious matters.

Thus, during the 19th century the British reestablished peace in India, created a legal system, established continental and local administrations, and developed an equitable system of local taxation. The point should be emphasized that the British provided the security and the atmosphere for economic development in the sub-continent, but they did not interfere in that development with British planning. Rather, the British promoted a free economic life.

The British had inherited from the Moghuls, and they from the feudal society that preceded them, a simple subsistence economy based on self-contained and self-supporting villages. The trade within the sub-continent and with foreigners was a mere appendage to this subsistence economy, although it gave the East India Company substantial profits. Even so, Indian industry at this point in time (late 18th century) was limited to cottage and craft industries in textiles, pottery and jewelry. Sugar, indigo, silk, calico, gold and silver, saltpeter and tobacco were also traded within the sub-continent. The goods which the sub-continent produced for external trade consisted principally of textiles, for Europe, the Middle East and Indonesia. The sub-continent also exported limited quantities of indigo, rice, yarn and re-exported spices from Indonesia. The Moghuls and the princely states imported horses, tin, ivory, wines and carpets. The bulk of this trade was conducted by sea.

The Indian textile trade, however, was ruined during the latter part of the 18th and early 19th centuries by the Seven Years' War, the American Revolution and the Napoleonic Wars, and by the industrial revolution in Britain. Thereafter, in the remainder of the 19th and into the 20th centuries, economic conditions in the sub-continent underwent a radical transformation under the impetus of the Utilitarian free traders in Britain and enlightened English viceroys and administrators in India.

In 1813 the East India Company lost its monopoly in India, thereby opening the sub-continent to every English company. The central administration, along with its tax system to encourage agricultural production, now undertook to remove trade barriers among Indian states and provinces, to obtain rights of way for roads and railroad construction and to encourage investors to bring industry to India. In short, after the Napoleonic period, the British sought to assist the free trade movement on the sub-continent with private British capital.

Results began to appear in the latter part of the 19th century, especially after the great mutiny of 1857. Road building which had begun shortly after the Congress of Vienna, progressed steadily and continued well into the 20th century. The administration planned and financed a comprehensive rail system begun about 1860. With the opening up of the interior of the sub-continent, wheat, cotton, coal, iron and other minerals became items of export trade, and internal trade was revolutionized. External trade also accelerated with the opening of the Suez Canal in 1869. During the same period the British banks established branches in India and the sub-continent was then ready for the beginning of industrialization.

Although the British undertook the initiative in the industrialization process, the Indian capitalist began to associate himself therewith toward the last part of the 19th century. Indian capitalists formed "managing agencies" which served several purposes: entrepreneurs, capitalists,

managers, sales, production, and distribution. As a result Anglo-Indian enterprise focused on three areas: (1) plantation industries - tea, coffee, rubber, and tobacco; (2) large crop industries - cotton and jute - including the mills for processing the fibers in Bombay, Sholapur, Ahmedabad, and Kaupur; and, (3) heavy industries - coal, iron and steel in Bengal and Bihar.

After World War I, however, the period of free trade came to an end in the sub-continent. It was replaced by a planned economy under the central administration (see sections below). In 1923 a tariff board was established to protect the still sensitive Indian industries from foreign competition. We will examine the economy of the sub-continent in some detail below, especially Pakistan's economy. Suffice to note, however, that during this long period of the 19th and early 20th centuries, the sub-continent had produced, by 1927, 59,000 miles of first class roads and over 40,000 miles of track, and the Indian steel corporation, the Tatas, produced more than one million tons of steel by the beginning of World War II.

### Toward the Political Division of the Sub-Continent

It should be emphasized that the bulk of Muslim India only came under British influence a generation or so later than Hindu India. Thus, the Muslim movement toward what is sometimes called "The Anglo-Islamic synthesis," i.e., a union of the Muslim-Indian and English cultures, was retarded well behind that of Hindu India. It was also retarded due to educational inferiority, lack of industrial development, and remoteness. Furthermore, the Muslims resented British rule much less than did the Hindus and so were slow to promote Muslim independence. The Muslim independence movement gained its impetus from a fear of being ruled by the Hindus, who in the very latter part of the 19th century, began the difficult journey toward independence.

The first political divergence of major significance between the Muslims and Hindus in the course of the drive for independence from Britain came in 1867, when the Hindu nationalists agitated for the replacement of Urdu, the common language of both Hindus and Muslims, with Hindi. The Muslim leader, Sir Syed Ahmad Khan, concluded then that it would be impossible for the two religious factions to cooperate in promoting a unified, independent, sub-continent. Thus, when the Indian National Congress was formed in 1885, the Muslims did not join. Instead, in 1906, they created the All-India Muslim League to promote the political rights of Indian Muslims. In 1909, when the British conceded the principle of elections to the legislatures, the Muslim League demanded separate electorates based on religion. In 1913 the Muslim League formally adopted the goal of self-government for India within the framework of the British Empire. Although both the Congress and the League now supported independence, they could not agree on a formula for the protection of the economic and religious rights of Muslims.

As a result of the support rendered Britain during World War I by the Indians, together with Hindu agitation, in 1917 the British pledged Indian self-government within the Empire. There followed the Montague-Chelmsford reforms providing for local self-government but which proved highly frustrating both to the Hindus and Muslims. A decade of Hindu-Muslim truce and cooperation followed as they joined forces under Mohandas K. Gandhi to undertake political and economic agitation for independence. The 1920's saw frequent riots and incarcerations of Hindu and Muslim leaders but little progress toward independence. By the close of the decade, however, the Hindu-Muslim cooperation began to break down over the ancient problem of Muslim representation both in the national and provincial legislatures. The Hindus would not concede the Muslims adequate representation according to population, even in the provinces where the latter held a key majority.

At the meeting of the Muslim League in December 1930, accordingly, the call arose for a Muslim state comprised of the Punjab, North-West Frontier Province, Sind and Baluchistan. The name "Pakistan" was soon coined for the new state.<sup>2</sup> But the proposal attracted little support during the 1930's. Instead, the Muslims remained quiescent and participated in the Indian elections of 1937 for provincial assemblies in the new "Federation of India" sanctioned by the Government of India Act of 1935. The results were disastrous for the Muslims since the Hindus won enough votes to form governments in most of the provinces.

The Hindu Congress now claimed the right to speak solely for all Indians, Hindu and Muslims. This infuriated the Muslim leadership, such as Muhammad Ali Jinnah, and the Muslim League began to regain the strength it had lost since World War I. This was especially true as the Hindus began more openly to discriminate against the Muslims in the wake of their election victories. By the close of the decade and with World War II approaching, more of the Muslim leadership began to opt for a separate Pakistan rather than an Indian federation or an Indian confederacy.

### The Tri-Partite Division of British India

Soon after the advent of World War II, the Muslim League, on March 23, 1940, formally demanded (by the Pakistan Resolution) the partition and independence of the sub-continent. With this formal demand there began that process which, within a few years, led to the creation of the Pakistan nation when the sub-continent was partitioned in 1947. That journey through World War II and into the post-war era was too tedious for delineation here. The most important aspects of it, however, should be noted in passing.

Initially, the British opposed the creation of a separate Muslim state and sought instead to grant independence only to a unified sub-continent. This British policy was not entirely self-serving. It is true that the British originally hoped to retain influence with an independent India, to grant that independence over a number of years and to retain India within the Commonwealth. But British diplomats also believed that a divided sub-continent was not politically or economically viable, especially since virtually the whole civil service was Hindu rather than Muslim.

As for the Hindus, the concept of a divided sub-continent was unpalatable to them. Not only did Hindu leaders look forward toward a united sub-continent, which might dominate south-southeast Asia, but they anticipated dominating and harnessing the Muslims to bring their talents to the task for constructing a unified, powerful India.

From the moment in the thirties that independence became a possibility, the Muslim leadership, of course, opposed a union with the Hindus. Not only did they fear Hindu domination but the ancient cultural, religious and historical differences, as delineated previously, mitigated against union of the Muslims and Hindus. Not the least of these was the caste system which the Muslims abhorred.

During World War II, with the defeat of Britain on the Continent, events moved rapidly toward independence. British weakness and imminent threat of invasion by the Japanese prompted the British to make several proposals for increasing Hindu participation in an Indian government. But Gandhi, sensing the British weakness and growing desperation, rejected the British proposals and promoted civil disobedience. At the same time, Gandhi tried to convince Jinnah of the improbability of a Muslim national state, but Jinnah would not compromise. Jinnah's

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<sup>2</sup> P for Punjab, A for Afghania (North-West Frontier), K for Kashmir, S for Sind and TAN for Baluchistan.

obdurance stemmed from his knowledge that during World War II the Muslim masses had also been taken with the idea of a national Muslim state and were as eager for total independence as were the Hindus.

In May 1945, with the war in Europe terminated and with Britain exhausted, the final drive for independence began. In May, Viceroy Lord Wavell tried to organize an all-Indian political conference to organize an interim Indian government. But the conference collapsed on Hindu-Muslim intransigence. The provincial and central legislature elections of 1946 only strengthened the hand of both the ultra-nationalist Hindu Congress and the Muslim League. Then, in March 1946, the Attlee Government sent the Cripps Cabinet Mission to India to attempt to settle the constitutional issues between Hindu and Muslim attendant upon some form of independence for the sub-continent.<sup>3</sup> The Mission was urgent for strife and economic dislocation were rapidly increasing.

The Hindus presented a plan for a federal government and legislature with centralized authority in defense, foreign affairs, etc., with the provinces given authority for local conditions. Such a constitution would have given the Hindus firm control of India, since they would have possessed a heavy majority in the legislature and already controlled both the civil service and the armed forces. The Muslim League, on the other hand, demanded nothing less than an independent Pakistan, making this demand a formality on April 9, 1946. The Cabinet Mission rejected both proposals and set forth its own plan, providing for a complex union of Indian states and British provinces, but with safeguards to protect the Muslim culture and political identity. But both Hindus and Muslims rejected the Cabinet Mission plan and on June 29 the Cripps Mission returned to London a failure. It was apparent, however, that the Hindus under the leadership of Gandhi and Nehru intended to dominate Muslim India, and the Muslim League would have no part of it.

There followed an effort by the Hindu leaders to create an interim government, composed of an executive council and a constituent assembly, and to force the Muslims to join as a minority. In August new Muslim-Hindu rioting occurred in Calcutta, rendering intense bitterness between Hindu and Muslim. Through the efforts of Viceroy Lord Wavell and Jinnah, however, the Muslim League finally entered the interim government in October. But it was hardly an arrangement destined to produce either temporary cooperation or long-term solutions to sub-continent unity. From October 14, 1946, when the Muslims entered the interim government, onward, there was bitter friction, first over portfolios and then recriminations over the rioting in Bengal and elsewhere. The factions could not agree on the powers of the constituent assembly or the grouping of provinces. A conference in London in December comprised of Hindu and Muslim leaders proved to be useless and the constituent assembly met on December 9 amidst the bitterest recriminations.

The next few months witnessed the rapid acceleration of negotiating resulting in an inept plan of partition and the end of the British dream of a united Indian sub-continent as part of the British Commonwealth. With the collapse of the London Conference, the Attlee Government sent its most distinguished diplomat, Lord Mountbatten, to India in March as the new Viceroy, with instructions to transfer power to a unitary Indian Government by June 1, 1948. But he had already arrived too late to promote a unitary government, for on March 8, 1947, the Hindu Congress Party in a resolution, conceded to the Muslims their desire for a divided sub-continent and an independent Pakistan. Now leaders of both the Hindu Congress and the Muslim League merely sought to affect the partition as expeditiously as possible.

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<sup>3</sup> Also on the mission were Lord Patrick-Lawrence, Secretary of State for India, and Mr. A.V. Alexander, First Lord of the Admiralty.

By the end of April, Mounbatten had also accepted the fact that partition was inevitable and now merely sought to delay this until it could be accomplished peacefully, orderly, and with the new states as part of the Commonwealth. Events now moved very rapidly, however; order broke down, and in the chaos that resulted, many thousands of Hindus and Muslims died. Indeed, Mounbatten had prepared a general formula for partition whereby each province would decide its own association, but with the Punjab and Bengal to be divided between Hindu India and Muslim Pakistan. The issues remaining seemed to be whether or not the two new states would join the Commonwealth, the disposition of the armed forces, and the operating of the machinery of partition.

These issues were settled post haste and partition proceeded accordingly. The Indian Hindu leaders, Nehru and Menon, soon agreed to keep Hindu India in the Commonwealth if the British would advance the date of the transfer of power. The Muslim leaders always intended keeping Pakistan in the Commonwealth. It was also agreed that the armed forces would be divided along religious/political lines. On June 3, the Attlee Government announced the plan for partition of the Indian sub-continent based on the principle of self-determination and the date for the transfer of power was to be August 15, 1947, a year ahead of the original schedule. In effect, this meant the tripartite division of the sub-continent with 1,000 miles of Hindu India between the two parts of Muslim Pakistan. By the end of June both the Hindu Congress and the Muslim League had accepted the "British plan." Alas, however, the machinery of transfer was totally inadequate to the task at hand, for which the people of the sub-continent would pay a fearful price in blood.

#### The Emergence of Pakistan

The problems of affecting the partition of the sub-continent were, of course, enormous. But they were especially difficult, indeed staggering, for the new Pakistan nation. For Pakistan, they included creating a new political administration and establishing the administrative machinery of that new government. The provinces had to vote to join Pakistan or remain with India, and a new currency backed by suitable reserves had to be devised. Personnel to run the new administration had to be recruited and a new army created. In short, within scarcely more than two months, a new nation had to be created with the most elementary or no available resources.

As to affecting the partition of the sub continent, the principal tasks involved dividing the several resources between the two nascent states and holding self-determination elections in the several provinces to decide whither each province would go. The taking of these decisions constitute a complex history in itself as do the results. All that we may do here is to summarize briefly the nature of these results.

First, in this interim period, the vote was taken in the provinces to decide their affiliation. Thus, East Bengal, Sylhet, West Punjab, Sind, Baluchistan, and the North-West Frontier Province opted for union to create Pakistan. Next, after the British passed the Indian independence Act on July 19, 1947, which gave legal form to the creation of the two new states, the interim government was divided accordingly into two cabinets, each to prepare its successor state but, in theory, to cooperate in this process. Third, a Partition Council was created to provide the machinery of partition. Fourth, Ali Jinnah became Governor-General of the new Pakistan state, while Mounbatten remained Governor-General of the new Indian state. This arrangement was supposed to facilitate solving remaining problems once partition took place. Fifth, personnel of the former Government of India were divided between the two successor states. The division of financial assets and liabilities proved too difficult for the time allowed, and was put to the Arbitral Tribunal instead. Existing currency was to remain operative until October 1948, at which time Pakistan was to provide its own currency. An Armed Forces Reconstruction

Committee was also created to oversee the division of the India Army for each new state. Finally, a commission headed by Sir Cyril Radcliffe also determined the final partition boundaries for the two new states, including the disputed Bengal and Punjab boundaries. By August 15, 1947, although numerous issues were still outstanding, sufficient agreement had been achieved to affect the tripartite division of the sub-continent.

Pakistani politicians who assisted in bringing the new state of Pakistan into existence bitterly claim that the Viceroy Lord Mountbatten inflicted a grave injustice on the Muslims by agreeing to advance the partition date ahead by almost a year. The Pakistanis maintain that the Muslims were denied enough time to organize a new government and required services and that there was inadequate time to organize and affect the partition itself. There is much to warrant this criticism, of course. The chaotic manner in which thousands of Muslims and Hindus were killed in communal rioting is only one example attesting to the validity of the Pakistani critique.

Be that as it may, apart from the disasters attendant upon the rioting, Pakistan also conspicuously failed to obtain her share of the spoils of the partition. Upon partition, virtually all of the economic and financial strength was garnished by the new Indian state. The major ports and industrial centers were all located in India. The commercial houses and banks were also located in India. The industrial technicians and the skilled workers were Hindus for the most part. The currency was Indian and the Indian leaders failed to provide Pakistan with its share of the general treasury as agreed upon during the partition discussions. The details of the Pakistani economy are set forth in Appendix II. Suffice it to record here that partition left Pakistan in the position of a supplier of raw materials to the industrial producer, India.

Pakistani leaders claim to have seen in this process a deliberate Anglo-Indian policy whereby the "rump" Muslim provinces must one day return to India in order to survive economically, thereby insuring Hindu domination of the entire sub-continent. The Pakistani suspicions may have been conjectural, but it is clear that the affectation of partition only embittered and widened the already existing differences between Hindus and Muslims. To these differences were soon added the massacres in Punjab, the Junagadh-Hyderabad-Kashmir and Indus basin water disputes, and most recently, the brutally achieved secession of Bangladesh.

#### The New Pakistani Nation: From Jinnah to Bangladesh

Given the hard and painful realities of its birth, it is not surprising that this new nation so steeped in poverty of all kinds and confronted with the hostility of a more powerful neighbor, should experience severe economic and political vicissitudes. Apart from the foreign policy problems engendered by the hostility of India and recorded above, the new Pakistan state was confronted with severe, major internal problems. These included, in addition to creating a new government and the formalities of state, a vast refugee problem and the difficulty of integrating East and West Pakistan, separated physically by 1,000 miles. In all of these difficulties, the new state did enjoy one pervasive advantage: the enthusiasm of the Muslims to make the new state a success.

Fortunately also for the Muslims, they enjoyed the leadership of Mohammad Ali Jinnah, who had led the Muslims to independence, and his assistant, Liaquat Ali Khan. Ali Jinnah became Governor-General of the new dominion while Ali Khan became Prime Minister. Together, they helped organize the new Constituent Assembly which met in Karachi. Provincial administrations were soon organized and Jinnah and Ali Khan set about trying to solve the most critical problem, refugees.

Within a few months of partition, West Pakistan was overwhelmed with six million refugees and in turn lost about five million Sikhs and Hindus. Fortunately, there was much available land in West Pakistan, as well as new irrigation projects. Muslims who had served as day laborers to Sikhs in East Punjab now became land owners, all of which facilitated settling the refugee problem.

Uniting the two wings of Pakistan and factions within each wing proved to be an even more difficult problem. In West Pakistan, Punjabis, Pathans, Sindhis and Baluchis had an historical record of intransigence. Under the firm hand of Jinnah and Ali Khan, however, unity in West Pakistan was imposed. Then additional tragedy struck. In 1948 Jinnah died and Liaquat Ali Khan assumed his role of Governor-General and Pakistan's leader. Scarcely three years later, in the midst of the struggle for economic development and political unity, Ali Khan was assassinated. Deprived of their only two outstanding leaders in such a short period, some believed that the new state might disintegrate. But the nationalism, if not the political unity, imposed by the Jinnah-Khan leadership, at least in West Pakistan, proved durable.

East Pakistan, however, proved to be another matter. The eastern Muslims soon evidenced extreme jealousy of West Pakistan, where early economic progress offered a promise of a better life. The easterners, suffering economic privations, never developed the unity with the westerners required to make a united nation. In 1954 the eastern Muslims overthrew the Muslim League ministry. Thereafter factionalism and instability marked East Pakistan.

The deaths of Jinnah and Ali Khan, however, marked a turning point in the successful implementation of West Pakistan's national unity, democracy, and economic development, despite some periods of deep apprehension. Between Ali Khan's death in 1951 and the end of dominion status in 1956, the initial political unity, although not the national spirit, disintegrated. Deprived of a strong national leader, the Pakistanis divided among several weak leaders and new political parties sprang up. Economic and political leadership devolved upon a very small western educated elite who were at odds with the religious leaders and the rural masses. This elite desired a parliamentary type of government derived from the British model, while the rural masses opted for a strong leader from whom would flow paternal benefits.

Despite this internal wrangling, some political and economic progress was achieved during these years. A federal constitution was finally promulgated, making Pakistan an "Islamic Republic" and ending her dominion status, but retaining Commonwealth status. *A jure quo* between East and West Pakistan was also attained. At the same time, the economy, buttressed by large sales of jute and cotton abroad, allowed Pakistan to balance her budget and begin the process of industrialization in West Pakistan, a feat also accomplished only as a result of substantial foreign financial and technical assistance (see Appendix II).

The year 1956 appeared to mark both a high point in Pakistan's domestic affairs, as well as the beginning of several crises with India which continued until the calamitous year of 1971. Indeed, the foreign policy problems of Pakistan during and after 1956 contributed substantially to the Pakistani domestic instability which included desultory economic growth, social problems and constitutional crises.

Since the partition of 1947, relations with India had been very strained as a result of the partition itself (see above) and the problems resulting from partition including refugees, Kashmir and the Indus Basin. The treatment afforded the Muslim refugees, in itself, appeared to insure embittered relations with India for many years. Upon partition, the Pakistanis were also faced with the disposition of Kashmir, 77% of whose population was Muslim but which was ruled by the Hindu Maharajah. Negotiations failed and Indian troops occupied the eastern part of Kashmir in vicious Pakistan-Indian fighting. Although the UN managed to arrange a cease fire this dispute continued to simmer. Finally in September 1956 India and Pakistan fought a full-

scale three-week war over the issue which, however, was also indecisively concluded as a result of another UN armistice.

While the Kashmir problem remained unresolved along with the Indus Basin (see below), Pakistan's internal difficulties increased. Pakistan was troubled by severe internal social and economic problems. Her agriculture was still semi-feudal with a few thousand landlords owning over 20% of the agricultural land. There was also severe tension between the educated elite and the masses over the governing of Pakistan and the problems of economic development. With the burden of crisis with India, the democratic process, never deeply ingrained, broke down. In 1958 senior military officers seized power, suspended the new constitution, declared martial law and proclaimed the Pakistani general, Ayub Khan, as the new President.

During the sixties some progress toward solving social, economic, and foreign affairs problems was registered, despite continued undercurrents of discontent. The land reform of 1959, displacing the absentee landlord, was continued and greatly needed irrigation projects were begun. Similarly, industrialization and transportation, heavily subsidized with foreign aid, were initiated as was long-term economic planning. In foreign relations, the long-standing Indus Basin dispute was settled with India under the auspices of the IBRD (International Bank for Reconstruction and Development). Under this agreement, Pakistan was allocated control over the three western rivers of the basin, while India was given control over the three eastern rivers. The IBRD and other nations agreed to finance the construction in Pakistan of a whole system of dams, link canals and barrages to assist Pakistan's irrigation and flood control programs.

Despite the substantial progress recorded above, dissension continued to disturb Pakistan, exacerbated by continuing ill feelings with India. In 1962 another constitution had been drafted to replace that of 1956, but over two more years were required to hold new elections. These were held in January 1965, at which time General Ayub Khan was elected to a five-year term. But political dissatisfaction, influenced by government and political corruption and tension between East and West, undermined the implementation of the 1962 constitution. On March 25, 1969, Ayub Khan resigned and was replaced by General A.M. Yahya Khan as Chief Martial Law Administrator, who promptly suspended the 1962 constitution. Such was the course of Pakistan's democracy during the sixties.

#### Contemporary Pakistan: The Secession of Bangladesh and Beyond

The decade of the seventies began on a hopeful note, but soon degenerated into a disaster for Pakistan. In January 1970 martial law was lifted in part to permit political activity again, and in December elections were held for a new National Assembly, as well as for legislatures for the five provinces. The results of these elections were politically divisive. The Awami League, with Sheikh Mujibur Rahman as leader, won 160 out of 162 seats allotted East Pakistan in the National Assembly, while the PPP (Pakistan People's Party) under Zulfikar Ali Bhutto, won 81 of the 138 seats allotted West Pakistan. The two parties differed bitterly over the issue of political power to be afforded to the federal government and to the provinces.

After weeks of debate they were unable to resolve these issues. Accordingly, in March, the Pakistani Army banned the Awami League. Thereupon, on March 26, 1971, the leaders of the Awami League declared East Pakistan the "People's Republic of Bangladesh," fled to Calcutta, India, and established a government-in-exile. In the civil war that followed, the Pakistani Army in East Pakistan fought the East Pakistani Mukti Bohini (liberation forces) in a guerrilla war which wasted East Pakistan and drove some 9 million East Pakistanis (Bengalis) into India. The Indians, irritated at the arrival of the refugees and sensing an opportunity to deal Pakistan a severe defeat, intervened in the civil war in early December 1971.

By the middle of December the Pakistani Army in East Pakistan had been crushed and on December 16, 1971, about 91,000 troops, paramilitary and administrators, surrendered to the Indian Army. On the following day Pakistan accepted a cease fire in the West. Muslim Bangladesh now became an independent state, a ward and satellite of Hindu India. Subsequent negotiations between Pakistan and India permitted the return of Sheikh Mujibur Rahman to Bangladesh, the repatriation of the 91,000 West Pakistanis and the beginning of a normalization of relations between the truncated Pakistan and India through the agreement of August 28, 1973, among others.

The crisis and trauma of 1970-71 appears to have destroyed the traditional fabric of organized power and shaken the elements of that power which governed Pakistan since 1947. And from this shattered pre-Bangladesh power structure, Zulfikar Ali Bhutto has emerged as the new, dominant leader of Pakistan.

The disaster in East Pakistan forced the immediate resignation of General Yahya Khan and on December 20, 1971, Ali Bhutto was proclaimed Chief Martial Law Administrator. Ali Bhutto had already achieved primacy in West Pakistan politics, through the PPP, a primacy which he demonstrated in the elections of 1970. He created the PPP through an appeal to the urban and rural masses with promises of reforms and an improved standard of living. His opponents, potential and otherwise, were discredited not only by Ali Bhutto's campaign rhetoric, but finally by the defeat by India. Thus, the once powerful army officers and the feudal landlords found themselves displaced after December 1971.

During the course of Bhutto's administration, he has been confronted with grave political, economic and social problems which, at times, have threatened once again to undermine the young nation. Foremost, upon assuming office, was the depressed state of national morale engendered by the defeat by India and the secession of Bangladesh. The loss of Bangladesh also caused significant economic dislocations in an economy already under severe stress since 1968. Hard upon the loss of Bangladesh came the severe floods of 1973 and then the substantial inflation in oil, fertilizer and industrial goods in 1974-75. Underscoring the economic difficulties was the socioeconomic problem of a rampant population increase which threatens to inundate the slowly expanding Pakistan agricultural potential.

Ali Bhutto attacked these problems energetically and, thus far, with limited or no success in some cases, with modest achievement in others, but of course, with considerable criticism both within and outside of Pakistan. Politically, the Bhutto administration sought to reestablish government on a constitutional basis, but has been intolerant of political opposition. Thus, the National Assembly drafted a new constitution providing for a strong, central and parliamentary form of government which came into force on August 14, 1973. Constitutional political power lies with the prime minister, Ali Bhutto. At the same time, Ali Bhutto did not hesitate to dismiss provincial governments in 1973 with which he disagreed. Similarly, he has created a Federal Security Force (FSF) to crush any violent political opposition, such as student or worker strikes, and to supplement the Army and regular police. It is not surprising that current reports suggest continued undercurrents of political opposition.<sup>4</sup>

In foreign affairs the prime minister has attempted to reorient Pakistani foreign policy away from hostility toward India and toward association with the other Middle Eastern Muslim

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<sup>4</sup> See Background Notes: Pakistan. Washington, D.C.: Department of State, 1975, pp. 3-4, for a succinct review of the functioning of the current government of Pakistan under the 1973 constitution.

states. In this he has been relatively successful, achieving some agreement with India and obtaining the return of the Pakistani prisoners of war. He has also secured financial assistance from the Muslim states to the west which has helped Pakistan overcome the current world-wide inflation.

In economic matters Bhutto has attempted to cope with the dislocation caused by the loss of Bangladesh, meet the economic promises to workers and peasants made during the election campaign and reinstitute long-term economic development with foreign assistance. Pakistan's economic development is reviewed in some detail in Appendix II, but, as noted in Chapter I, Bhutto has succeeded in reinstituting economic development around a new fifth five-year plan, 1975-80, and has elicited substantial foreign economic assistance both for the period 1971-75 and for the current five-year plan.

In all of this, however, the prime minister appears to have been least successful in fulfilling his campaign promises to the masses. Their standard of living remains abysmally low and, as delineated in the prior text, in terms of health care, little of a concrete nature has been accomplished either in preventive medicine or treatment of existing illnesses. Most tragic, however, has been the ineffectiveness of family planning programs. Thus, with a minimal population increase estimated at between 3.5 and 4.2%, more than two million additional Pakistanis are added each year to burden the nation's still limited agricultural production. It is a spectre which haunts and threatens to undermine Bhutto's modest achievements since 1971.

## APPENDIX II

### THE PAKISTAN ECONOMY: AN HISTORICAL PERSPECTIVE

In the text and the attached Appendix I, it has been suggested that the partitioning of the sub-continent presented a greater trauma for the Muslims of Pakistan than the Hindus of India. One of the principal elements contributing to this adverse condition was the economic status of Pakistan at the time of partition. The British, we have observed, administered the sub-continent as a single economic unit but hardly as a unit of planned economic development. They sought instead, and in part at least, to promote the free trade movement on the sub-continent and thus to create a fertile field for British capital. They also administered the sub-continent with the dual pragmatic objectives of defence and the maintenance of law and order, prerequisites, of course, for the attraction of British investment capital.

As communications expanded the increasing flow of British investments promoted diverse industrialization which progressed along natural geographic patterns. The ports of Calcutta, Bombay and Madras were modernized, and rail and telegraph communication radiated from these ports into the interior. Gradually, during the latter part of the 19th and early 20th centuries, textile, iron and food processing industries emerged around or near these ports, or in some cases, in the interior of the sub-continent along the new railways (built for defense and security) in the vicinity of iron and coal resources. Similarly, agricultural production, especially the cash crops of cotton, jute and grains, were promoted in suitable areas of the sub-continent. Thus, the industrial development and much of the mining and agriculture occurred in the heart of the sub-continent or the vicinity of the large trading ports.

Thus, the future of the geopolitical structure of the sub-continent was predetermined, not only by the language and religious enclaves, but by the economic attributions. The future India was afforded all of the industrial areas, the best ports, the rail and telegraph communication systems, the better working mines, and much of the best agricultural land. The Hindus were also blessed with the entrepreneurs, managers and technicians to render these industries operable. The area which was to become Pakistan was thereby denied any industrial base or trained personnel to operate industries. Instead, the Muslims were relegated to being suppliers of raw materials, cotton, jute and wheat, to the industrial heartland of the sub-continent in India.

When the partition occurred, the area of Pakistan, accordingly, was left with virtually none of the wealth or the industrial accoutrements of power the British had helped create in India over 200 years. Upon partition, over 90% of the industry in the eastern part of the sub-continent was located around Calcutta. So also were virtually all of the banks, businesses, and educational institutions. It was anticipated that East Pakistan would continue to provide jute for the mills of Calcutta as during the British occupation. The situation was similarly depressing in the west, where the division of the spoils was entirely inequitable. Of the 394 cotton mills in the sub-continent in 1947, 380 went to India and 14 to West Pakistan, where cotton was the most important agricultural cash crop.

Other data available only some time after partition, i.e., for 1949-1950, again further illustrate the desperate condition of Pakistan in 1947. Over 60% of the total national income of 18.6 billion rupees in 1949-1950 derived from agriculture. The per capita income for 1949-

1950 was 237 rupees, slightly less than \$50 (it is unavailable for 1947-1948). About 87% of the people lived in rural villages (75% in the period 1970-1971), while about 16% were estimated to have been literate. Most of the peasants derived only a subsistence level of agriculture from the primitively cultivated and underdeveloped small Pakistan farms. Famine had occurred frequently since 1900 and it threatened again.

Both parts of Pakistan, moreover, were almost devoid of power for industrial and commercial development, although not of natural resources (see below). In Punjab, for example, West Punjab was supplied with electricity from the Maudí Hydroelectric Works in East Punjab but with partition, this source could no longer be relied upon. Thus, without this source, the total installed capacity for West Pakistan in 1947 was 75,028 Kw and 15,610 Kw in East Pakistan. Although a geological survey of the sub-continent had been undertaken, it was very superficial, especially regarding the Muslim areas, with the result that in 1947 the government of Pakistan had no certain knowledge of Pakistan's mineral resources.

Such were the economic conditions upon which Pakistan began its national life, conditions dictated by domestic historical factors as well as the British concern for imperial security, free trade and investment, and the vagaries of governing a complex sub-continent. In 1947, therefore, the Pakistanis were confronted with securing virtually all of the basic institutions and enterprises in agriculture, manufacturing, power, transportation, communications and finance to make Pakistan an economically viable nation.

## Pakistan' Natural Resources

### Mineral Resources

Delineation of Pakistani mineral resources was only undertaken in earnest a few years ago which still leaves much to be determined. Nevertheless, a number of mineral resources have been identified. It is estimated, for example, that Pakistan has about 400,000,000 metric tons of coal reserves although this coal is generally of poor quality. There are also about 520,000,000 metric tons of poor quality iron ore. Pakistan also has enormous reserves of limestone and moderate quantities of other minerals including chromite, barite, antimony, aragonite, gypsum, rock salt and marble.

Pakistan also has small quantities of oil and large amounts of natural gas. It is estimated that Pakistan has about 16,000,000,000 cubic feet of natural gas.

### Water Resources

At the time of partition, Pakistan was poorly endowed with hydroelectric power derived from water resources but, due to the topography and river systems, the country had a considerable hydroelectric potential which currently is being exploited. The government has been constructing new dams and hydroelectric stations along the Jhelum and Indus Rivers. In the early seventies total electric generating capacity was about 1,900,000 kilowatts but the new construction will raise this to over 5,000,000 kilowatts by 1980.

### Land, Forests and Fisheries

Of the total land area of Pakistan, 199,000,000 acres, only about 25%, was under cultivation in the early seventies. This was due in large measure to socioeconomic factors, but also to the lack of water and the salinity of the land. To counteract this problem the government

launched programs in the fifties to irrigate millions of new acres and to pump millions of additional acres in order to drain them of salt water and revitalize them with fresh water. As is recorded below, this has helped Pakistan's "green revolution" in the last two decades.

Forest resources are very limited in Pakistan due to the very dry climate and forest products contribute little to the GNP. Fisheries, on the other hand, offer the Pakistanis new economic opportunities. The fishing industry has been expanding each year for the past decade. In 1969, for example, the total catch amounted to 180,000 tons.

### Major Components of the Pakistan Economy

#### Agriculture

In the early seventies (1971-72) agriculture, forestry and fishing accounted for about 41% of the GDP. The agriculture sector showed substantial growth in the sixties, averaging 4% between 1960-65 and 6% between 1965-70. This sector provides employment to about 65% or more of the official labor force. Still, only about 25% of Pakistan's total land area is under cultivation. Government legislation on land reform has dealt, in part at least, with the problem of absentee landlords and small, unproductive holdings through maximum and minimum area limits. As a result of this reform and even more importantly, irrigation, heavy fertilization and foreign technical assistance, the Pakistan agricultural sector has shown impressive production. In 1970 Pakistan produced 11,000,000 metric tons of food crops, the majority of which were wheat and rice. By 1972 the "green revolution" was in full operation.

#### Mining and Manufacturing

Mining accounted for only about 1% of the Pakistan GDP by 1970. Nevertheless, as manufacturing increases, mining is expected to become an increasingly important component of the economy. Thus, natural gas production has risen from 26,000,000 cubic feet in 1959 to 115,000,000 cubic feet in 1970. Coal production reached 1,000,000 tons in 1970 while limestone (for cement) has doubled to 1,700,000 tons annually.

As recorded above, upon partition in 1947, Pakistan was left virtually without any manufacturing capacity. But by 1970, the manufacturing sector accounted for 17% of the GDP, compared with 12.5% in 1960 and under 1% in 1947. Manufacturing employs about 10% of the work force and this sector has been expanding at about 9% a year, principally due to growth in large-scale industries.<sup>1</sup>

#### Transportation and Communications

The railroad was the principal means of transportation in Pakistan until the past decade when it was displaced by bus and truck. Road transport now accounts for about two-thirds of total passenger miles and one-half of total freight. In 1970 there were about 12,700 miles of paved roads and more than 12,000 miles of unpaved roads. The principal arterial road runs from Karachi to Peshawar via Lahore and Rawalpindi. The total railroad route mileage in Pakistan is 5,300 miles. Pakistan International Airlines provides service to

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<sup>1</sup> Pakistan's Key Economic Indicators, June, 1974, Vol. 8, No. 6, Karachi: Ministry of Finance, Government of Pakistan, 1974, pp. 27-30, Tables 1-3. See also Tables 1-3 below.

Europe, the Near and Middle East, Africa, the Far East and China. Pakistan also had shipping of about 739,000 tons and 131 ships in 1972.

Communications are still somewhat limited with 8,000 government post offices in 1970 and only 207,000 telephones in 1971. A high capacity microwave communication system linking Pakistan with the middle East and London is also available.

#### Electric and Other Power Sources

In a prior reference, it was noted that despite Pakistan's poor rainfall and limited endowment with water resources, the government nevertheless has sought to harness the great river system in its northern areas both for irrigation and power. The largest hydroelectric plant in the early seventies was located at the Mangla Dam on the Jhelum River in Azad Kashmir which was then producing 650,000 kilowatts. This was to be raised to 3,000,000 kilowatts by 1980. Work on a much larger dam, the Tarbela Dam, on the Indus River, was initiated in 1968 and is expected to be completed in 1976 or early 1977. The power plant at Tarbela will have a final capacity of 2,100,000 kilowatts.

Most of Pakistan's power needs, nevertheless, are currently met by coal-burning thermal plants. Some of the newer ones use some of Pakistan's abundant natural gas. The Pakistanis are also experimenting with nuclear power and have constructed a 137,000 kilowatt nuclear power plant outside Karachi. As recorded above, in 1972 Pakistan had about 1,900,000 kilowatt capacity but expect that level to exceed 5,000,000 kilowatts by 1980.

#### Rural Infrastructure, Housing and Urban Development

It is estimated that only about 10% of Pakistan's villages (approximately 43,000 total in which about 75% of the population resides) have any electrical power. This lack of electrical power represents a severe deterrent to improving the quality of life for the rural Pakistani as well as providing power for rural agro-industries.

It is also a severe deterrent toward improving the deplorable rural housing prevalent in almost all Pakistan villages. Although it is hardly the principal factor, the lack of rural electric power hinders the creation of desperately needed sanitary water supply and sewage disposal. These deficiencies, of course, are prime culprits in the widespread gastrointestinal and other rural diseases.

Finally, there is a desperate lack of serviceable roads in rural Pakistan. It has been estimated that about half of Pakistan's rural population live three miles or more from an all-weather road. Not only does this condition render commercial activities hazardous, but virtually isolates these people during the rainy season. It has been estimated that Pakistan needs at least 240,000 miles of permanent roads, 125,000 of which should be farm-to-market roads. To date, only 35,000 miles of farm-to-market roads exist, most of which are in poor condition. Road construction plans of the Pakistani government are currently inadequate.

Urban development, that is, housing, potable water and adequate sewage, are totally inadequate even in the major cities, as suggested in the attached text. To date, only about 30% of urban dwellers have potable water, while basic sewage disposal is available to only about 15% of the urban population. Even if the current five-year plan is completed (in 1980), less than 50% of the urban residents will have potable water and sewage facilities.

### Banking, Commerce and the Free Enterprise System

Pakistan has available an operable system of financial services, the centerpiece of which is the State Bank of Pakistan, which has control over the whole banking sector. The State Bank acts as banker to the central and provincial governments and administers official monetary and credit policies including exchange controls. It has sole currency issuing rights and has custody of the country's gold and foreign exchange reserves.

There are also four institutions that provide medium- and long-term credit for industrial and agricultural purposes: PICI (Pakistan Industrial Credit and Investment Corporation), IDBP (Industrial Development Bank of Pakistan), ADBP (Agricultural Development Bank of Pakistan), and HBFC (House Building Finance Corporation).

The above suggests that the central government has traditionally supported a system of free enterprise and has encouraged private domestic and foreign capital investment within the framework of development plans. In short, since 1947 Pakistan has had a "mixed" economy, but with the government taking a decidedly stronger hand since the disaster of 1971. Between 1947 and 1971 private enterprise flourished in manufacturing, finance, retail and agricultural sectors, and except in agriculture, which has special circumstances described elsewhere, power within these sectors has been concentrated in a small number of family cartels. This concentration of economic power has been a source of social and political friction, however, as the workers increasingly resented these financial Moghuls. The Bhutto administration, as delineated below, sought to redress the balance by nationalizing thirty-one of the largest manufacturing firms since 1972 and by placing new controls on such key industries as iron and steel, chemicals, cement and fertilizer.

In any event, since 1947, the Pakistani government has consistently encouraged both domestic and foreign investment in Pakistan industry. This encouragement has taken the form of the above investment institutions as well as investment incentive schemes including tax holidays, long-term credit and repatriation guarantees for capital and profits. By 1970 these incentives had drawn about \$600,000,000 in investments from the U.K., the U.S., Germany and Japan. Only in 1973-74, in the face of excessive inflation, has the Bhutto administration altered this pro-investment policy and sought to restrain private investment as a means to control inflation (see the following section for a review of the factors controlling Pakistan's contemporary economic performance).

### Labor and Farmers in Pakistan

In 1970 it was estimated that total union membership in both parts of Pakistan was only 750,000 out of an estimated labor force of 50,000,000. This organized labor force comprised about 1,000 registered unions, most of them organized in individual establishments. Nationwide unions based on a common craft or industry are very few. As one might expect, such limited, weak organization, together with vast unemployment, has negated the bargaining power of these unions. As a result, the laborers have turned increasingly to militant political action and not without results. The Bhutto administration has increased wages during the past three years to try to keep the industrial workers abreast of inflation.

About 50 million of Pakistan's 70 million plus inhabitants live in rural areas and are directly or indirectly dependent upon agriculture for a livelihood. Approximately 55% of the total labor force is employed directly in crop and livestock production and about 25% in marketing and processing of agricultural products and supply of agricultural services. Moreover, agriculture is the principal foreign exchange earner, until the present time at least, accounting for about three fourths of the total value of exports.

Despite the key role played by agriculture in the Pakistan economy, the lot of the farmer-peasant is a difficult one. The system of land ownership and cultivation has evolved over many centuries and still retains the flavor of feudal relationships.

In 1960 the total number of farms numbered approximately 4.9 million, with a total farm area of 48.9 million acres; 75% of this farm area was cultivated. The average size of the farm was ten acres, while 8% of the farms were fifty acres or more, 15% were twenty-five to fifty acres, and 77% were less than twelve and one-half acres. About 38% of the farms were operated by owners, while 62% were operated by tenants.

The life of the Pakistani farmer whether owner or tenant is very difficult. He operates with primitive tools, suffers from a lack of credit and fertilizer, and is dependent to a large extent on irrigation to survive. Much of his acreage is subject to high salinity and good water management has not been available. He and his family live in substandard housing without potable water and sewage disposal nor, as delineated in the text, does the family have nearly adequate health care.

The Bhutto administration has sought to improve the status of Pakistani farmers so as to increase vitally needed food production and cash crops for foreign trade. It has sought to provide better credit (through the National Credit Consultative Council) and to give the farmers expertise through farm extension services. It has also sought, through foreign assistance, to provide more fertilizer, better water management and irrigation, and hybrid and/or more productive seeds. Finally, in 1972, it introduced a new land distribution law seeking to increase the number of farm owners, decrease tenancy, and make more equitable the owner-tenant relationship. This land reform, together with the other technical assistance, including rural infrastructure, is reordering the farmer-tenant life, but much too slowly to satisfy large numbers of these disadvantaged Pakistanis. It is not surprising then that general production has hardly kept pace with test cases showing attainable production under certain conditions in Pakistan. Moreover, since the introduction of the fourth five-year plan in 1970, agricultural production, due to a variety of reasons including poor weather and inefficient use of water, has increased only 0.5% annually as compared to 5.0% during the sixties.

#### Prices, Foreign Trade and the Balance of Payments

Pakistan was severely tried by the worldwide inflation of 1972-75. The percent of increase in wholesale prices in Pakistan between 1970 and 1971, for example, was 5.6%. But between 1972 and 1973 and 1973 and 1974 it was 24.3% and 17.2%, respectively.<sup>2</sup> The result of this inflation was to increase greatly short-term investment rates, reduce bank deposits, force the government to tighten all credit, and to limit the growth of money supply to about 14% annually. Prospects for 1975 and 1976 may be somewhat better, as the wholesale price index may be moderating although it is still too early to render a definitive judgment.

Pakistan's trading position has also deteriorated along with its price stability. According to data utilized by the USAID, in current prices, imports have increased from \$757,000,000 in 1971 to \$2,000,000,000 for 1975.<sup>3</sup> This same data revealed exports, in current prices,

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<sup>2</sup> See Pakistan's Key Economic Indicators, *op. cit.*, pp. 9-10, and Tables 4 and 5 below; see also DAP, *op. cit.*, pp. 14-15; still another highly respected source has indicated that in FY 1974, domestic wholesale prices increased by 27.4% and in FY 1975 wholesale prices increased by 26.1%. This source also reported that the rate of inflation slowed considerably in early FY 76 and the inflation rate is expected to be no more than 10% for all of FY 76.

increased from \$682,000,000 in 1971 to \$1,300,000,000 in 1975. The data resulted in a trade deficit of \$75,000,000 in 1971 which grew to \$700,000,000 in 1975 in current prices. Official Pakistan trade data also record sharp deficits in rupees for 1973-74. Tables cited below, derived from the GOP's Key Economic Indicators, show a deficit of almost 2 billion rupees in foreign trade between May 1973 and May 1974, inclusive.<sup>4</sup>

In order to redress its deteriorated balance of payments position, Pakistan will have to increase its export earnings from cotton, wheat, and other commodities. New exports will also be required to recover its share of world trade. It has become clear, however, that the GOP is relying heavily on foreign aid to help redress the balance during its current five-year plan.

Table 1: QUANTUM INDEX NUMBERS OF MANUFACTURING\*  
(1964-65 = 100)

Quarter	Manufacturing (overall)	S E L E C T E D I T E M S			Vegetable Products
		Cotton cloth	Cement	Cigarettes	
Jan.-May. 1972	174.6	99.4	145.0	162.8	202.7
April-June 1972	145.3	97.7	181.1	181.7	178.3
July-Sept. 1972	135.2	99.0	165.4	190.7	183.7
Oct.-Dec. 1972	170.8	93.6	153.1	176.5	219.7
Jan.-Mar. 1973	203.5	102.6	163.9	192.6	209.3
April-June 1973	166.3	99.3	213.0	212.6	207.0
July-Sept. 1973	146.5	100.5	162.2	189.1	180.5
Oct.-Dec. 1973	185.6	98.9	164.1	183.1	277.6

\* Pakistan's Key Economic Indicators, p. 28.

#### Recent Performance and Continuing Problems of the Pakistan Economy

The performance of the Pakistan economy, as suggested in the appended text, is most conveniently measured by reference to its several five-year development plans. The first plan, 1955-60, which only became operative in 1957, was hardly a statistical success, but did provide Pakistan with the economic cohesion to survive a very critical historical period. The emphasis in the first plan was on capital accumulation with which the GOP anticipated financing the infant industries. No effort was made to redistribute income to equalize standards of living nor to improve the quality of life of the urban or rural masses. During this period both large- and small-scale industry grew rapidly and industries' share of the GNP increased from zero to perhaps 5 or 6%. Simultaneously, however, agriculture, the most important sector of the GNP, grew well below the rate of population increase and thus the real per capita GNP declined until 1960.

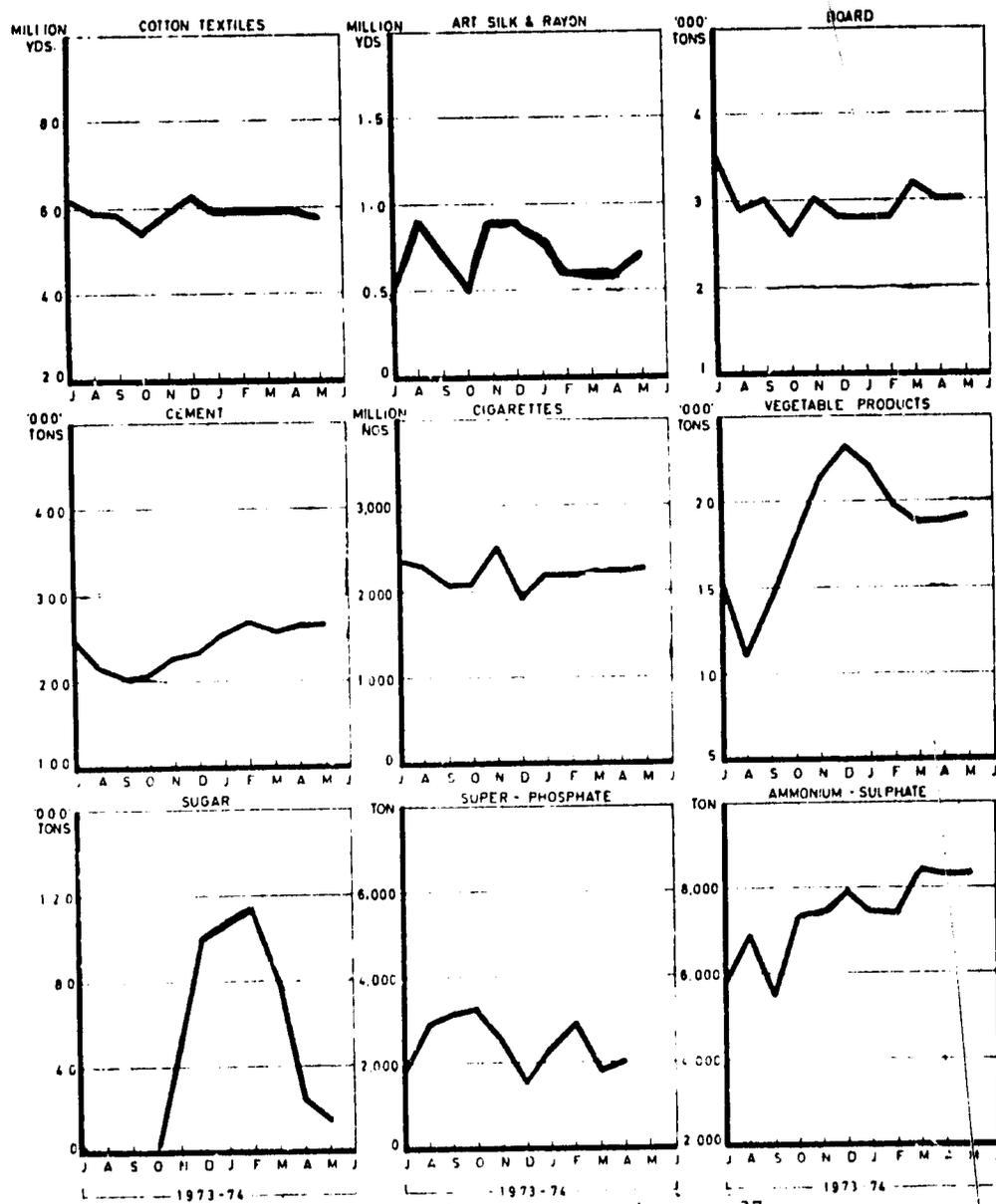
<sup>4</sup> See Pakistan's Key Economic Indicators, *op. cit.*, pp. 1-2 and Tables 6-8 below. Unpublished sources project a trade deficit of \$1,035,000,000 in 1976 and \$1,120,000,000 in 1977.

Table 2: PRODUCTION OF SELECTED MANUFACTURED ITEMS \*

Month	Cotton textiles Million yards	Art silk & rayon Million yards	Board '000 tons	Cement '000 tons	Cigarettes Million Nos.	Vegetable products '000 Tons	Sugar '000 Tons	Super-phosphate Tons	Ammonium sulphate Tons
<u>1973</u>									
May	59.0	0.6	2.7	284	2,689	15.0	8.1	4,685	6,185
June	59.0	0.6	3.0	282	2,573	15.9	12.4	4,215	5,234
July	62.0	0.5	3.6	245	2,375	15.3	1.9	1,747	5,752
Aug.	58.0	0.9	2.9	214	2,306	11.0	--	2,906	6,912
Sept.	58.0	0.7	3.0	201	2,083	14.3	--	3,150	5,500
Oct.	54.1	0.5	2.6	208	2,097	17.8	1.7	3,226	7,371
Nov.	59.4	0.9	3.0	227	2,509	21.4	53.9	2,565	7,419
Dec.	63.2	0.9	2.8	233	1,941	23.3	100.0	1,559	7,908
<u>1974</u>									
128 Jan.	58.7	0.8	2.8	254	2,208	22.1	106.7	2,363	7,459
Feb.	58.7	0.9	2.8	268	2,219	19.7	112.7	2,937	7,409
Mar.	57.8	0.6	3.2	258	2,246	18.6	77.1	1,826	8,418
Apr.	54.7	0.6	3.0	263	2,248	18.7	25.4	2,012	8,517
May	58.0	0.7	3.0	265	2,278	19.4	14.3	--	8,550

\* Source: Pakistan's Key Economic Indicators, op. cit., p. 28.

Table 3: PRODUCTION OF SELECTED MANUFACTURED ITEMS\*



Source: Pakistan's Key Economic Indicators, *op. cit.*, p. 27.

Table 4: INDEX NUMBERS OF WHOLESALE PRICES BY GROUPS  
(1959-60 = 100)

Month	General	Food	Raw Materials	Fuel, lighting & lubricants	Manufacturing
<u>1973</u>					
May	198.2	208.6	185.1	196.1	180.9
June	203.2	217.2	186.3	198.1	179.8
July	208.8	225.6	191.3	198.7	179.4
August	215.1	234.7	195.2	198.7	180.8
September	227.9	250.3	210.6	199.0	186.4
October	229.4	250.6	202.3	201.3	197.6
November	231.2	250.4	197.5	212.5	208.3
December	232.3	244.4	209.9	226.0	209.2
<u>1974</u>					
January	233.3	244.0	214.2	251.9	216.3
February	227.8	239.6	201.8	252.5	212.1
March	224.1	233.6	204.1	270.3	211.5
April	228.8	235.8	201.9	270.3	223.7
May	232.2	239.9	208.0	270.3	224.0

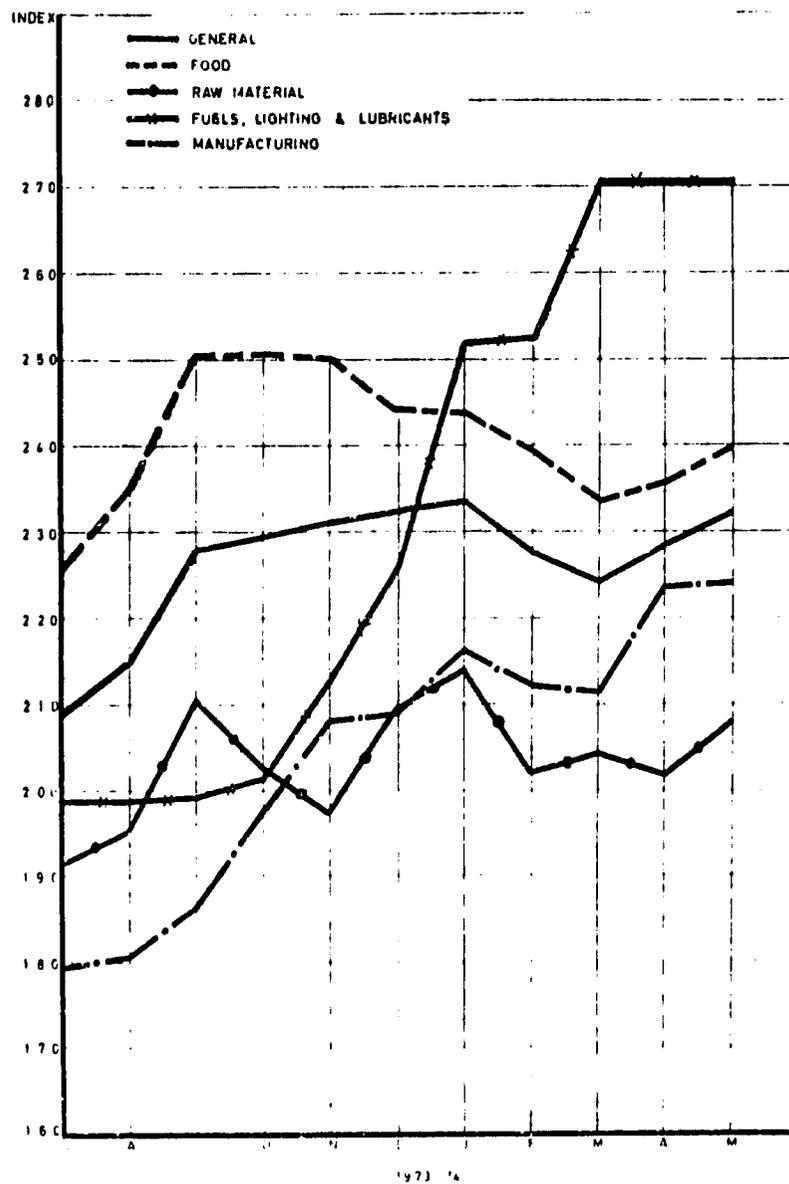
Source: Pakistan's Key Economic Indicators, *op. cit.*, p. 10.

But the experience gained between 1955-60 proved to be very valuable during the course of the second five-year plan, 1960-65. At last agriculture, fed by new investment in fertilizer, seed, machinery and irrigation, and helped by the international aid consortium, increased substantially so as to help raise the annual increase in per capita GNP to 3% between 1960-65. The GDP grew at an annual rate of 6.8% while the GNP grew by 5.5%. This was based on an annual growth of the agricultural sector by 5.0%, while the manufacturing sector expanded by 10% annually and the foreign trade balance was also much improved.

The third five-year plan, 1965-70, was encumbered almost before it began by the war with India and its aftermath. This plan was to be the first step in a twenty-year plan which was to quadruple the GNP by 1985. Instead, the GOP felt obliged to transfer substantial funding to defense from industry and agriculture. Nevertheless, despite this and political and social unrest, the third five-year plan did record significant growth both in agriculture and industry. Agriculture continued to grow at a rate of about 5% of GDP, while industry progressed at 10% and overall GDP growth averaged about 6.0% per annum. New varieties of high-yield seed, tubewell irrigation, and high growth export-oriented industry accounted for this good record.

The fourth five-year plan, 1970-75, suffered severe disruption from its inception, however. Before it could be implemented, the civil strife of Bangladesh and then the defeat at the hands of India accompanied by the loss of Bangladesh undermined the implementation of the plan. This apparent disaster was followed in 1973 by severe floods and in 1974 by a drought accompanied by substantial increases in the price of petroleum and other imports. Under the leadership of Ali Bhutto, however, the plan was slowly implemented but only on an annual basis (The Annual Development Plan). The farm and manufactured products, formerly shipped to East Pakistan, have been exported to world markets bringing in significantly increased revenues. Nevertheless, during 1974

Table 5: INDEX NUMBERS OF WHOLESALE PRICES BY GROUPS  
(1959-60 = 100)



Source: Pakistan's Key Economic Indicators, *op. cit.*, p. 9.

Table 6: TOTAL FOREIGN TRADE

		(million rupees)			
Month		Imports	Exports	Re-exports	Visible balance of trade
<u>1973</u>	May	800.2	1,081.9	2.4	(+) 284.1
	June	687.2	824.6	3.3	(+) 140.7
	July	737.7	467.7	6.9	(-) 265.1
	August	1,036.9	804.9	1.3	(+) 230.7
	September	973.0	650.2	2.2	(-) 320.6
	October	734.0	547.7	14.3	(-) 172.0
	November	847.9	995.8	8.4	(+) 156.3
	December	999.5	859.6	0.5	(-) 159.4
<u>1974</u>	January	1,251.0	673.4	1.0	(-) 576.6
	February	1,098.0	601.9	4.5	(-) 491.6
	March	1,072.8	691.1	1.5	(-) 380.2
	April	1,195.0	874.1	19.6	(-) 301.3
	May	1,697.3	1,817.1	3.4	(-) 123.2

Source: Pakistan's Key Economic Indicators, *op. cit.*, p.

and 1975 the decline in the rate of savings continued, the high inflation showed only the most tenuous signs of abating, and there was an increase in the balance of payments current account deficit from \$150 million in FY 1973 to \$1.2 billion in FY 1975.

Clearly, the military, political, and natural disasters occurring during the fourth plan exacerbated the economic problems tormenting Pakistan. During the course of the fourth five-year plan, then, the following basic economic problems were evident: (1) slow macroeconomic growth; (2) inequalities in income distribution; (3) inadequate revenues due to incompetent tax policies; (4) precipitous decline in savings; (5) a staggering national debt; and, (6) deterioration of the balance of payments. Available data including investment rates, savings and prices between 1970 and 1974 suggest the extent of these problems.<sup>5</sup>

Gross investment in FY 1965, for example, was 21.4% of the GDP, while in FY 1973 it was only 14.2%. Domestic savings were 14% of GDP in 1965 but only 6.0% of GDP in 1974. Inflation, too, constitutes one of Pakistan's most pressing problems. The percentage of increase of wholesale prices in May 1974 over May 1973 was 17.2%. In FY 1975 Pakistan's debt outstanding totalled \$6.6 billion or over 50% of GDP. Finally, due to these factors and a continuing very high population growth rate, per capita GDP hardly increased during the fourth plan.

<sup>5</sup> See DWP, *op. cit.*, p. 13 and tables derived from Pakistan's Key Economic Indicators recorded above. Some of these data derived from other unpublished sources.

Table 7: IMPORTS BY SELECTED COMMODITY GROUPS

Month	Machinery & transport equipments	Manufactured goods classi- fied mainly by material	Food & live animals	Chemicals	Minerals, fuels, lubricants & related material	Animal & vegetable oils and fats
<u>1973</u>						
May	124.0	138.3	166.7	122.5	122.8	30.2
June	152.6	169.4	79.8	121.6	52.0	9.9
July	145.7	156.9	82.6	178.7	75.5	31.1
Aug.	235.6	138.6	269.0	187.7	33.9	96.7
Sept.	132.4	177.8	96.2	318.6	74.7	84.2
Oct.	148.3	132.2	49.1	154.4	79.5	105.8
Nov.	211.6	158.5	158.2	110.5	86.4	24.6
Dec.	196.0	210.8	254.8	152.5	72.0	24.2
<u>1974</u>						
Jan.	207.5	227.2	429.5	162.2	43.5	62.7
Feb.	179.7	180.4	276.5	183.7	91.5	14.5
Mar.	189.0	250.9	44.9	143.6	315.2	8.4
Apr.	195.1	260.1	158.4	132.9	231.9	143.6
May	331.5	299.2	441.4	199.3	142.6	169.2

Source: Pakistan's Key Economic Indicators, *op. cit.*, p. 2.

Given these severe economic problems, the government has had to rely more and more in recent years on foreign assistance for its continued economic development. It is estimated, for example, that up to 85% of the Pakistan development budget in FY 1975 derived from foreign capital inflows. In order to promote long-term development, economists believe the government must accomplish several basic reforms during the course of the fifth five-year plan. These include accelerating agricultural production, increasing domestic resource mobilization (more savings and better tax collections) and expanding exports, all of which would reduce dependence on foreign capital. The government must also improve its efficiency and urge private industry to do the same. All of these represent herculean tasks, however, especially in view of the vast unemployment and explosive population. The health sector, then, takes on added significance for it is clear that only through greatly improved health services and health education are the Pakistani peasants to be convinced that their children will survive beyond five years and that it is to their advantage to curb their excessive birth rate.

#### The Fifth Five-Year Plan

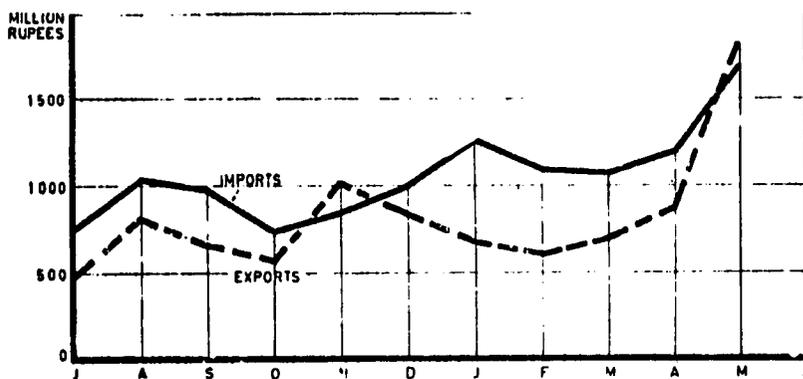
Despite the myriad problems impeding economic progress delineated above, the current five-year plan covering the period July 1, 1975, to June 30, 1980, is the most progressive and potentially beneficial to the Pakistani people of all the prior plans. Although the government plans call for ambitious investment in public enterprises for the first time, the government appears

to be allocating significant funding to the programs of upward mobility for the people, i.e., programs for education, health care, population planning, and nutrition.

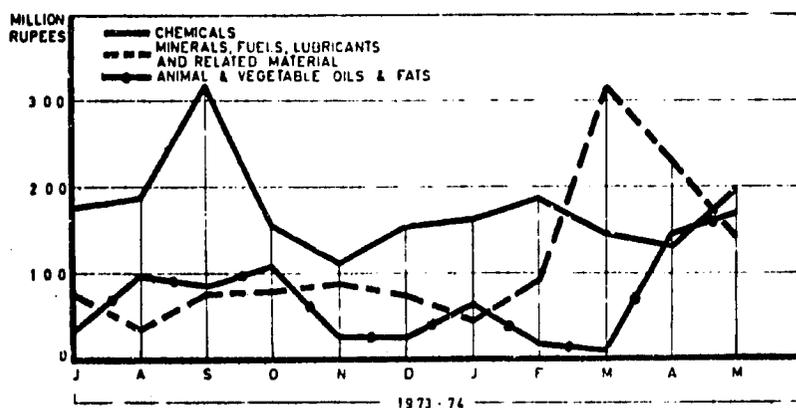
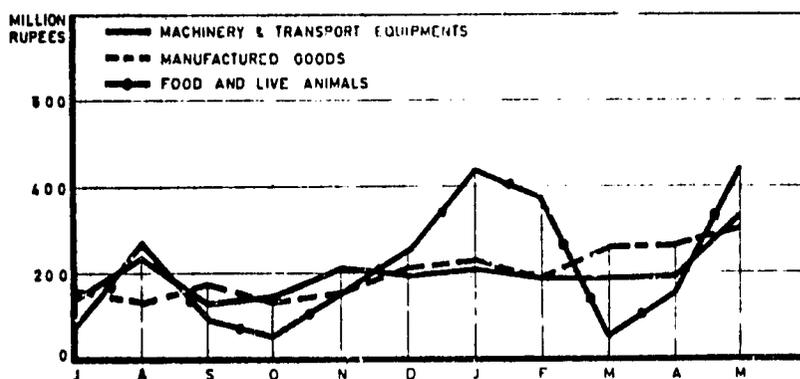
A special emphasis is being placed on import substitution focused on agricultural elements: land improvement, new irrigation and water sources, and fertilizer. As suggested above, the major sources of funding will have to derive from the foreign aid of the consortium and others. And in this connection, new donors from the Arab world have appeared. Still, there are several prerequisites for achieving the desired goals of the fifth five-year plan. These are: improving tax levies and collections; undertaking public and private efficiencies; reducing the increase in prices; accelerating production; and, increasing both savings and exports.

Finally, however, it should be noted that the economic records for 1975 and early 1976 appear to offer some hope. There was an economic revival of sorts in 1975, even though overall growth was only 2.6%. Overall GDP growth in 1976 is expected to be about 4.0%. Agricultural growth will average 3.5% and industrial growth will increase to 4.8%. The balance of payments deficit will probably be \$1.3 billion as compared to \$1.25 billion in FY 1975. Such growth, if achieved, although modest, would serve to provide a hopeful base for acceleration thereafter.

Table 8: TOTAL FOREIGN TRADE



IMPORTS BY SELECTED COMMODITY GROUPS



Source: Pakistan's Key Economic Indicators, *op. cit.*, p. 1.



## APPENDIX III

### THE GOVERNMENT OF PAKISTAN: EFFECTS OF ITS LIMITATIONS ON SOCIOECONOMIC DEVELOPMENT

#### Political Realities in Pakistan

It has been suggested that Pakistan has been subjected to three kinds of conflicts in its short history. One has been the struggle between those seeking parliamentary democracy and the military-bureaucratic oligarchy for political and institutional supremacy. Another has been between those advocates of a strong, highly centralized government and the regionalists, who sought decentralization and more political power for the provinces and/or regional autonomy. Still a third conflict involved the allocation of economic resources and the sharing of economic development among all the regions of Pakistan.

None of these conflicts could be separated, but all three were meshed together and ultimately involved the kind of political and economic society which was to emerge in Pakistan: a federalized, parliamentary democracy dedicated to broad socioeconomic development or a more narrowly defined oligarchy designed to retain some of the feudal status and agro-based economic power of British India. The latter position was not without its defenders, including the business families, large landlords and certain of the military-civil service hierarchy. On the other hand, the impoverished peasants and the growing urban masses as well as local small farmers have increasingly demanded a better federalized parliamentary democracy and upward economic mobility.

#### The Ineffectiveness of Local Government

In the appended text the progress toward a new constitutional government, emerging from the debacle of 1971, under the leadership of Ali Bhutto, was recorded. The new constitution proclaimed on August 14, 1973 provided Pakistan with a central parliamentary form of government with a bicameral legislature consisting of a Senate and National Assembly. The head of the government was to be a prime minister, elected by a majority of the National Assembly, currently Zulfikar Ali Bhutto, with his majority PPP. Local government did not share in this latest reform at the top.

Indeed, local government in Pakistan has been largely unchanged since the period of British India. Provinces are subdivided into divisions, districts and *tehsils* (district subdivisions). Local government heretofore has been run by a hierarchy of administrators largely beholdng to the central administration. These include the divisional commissioner, the deputy commissioner (for the district), the subdivisional magistrate, and *tahsildar* or subdivisional officer. The key position is that of the deputy commissioner, since he controls all branches of government in the district, including revenue, justice, and police.

In the 19th century district boards were created by the British. In 1959 these were transformed into district councils with the deputy commissioner as chairman. Councils were also set up at the divisional, *tehsil* and local, Union Council levels. The Union Councils were the only directly elected bodies, the higher councils having a high proportion of appointed officials. But all of these councils soon fell into disrepute due to internal corruption, and local Pakistanis demanded that they be disbanded. By the close of the sixties they were moribund in any event.

## The Importance of Local Government in Promoting Health Services

It has been the experience of the USAID that a viable local government is virtually a prerequisite to economic and social development for small farmers and struggling local businesses. Capable and representative local government can reach decisions affecting the welfare of the local citizens and can arrange for local credit which could not be accomplished on a higher level. Of course, the benevolence of the provincial and federal government is also necessary if local government is to be effective.

As recorded above, the traditions of local, democratic self-government in Pakistan are virtually nil. Instead, feudalism and provincial, district and local corruption have been commonplace. The council system apparently has not taken hold and a vacuum of some sort appears to exist. Whether or not Ali Bhutto can and will encourage the promotion of locally responsible government remains to be seen. It will undoubtedly take such outside pressure, however, to invigorate local efforts toward more self-government.

It has been demonstrated in other LDC's, in any event, that effective, local self-government has a decided effect on the promotion of health services and health care. This applies to many aspects of health care. Local initiatives can help promote health centers and health units. They can labor to bring physicians' assistants, health guards and other health workers to their villages by demonstrating a capacity to organize and use their services. Perhaps more importantly, local government can bring peer pressure to bear on young couples to practice family planning and so reduce the population explosion.

## APPENDIX IV

### PAKISTAN POPULATION DATA

#### Pakistan Ethnic Groups

The population of Pakistan is a complex mixture of indigenous peoples as suggested in Appendix I. Various racial types have invaded the geographic area of Pakistan including Aryans, Persians, Greeks, Pashtuns (Puthans), and Mughals, especially in the northwest, while the Arabs conquered Sind. Thus, racial types prevalent in Pakistan today include tall, fair-skinned, even blue-eyed types; the olive-skinned, fine-boned "Iranian" type; smaller, dark-skinned types of "Dravidian" and "Australoid" origin; "Indo-Aryan," a dark-eyed type; and, broad-headed Europoid peoples not unlike the Alpine type in Europe.

Thus, regionally, one finds: (1) the Mediterranean type found in Punjab, (2) "oriental Mediterranean" type found both in Punjab and Sind; (3) the Pashtuns of the Northwest Frontier Province; and, (4) the brachycephalic (shorthheaded) Baluchi type derived from Iranian stock.

#### Linguistic Groups

Pakistan is linguistically heterogeneous and no single language is common to the whole population. Thus, the distribution of languages claimed to be the mother tongue at the time of the 1961 census was: (1) Punjabi, 60%; (2) Sindhi, 13%; (3) Pushtu, 8%, Urdu, 8%; (4) Baluchi, 2%; and, (5) Brahni, 1%.

Urdu is the first language taught in Pakistan schools, rather than Punjabi. Virtually all educated Punjabis read and write Urdu. Punjabi has been experiencing a kind of literary renaissance, however, and recently Punjabi literature has been increasingly published. Sindhi literature is also being revived and it is taught as the first language in Sind schools. Pashto has no written literature, while Baluchi also remains a very minor, spoken language of Pakistan.

Urdu has strong associations with Muslim nationalism which explains its basis as the first, official native language of Pakistan, even though it is used as the spoken language of only about 8% of Pakistanis. English, however, remains the de facto official language. It is used as the language of the federal government and in international relations. Only about 2% of the Pakistanis can speak English, however.

#### Religious Groups

About 97% of the Pakistanis are Muslims. Most of these people adhere to the Sunni sect, the principal branch of Islam. The second sect is the Shii branch, while there is a small, influential sect called the Ahmadis or Qadianis. This latter sect does not regard Muhammad as the final prophet, a basic tenet of Islam. Both the Sunnis and the Shites are also divided into

various schools. Although there is generally no ordained priesthood, there are holy men called *pirs* who appear to have considerable influence among the Pakistani people. As a practical matter these holy men or other leading Pakistani Muslims do not appear to have taken a hostile attitude toward the introduction of western medicine nor against the government efforts at family planning.

### Education in Pakistan

Like the health sector, the educational sector has been continuously underfunded by the GOP. It is estimated that total government expenditures for the formal school system to date have been less than 2% of GNP, while only 7% of the total GOP expenditures are for education.

As to the system itself, in 1972 the government nationalized the entire educational system of over 3,500 private schools and colleges. The federal and provincial governments share responsibility for educational policy as well as management of the system. Generally, recurring costs are met from provincial revenue resources, while development costs derive from federal transfers. Between 87% and 95% of direct recurring costs are for teachers' salaries, while equipment expenditures are extremely small. Direct pupil recurring costs are the lowest among developing nations - \$10 for primary and \$230 for university students.

Student enrollment increased from 2.9 million in 1961 to 6.6 million in 1971, at that time about 27% of the school age (5-19) population. Latest GOP data indicate enrollment (5-14 years) at approximately 18,950,000. The system is heavily rural in the elementary and middle school levels and urban at the high school level and above.

The results derived from this meager educational effort are not especially hopeful for the immediate future. About 50% of the children who begin elementary school never complete the five-year primary cycle. As recorded in other sections of this study, employment prospects for the polytechnic and university graduates is equally discouraging. At least 44% of the polytechnic graduates never find work in their fields, while approximately one-third of the graduate engineers are unemployed for about two years before finding employment in their area. Finally, in 1975 the literacy rate in Pakistan at best was only approximately 19%.

### Basic Demographic Data

In the 1961 census, the population of (then West) Pakistan was 42,880,000 with a density of 140 persons per square mile. At the 1972 census, the Pakistan population had increased to 64,892,000. By 1975 it has been estimated that Pakistan's population had reached about 70.2 million.

This represents a very rapid and now dangerous population explosion. Between 1901 and 1961 the population of West Pakistan increased by about 158%. From 1951 to 1961 the population increased by 27%. But between 1961 and 1972 it increased by 51%. As recorded previously, the USAID accepted an annual population increase of about 3% in 1974, but other demographers set the figure between 3.5 and 4.2%, a radically dangerous population growth rate.

The growth of the population has been caused primarily by natural increase. It is not certain but Pakistan may have gained 500,000 to 1,000,000 people in the exchange of Muslim for Hindu population in 1947. In any event, the regional distribution of the population is uneven.

It is dense in the fertile Indus Valley. In 1972 it was the highest in the Lahore district, with 1,698 persons per square mile. In Baluchistan, however, the population density was only twenty-six per square mile in Quetta Division, and fifteen in the Kalot Division.

#### Fertility Trends<sup>1</sup>

As suggested in the text, the data available from the government and private sources on Pakistan's population growth and fertility trends are both incomplete and in disagreement. The following data are the latest (1974) available from the Pakistani government and provide some salient features of Pakistan's continuing population problems.

- The crude birth rate in 1974 was estimated to be 45.5/1,000.
- In 1971, an average of 6.3 babies (total fertility rate) were born to every female in reproductive age (see tables below). By 1974, the GOP claimed that the total fertility rate had dropped to 6.0 per fertile woman.
- In 1974, 59% of the total population was married.
- The crude death rate was 15.5/1,000 in 1974.
- Life expectancy at birth was forty-eight years in 1965, compared to seventy-one years in the U.S. in 1973. By 1974 it had increased to 52.9 for males and 51.8 for females.
- Infant mortality was seven times higher than that in the U.S. in the early seventies, while every eighth child born alive in Pakistan died before reaching one year old. By 1974 the GOP placed infant mortality at 115 per 1,000 live births.
- In 1961 it was estimated that 47% of the population was under fifteen, while a decade later it was estimated that 46% was under fifteen. By 1974 this figure was 44.9%.
- Sex imbalance continues, with 113 males for every 100 females in the total population.
- Maternal mortality in 1974 was eight per thousand live births.

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<sup>1</sup> Pakistan's Population Profile and its Economic Implications, Government of Pakistan, 1974. See also Health Statistics, op. cit., pp. iv, 13-30.

Table 1: AGE-SPECIFIC FERTILITY RATES

Age of females in complete years	Pakistan	Urban areas	Rural areas
15 - 19	56	37	64
20 - 24	226	204	234
25 - 29	258	250	260
30 - 34	261	234	270
35 - 39	220	178	234
40 - 44	145	97	160
45 - 49	80	40	100
50 and above	8	4	9
<b>Total fertility rate</b>	<b>6.2950</b>	<b>5.2200</b>	<b>6.6550</b>

Definitions:

*Age specific fertility rate* - Number of children ever born per 1,000 women in specified age group.

*Age specific marital fertility rate* - Number of children ever born per 1,000 married women in specified age group.

*Total fertility rate* - Total number of children ever born to 1,000 women during the reproductive years, 15-49.

*Total marital fertility rate* - Total number of children ever born per 1,000 married women during the reproductive years, 15-49.

*Gross reproductive rate* - Total number of daughters ever born per 1,000 women during the reproductive years, 15-49.

*Marital gross reproductive rate* - Total number of daughters ever born per 1,000 married women during reproductive years, 15-49.

Table 2: REPRODUCTIVE AGES AND BIRTHS BY AGE OF MOTHERS

Ages of females in complete years	Pakistan		Urban		Rural	
	Popula- tion of females	Births	Popula- tion of females	Births	Popula- tion of females	Births
Total	100.00	100.00	100.00	100.00	100.00	100.00
15 - 19	17.83	5.19	20.87	4.86	16.78	5.28
20 - 24	18.31	21.74	18.52	23.85	18.23	21.16
25 - 29	18.26	24.68	17.18	27.13	18.65	24.01
30 - 34	15.77	21.58	14.93	22.06	16.06	21.45
35 - 39	12.77	14.70	12.71	14.31	12.79	14.81
40 - 44	10.15	7.74	9.08	5.54	10.52	8.34
45 - 49	6.91	4.37	6.71	2.25	6.97	4.95

Source: Statistical Division, Population Growth Survey, 1971, de facto Estimates, Karachi, 1974.

Note: Population of females for age 45-49 relates to that age group only, but the births of females of age group 45-49 includes births to females 45 and over.

#### Urbanization of Pakistan

In 1974 approximately 74% of Pakistan's population still lived in rural areas. An increasing number of Pakistan's rural population has been migrating to the cities, however, in search of jobs and a higher standard of living. The current rate of urbanization has been twice as fast as the rate of population growth.

Some Pakistani officials believe that Pakistan's cities are undergoing population implosion. They cite Wah Cantt, the population of which, they claim, has tripled in less than twelve years. Other cities undergoing rapid expansion and increase in population are Lyallpur, Gujranwala, Karachi, and Rawalpindi.

#### The Labor Force in Pakistan

In the text it was recorded that during the sixties the Pakistan labor force constituted approximately 31% of the population. By 1974 the GOP assumed that figure had risen to 34% or about 23.8 million people. Of this number, 13.6 million are involved in the agriculture sector. Labor force participation is much higher for males at 55% than for females at 6%. Each worker was supporting at least two dependents. Both unemployment and underemployment are known to be very high, but the GOP has not released data on the quantity involved. The abysmally low literacy rate, 19% in 1972, only accentuates the unemployment situation.

## Some Projections Related to the Pakistan Fertility Trends

### Long-Term Projections

The U.S. Bureau of the Census had provided long-term population projections based on various hypothetical fertility rates. These assumptions and projections are as follows:

- If the fertility rate remains at the 1970 level (about 6.3 babies for every reproductive female), the population of Pakistan would reach 128 million by 2051 and will continue to grow.
- If Pakistan achieves a two-child family by 1980 (a very remote possibility), the population would become stationary after reaching 126 million by 2045.
- If Pakistan could secure the two-child family by 1990, the population would rise to 153 million by 2065 and cease to grow thereafter.
- If the two-child family becomes a reality by 2000, the population of Pakistan would reach stationary equilibrium by the year 2060 at 189 million people.

### Short-Term Projections

The USAID in Islamabad has also produced some short-term projections related to the population or family planning programs in Pakistan. These projections include:

- If the 4% of Pakistani couples continue to practice contraception as was the situation in 1973, by 1980 Pakistan's population would rise to 84 million;.
- If couples contracepting remained at the 1974 level of 10%, Pakistan's population would reach 83 million by 1980;.
- If a target of a birth rate of 35 per 1,000 is achieved by 1978, Pakistan's population would be 81 million in 1980; and, finally
- If the government is able to launch a massive family planning program with contraceptive inundation and intensive population education, the population should number about 77 million in 1980.

Table 3:

POPULATION PROJECTIONS FOR PAKISTAN BY AGE AND SEX, 1ST JULY 1975 TO  
1ST JULY 1980\* BY SINGLE YEAR BASED UPON LINEAR INTERPOLATION

(thousands)

<u>1975</u>	<u>All Ages</u>
Both sexes	70,260
Males	36,452
Females	33,808
 <u>1976</u>	
Both sexes	72,495
Males	37,613
Females	34,882
 <u>1977</u>	
Both sexes	74,731
Males	38,774
Females	35,957
 <u>1978</u>	
Both sexes	76,967
Males	39,935
Females	37,032
 <u>1979</u>	
Both sexes	79,203
Males	41,096
Females	38,107
 <u>1980</u>	
Both sexes	81,450
Males	42,258
Females	39,192

\* Planning Commission - Population Estimates



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