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STAFF APPRAISAL REPORT

ECUADOR

SECOND SOCIAL DEVELOPMENT PROJECT

HEALTH AND NUTRITION

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GLOSSARY OF ACRONYMS

ASOPROFAR	Pharmaceutical Producers Association
CEMEIM	Central Supply Facility (Centro Estatal de Medicamentos e Insumos Médicos)
CNS	National Health Council (Consejo Nacional de Salud)
CONADE	National Development Council (Consejo Nacional de Desarrollo)
CPSG	Provincial Health Council of Guayas (Consejo Provincial de Salud del Guayas)
CRM	Rehabilitation Center of Manabi (Centro de Rehabilitación de Manabí)
IDB	Interamerican Development Bank (Banco Interamericano de Desarrollo)
IEOS	Ecuadoran Institute for Sanitary Works (Instituto Ecuatoriano de Obras Sanitarias)
IESS	Social Security Institute (Instituto Ecuatoriano de Seguridad Social)
IMF	International Monetary Fund
IMR	Infant Mortality Rate
INEM	National Employment Institute (Instituto Nacional de Empleo)
MEGRAME	Pharmaceutical Program for Children under 14 Years of Age
MOF	Ministry of Finance (Ministerio de Finanzas)
MOH	Ministry of Public Health (Ministerio de Salud Pública)
NIH	National Institute of Hygiene L. I. Perez (Instituto Nacional de Higiene)
NGOs	Nongovernmental Organizations (Organizaciones no Gubernamentales)
PAAMI	Mother-Child Feeding Program (Programa de Asistencia Alimentaria Materno-Infantil)
PAHO	Pan American Health Organization (Organización Panamericana de la Salud)
PCU	Project Coordination Unit (Unidad Coordinadora del Proyecto)
PMA	World Food Program (Programa Mundial de Alimentos)

SISVAN	Nutrition Surveillance System (Sistema de Vigilancia Alimentaria Nutricional)
SOLCA	Society for the Fight Against Cancer (Sociedad de Lucha Contra el Cáncer)
UNDP	United Nations Development Programme (Programa de las Naciones Unidas para el Desarrollo)
UNFPA	United Nations Fund for Population Activities (Fondo de las Naciones Unidas para Actividades en Población)
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization (Organización Mundial de la Salud)

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SECOND SOCIAL DEVELOPMENT PROJECT - HEALTH AND NUTRITION

STAFF APPRAISAL REPORT

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This report is based on an appraisal mission that visited Ecuador in January 1992. Mission members were Bernardo Kugler (Mission Leader); Patricio V. Marquez (Public Health Specialist, LA4HR); Luis F. Duque (Public Health Specialist, Consultant); Francisco Mardones (Nutrition Specialist, LATHR); Alan Carroll and Steve Maber (Sanitation Specialists, INUWS); Luis Secco (Architect, Consultant); and Maria Anderson (Operations Analyst, Consultant). In addition, a preappraisal mission visited Ecuador in September 1991. Mission members at that time included Bernardo Kugler (Mission Leader); Patricio V. Marquez; Luis F. Duque; Rene Corradine; Hernando Gomez-Buendia; Carlos Castillo; Jose A. Solis; Wilson Rodriguez; and Maria Anderson. Task Manager: Bernardo Kugler (LA4HR); Division Chief: James W. Adams (LA4HR); Director: Ping-Cheung Loh (LA4); Peer Reviewers: Philip Musgrove (LATHR), Oscar Echeverri (AS2PH), and Guy Ellena (EM2PH). This report was edited by William Mayville. Ms. Suzanne McQueen (Summer Intern) contributed to the production of the report.

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SECOND SOCIAL DEVELOPMENT PROJECT: HEALTH AND NUTRITION

LOAN AND PROJECT SUMMARY

Borrower: Republic of Ecuador

Beneficiary: Ministry of Public Health (MOH)

Amount: US\$70.0 million equivalent

Terms: Repayment in 20 years with five years of grace at the Bank's standard variable rate.

Project

Objectives: The Project would support the Government in expanding and strengthening basic health services, including nutrition and basic sanitation. It aims to: (a) expand basic health care, nutrition and sanitation coverage to reach the poorest population groups; (b) improve quality of basic health care services already provided to the poor; and (c) strengthen decision-making and management of public institutions involved in the delivery of basic health, nutrition and sanitation programs.

Project

Description: The project, the first Bank operation for the health sector, is the second of the Bank's program for the Social Sector in the country. It would support the above objectives by financing four components. First is a basic health care component which would support the Ministry of Health (MOH)'s Basic Health Care Program in extending coverage and in improving the quality of basic health care services to 2 million poor. This component (68 percent of total project costs) is centered around maternal and child health care interventions. It would include financing of: (a) cost-effective health care teams at local health facilities; (b) construction and upgrading of facilities, including provision of basic equipment; and (c) medical inputs and essential drugs on a cost-recovery basis. Use of a decentralized network for delivery of services and mobilizing community support and NGO participation would enhance program cost-effectiveness. Second is a nutrition component (6 percent of total project costs) containing subcomponents in information, dissemination, and non-formal education; growth monitoring; and food supplementation. Activities financed would include: educational campaigns advocating good general nutrition, feeding practices, and breastfeeding; expanded coverage of growth monitoring for children under age 3, expanded coverage of pre-natal care and corrective measures for substandard cases; and targeted supplementary food distribution for low-income mothers and children participating in primary health programs, as well

as a micronutrient program for iron deficiency. Third is a basic sanitation and safe water component (13 percent of total project costs) that would assist MOH in improving access to safe water and sanitation facilities (mostly latrines) in rural areas. In view of its pilot nature, coverage of this component is restricted to under one-tenth of the project target population and includes strong community participation to enhance system sustainability. Fourth is a sector policy and institutional strengthening component (13 percent of total project costs) that would support: (a) development of institutional bases for decentralization, including establishing budget programming and management information systems; (b) staff development; and (c) studies devoted to improved inter-institutional coordination, cost recovery and payment systems, hospital rehabilitation, and impact evaluation of project activities and other activities in the public health sector.

Expected
Benefits:

The project would help alleviate poverty in the medium term and increase human capital accumulation among the poor, thus improving the country's human capital stock and strengthening bases for economic development. At the policy level, the project would support a new approach to primary health care. In addition, the project would improve efficiency of public resource use by strengthening MOH's planning and budgeting process, as well as its implementation capacity and offering sector-level support for overall budget reform measures being pursued at the macroeconomic level.

Risks and
Safeguards:

The main risk derives from poor implementation capacity of MOH. This problem could be aggravated by the presidential election and subsequent change of Government in 1992. Project design incorporates features to overcome obstacles to successful implementation, such as development of a decentralized management network for provision of services, use of existing sector staff in project tasks, use of experience developer in managing Bank PPF 110-EC and PPF 110-1-EC, contracting with international agencies to manage procurement and technical assistance, assuring incorporation of counterpart financing of recurrent expenditures in national budget beginning in 1992 and including annual subsector and project budget reviews during supervision missions, introduction of cost-recovery schemes, and establishing ties with communities. The substance of project components, focussing as they do on alleviating poverty, is such that they should enjoy continued support from Government despite a change in administration. Intensive supervision will be maintained during the political transition to ensure an understanding of, and commitment to sustaining the project.

Estimated Project Costs a/

	US\$ Million		
	Local	Foreign	Total
A. BASIC HEALTH CARE	42.5	17.5	60.0
B. NUTRITION	4.5	1.2	5.7
C. BASIC SAN. & SAFE WATER	8.2	3.5	11.7
D. POLICY AND INSTITUTIONAL STRENGTHENING	6.5	4.9	11.4
Total BASELINE COSTS	61.7	27.1	88.8
Physical Contingencies	0.8	0.9	1.7
Price Contingencies	8.3	3.4	11.7
Total PROJECTS COSTS	70.8	31.4	102.2

Financing Plan

	<u>Local</u>	<u>Foreign</u>	<u>Total</u>
Government of Ecuador	31.7	-	31.7
IBRD	39.1	30.9	70.0
UNDP		0.5	0.5
Total	70.8	31.4	102.2

Estimated Disbursements

IBRD Fiscal Year	<u>93</u>	<u>94</u>	<u>95</u>	<u>96</u>	<u>97</u>	<u>98</u>	<u>99</u>	<u>00</u>
Annual	7.5 b/	7.0	10.0	12.0	16.0	10.0	7.0	0.5
Cumulative	7.5	14.5	24.5	36.5	52.5	62.5	69.5	70.0

a/ Includes taxes of about US\$6.5 million.

b/ Includes Special Account deposit of US\$3.5 million and a portion of expected retroactive financing of up to US\$5.0 million for eligible expenditures incurred after January 24, 1992.

DEFINITIONS

Age-Specific Mortality Rates	Death rates broken down for each age group population.
Average Length of Stay	Number of hospital patient-days/number of patient admissions.
Average Occupancy Rate	Number of hospitals patient-days/number of beds multiplied by 365.
Child Death Rate	The number of deaths among children one to four years of age per 1,000 children in that age group in a given year.
Chronic Diseases	Those illnesses characterized by a long latency period, prolonged clinical course, and debilitating manifestations.
Contraceptive Prevalence	The percentage of married women in reproductive ages who are regularly using a method of contraception.
Crude Birth Rate	Number of live births per year per 1,000 people.
Crude Death Rate	Number of deaths per year per 1,000 people.
Dependency Ratio	Population 14 years or under and 65 years or older as a percentage of the population aged 15 to 64 years.
Incidence Rate	The number of persons contracting a disease as a proportion of the population at risk, per unit of time usually expressed per 1,000 persons.
Infant Mortality Rate	Annual deaths of infants less than 1 year old per 1,000 live births during the same year.
Life Expectancy at Birth	The number of years a newborn child would live if subject to the age-specific mortality rates prevailing at time of birth.
Maternal Mortality	Number of maternal deaths per 10,000 live birth rates in a given year attributable to pregnancy, childbirth, or post-partum.
Morbidity	Disease and illness in a population.
Mortality	Death in a population.
Prevalence Rate	The number of persons having a particular disease at a given point in time per population. Usually expressed per 1,000 persons.

Rate of Natural Increase	Difference between crude birth and crude death rates; usually expressed as a percentage.
Rate of Population Growth	Rate of natural increase adjusted for (net) migration, and expressed as a percentage of the total population in a given year.
Total Fertility Rate	The average number of children a woman will have if she experiences a given set (i.e., those then prevailing among women of those ages) of age specific fertility rates throughout her lifetime. Serves as an estimate of the number of children per completed family.

I. BACKGROUND

A. Economic Setting

1.01 The stimulus of an oil bonanza in the 1970s and subsequent accelerated economic growth that lasted until 1980 provided an environment for social sector programs to undergo considerable expansion. However, poverty still persists in Ecuador and has been further exacerbated by the harsh economic climate during the 1980s. The country has insufficient human capital accumulation in both an absolute sense and when compared to other countries in the region (Annex 1).

1.02 The oil windfall of the seventies led to an average GDP annual growth rate of 9 percent and placed Ecuador among middle-income countries. The strategy followed by the Government during the boom lacked a long-term perspective; hence major portions of the Government's oil revenues were allocated to inefficient public expenditures and subsidies, and in the end financed consumption instead of productive investments. This increased the public deficit, which was partly financed by external debt.

1.03 Since 1982, the country has faced several external shocks in the form of reduced oil prices and natural disasters, greatly complicating the Government's efforts at adjustment. The public deficit reached an all-time high of 9.7 percent of GDP in 1987, with interest due on external debt representing 9.8 percent of GDP in 1988. With the implementation of a basic stabilization process in 1988, inflation was reduced from 85 percent per year to 54 percent by 1989. As a result of adjustment measures, complemented by a rise in international oil prices, the public deficit was brought down to 5.1 and 0.3 percent of GDP, respectively, in 1988 and 1989, while a 0.8 percent surplus was recorded for 1990; preliminary figures for 1991 indicate a deficit of 1.3 percent. However, annual inflation rates remain high at above 50 percent and the sustainability of the adjustment effort is problematic given the large quasi-fiscal deficit in the public financial sector.

1.04 Economic growth was near zero for the period 1982-87; the abrupt fall in GDP caused by the 1987 earthquake was recouped in 1988 when the growth rate approached 11 percent. GDP grew modestly in 1989 and 1990 (under 1 percent per year); and although growth rates could be higher in the coming years, they are expected to remain modest. The mixed record of economic performance during the 1980s aggravated the debt burden: external debt was equivalent to 37 percent of GDP in 1982 and 109 percent in 1988. Arrears to commercial banks reached over US\$1 billion before partial interest payments were resumed in the second half of 1989. An agreement with the IMF was reached in September 1989 as a first step towards regularizing international finance relations. More recently, an IMF standby arrangement was signed in October 1991.

B. Poverty, Income, and the Social Sector

1.05 While Ecuador's GNP per capita of US\$980 in 1990 makes it a lower middle-income country, poverty is widespread and income distribution highly skewed. Poverty is especially serious for Ecuador's large indigenous population. According to several reports, income distribution continues to be among the worst for middle-income Latin American countries. The average per-capita income in 1990 was about the same as in 1978. The labor share of GDP

decreased between 1983 and 1988, and the minimum wage in mid-1989, measured in real terms, was about three-fourths of its 1983 level. The reduction of incomes during the 1980s appears to have affected the poor the most and to a lesser extent the lower-middle income groups.

1.06 Public social expenditures increased substantially during the 1970s but declined by about one-third during the early 1980s before stabilizing in real terms in 1984, following the pattern of public sector expenditures. The increase in social sector expenditures during the 1970s set in motion an increase in coverage of social sector programs that continued during the 1980s despite the fall and subsequent flattening of the expenditure curves. During this period, there were improvements in some social indicators, notably increased education enrollment and reduced infant mortality. As a result of expenditure declines, however, average expenditure per student and per patient decreased during the 1980s. While part of the reduction in unit costs can be attributed to productivity increases (per sucre spent), there is serious concern that quality of some social services has deteriorated, affecting the poor the most.

1.07 Development of public sector institutional capacity was limited, even though public employment grew at a rate of about 20 percent per year in the 1974-82 period, representing nearly 15 percent of total employment during the 1980s. Progress toward better public investment programming mechanisms and toward timely program implementation was insufficient. Social sector institutions are expected to interact with the Ministry of Finance (MOF) and with the National Planning Council (CONADE) in preparing plans, programs, and budgets. However, these exercises have limited relevance because less than half of the budget is allocated through the planning and budget decision-making process, with over one-half of public spending being earmarked. Even when resources are properly allocated for investment programs and projects, implementation is usually fraught with difficulties. An example was a comprehensive development plan issued in 1985 that floundered in part because of inadequate formation of clear priorities and slow implementation of projects sponsored by external financing agencies.

1.08 Overall, social public expenditure has had some effect in redistributing income to the poor, as expenditures are less unequally distributed than income. During the 1970s, the redistributive effect of public expenditure in rural infrastructure, education, and health was moderate. Data for the 1980s indicate that although the number of households not receiving any of the social services is small (0.6 percent), all of them belong to the low and lower-middle income groups. Furthermore, in the 1980s, the smaller subsidies were more concentrated in programs for the low-income group while the larger subsidies benefitted middle- and high-income groups. The redistributive impact of public expenditure in education is the most significant but programs in water, health and sanitation also redistribute resources to the poor.

C. Women in Development

1.09 The Bank conducted an Assessment of Women in Development (WID) issues in Ecuador in 1989; this study yielded a number of important conclusions about the social status of women. There are no major differences in enrollment

rates by gender; at the preschool and secondary levels there are more girls than boys. Most schools (92.3 percent) are coeducational. Although girls have a slight advantage in terms of promotion rates, they tend to be directed into educational streams with little mathematics and science, which limits later career options. Labor force participation by women has increased since the 1950s, although women are still concentrated in low-skill, service-sector activities and informal occupations with low earnings potential. Lack of minimal public infrastructure services has a powerful effect on the quality of women's lives, specially in the household environment. Most important are the unavailability of safe water and minimal waste disposal systems. Lack of access to water in, or near to, the household further aggravates hardship for women who are usually in charge of fetching water, especially in rural areas.

1.10 In Ecuador, as in many developing countries, safe motherhood is a major issue affecting women's health (see paras. 2.01-2.07). Although crude birth rates have decreased over the last two decades, the number and the relative percentage of women of childbearing age has increased in the same period, and maternal mortality rates continue to be almost twice the average for the Latin American region. Malnutrition is another problem affecting women's health, particularly among pregnant and lactating women. Poor health and welfare indicators associated with childbearing and nutritional status of Ecuadoran mothers reflect lack of medical care available to women, particularly among the poor. Since women in childbearing age and infants have more need for health and nutritional care than any other population group, and as women have the responsibility in the child rearing task, access to good health and nutrition services is a gender issue in Ecuador. These services, including family planning, are fundamental to improve women's welfare.

II. SECTORAL CONTEXT

A. Population, Health and Nutrition Status

2.01 Population. Ecuador's 1990 population is estimated at 10.5 million, of which 55 percent live in urban areas. Population density is 38 per square kilometer. The crude birth rate and crude death rates were, respectively, 32 and 7 per 1,000 population, yielding a natural population increase of 2.5 percent, and ranking Ecuador among the high-growth countries in Latin America. The age structure of the population is youthful but gradually aging in relative terms as a function of the moderate fertility decline. In 1990, 40 percent of the population was under 15 years; 56 percent was in the 15-64 age group; and 4 percent was 65 years or older. The dependency ratio therefore is 79 percent. Nearly 40 percent of the total population is made up of mixed indigenous and mestizo groups, who generally reside in rural and peri-urban areas, belong to the lowest income groups, and lack access to basic social services.

2.02 The total fertility rate (TFR) declined from 5.4 children in 1975-80 to 4.3 in 1985-90, with the most important determinant of fertility being educational level: slightly over two children on average for women with some university instruction as compared to 6.4 for those with no formal education. Notwithstanding fertility declines, population momentum is still high. Recent projections assume that TFR will remain over three births per woman until the end of this century. The contraceptive prevalence rate has increased from

39.9 percent in 1982 to 52.9 percent in 1989; the most popular family planning method is female sterilization (18.3 percent) followed by IUD (11.9 percent), rhythm (8.8 percent), and oral pills (8.6 percent).

2.03 Health Status. Overall health status in Ecuador still ranks among the lowest in Latin America, comparing unfavorably with countries of similar per capita income, despite major improvements in conventional health indicators over the last two decades (see Annex 3). Life expectancy increased for males from about 52 years in 1970 to about 63 in 1990 and from 56 years to 67 years for women. The national average life expectancy at birth is 65 years. The relatively high infant mortality rate (IMR) of 44 per 1,000 live births in 1989, which was reduced by half during the 1970s, is partly due to the limited coverage of public health programs. It varies from 20 per 1,000 in select urban areas to 150 per 1,000 in small rural communities reflecting striking regional disparities and income levels. Mortality for children 1-4 years old has diminished from 7.9 per 1,000 in 1980 to 2.8 per 1,000 in 1989 as a result of immunization campaigns and control of diarrheal diseases. Nevertheless, the current estimate of child mortality is more than three times higher than in Barbados, Chile, or Costa Rica. About 4 out of 10 deaths in the country occur in children under 5 years old. Primary causes of excessive and unnecessary death and disease in infants and children are poor environmental conditions (including lack of access to safe water and sanitation services), infectious and communicable diseases, and malnutrition. Maternal mortality at 170 per 100,000 live births 1989 is among the highest in the Americas (more than 20 times the MMR of Canada or the United States), and is especially high among the 15-20 and 40-44 year age groups. Again, lack of basic health care largely contributes to this situation. While urban women have access to health services and receive professional prenatal and obstetrical care, most rural area pregnancies are not monitored and deliveries are left to traditional midwives.

2.04 The mortality structure reflects both the pathologies attributed to underdevelopment as well as those typical of developed countries. Diarrheal diseases and respiratory infections together contribute to more than 50 percent of infant and child mortality. Urban and rural areas show clear differences in the risk of death for infants and children, with mortality in rural areas being much higher, particularly in provinces where the Indian population constitutes a majority. In addition, infant mortality rises significantly when the mother is illiterate or has limited education and when there are many children in the family. The leading causes of death among adolescents are accidents and violence, infectious diseases, and cancer. Among adults, cardiovascular diseases and cancer are the major causes of death. The incidence of non-communicable health problems --which are contributing significantly to potentially productive years lost among the adult population-- is associated with aging of the population and with the rapid industrialization and urbanization processes of recent decades, which has changed life styles and affected the health status of Ecuadorans. The cholera epidemic, which is currently sweeping through several Latin American countries, struck Ecuador in January 1991 and is affecting all age groups. In 1991 more than 13,000 cases and 220 deaths have been reported in the country, mostly concentrated in areas without proper sewer and water systems.

2.05 Nutrition Status. Ecuador is a country with a serious malnutrition problem. Dietary deficiencies are chronic and a major contributing factor to the country's high rates of mortality and morbidity among infants, young children, and mothers. Energy-protein malnutrition, anemia, and goiter are the most pressing nutritional problems. The main causes of malnutrition are inadequate food intake, poor feeding practices, and high prevalence of infectious diseases.

2.06 Data from a 1986 national survey indicate that the prevalence of chronic malnutrition among children under five was 55 percent, and that the prevalence of acute malnutrition was 4 percent. On the basis of weight-for-age, 45.7 percent of children had mild or first degree malnutrition; 9.3 percent moderate or second-degree malnutrition; and 0.4 percent severe or third-degree malnutrition. The frequency of low height-for-age (retardation of growth owing to chronic malnutrition) was estimated at 49.4 percent, and the frequency of low weight-for-height (recent weight loss or acute malnutrition) at 4 percent. Nearly 80 percent of child malnutrition is among children under age two. Survey data consistently show that there are marked regional variations, with chronic and overall malnutrition generally higher in the Sierra (highlands) than in the Costa (coastal areas), and that the incidence of rural malnutrition is about double that in urban areas. The rural/urban gap appears greatest in those regions where income and access to public services are more unequally distributed.

2.07 Anemia is a significant nutritional problem in Ecuador among infants and women in the reproductive ages. It is further exacerbated by high fertility and poor health. The 1986 national survey found that 69 percent of infants and 46 percent of children 1 to 2 years old suffered from anemia. Sample studies have found that up to 60 percent of pregnant and nursing mothers suffered from some degree of anemia due to iron deficiencies. In spite of some recent progress, Ecuador continues to be one of the countries of the world most affected by endemic goiter. A 1983 MOH study of school children in areas above 1,500 meters showed an iodine deficiency prevalence of 35.6 percent. The high incidence of iodine deficiency, especially in the mountain areas, in combination with protein and vitamin deficiencies and consumption of goitrogenic foods, explain such high prevalence. Ecuador is not among the countries suffering from vitamin A deficiency (the 1986 national nutrition survey found only 0.2% of the children to be below the 10ug/100ml retinol level and 13.9% between the range of 10ug/100ml and 20ug/100ml). Among lower and lower-middle class children, feeding practices are a major determinant of malnutrition in certain parts of the country (while the prevalence of breast-feeding up to one year is high, less than half of children between 3 and 6 months of age are exclusively breast-fed). In the coastal areas, malnutrition occurs early due to the rapid decrease in the amount of breast milk consumed as part of a child's diet in the first months of life. Poor sanitation and parasites also contribute to the early onset of malnutrition in this region. In the Sierra, where there is more prolonged breast-feeding, the onset of malnutrition is delayed and is associated with feeding practices (e.g., there is very little exclusive breast-feeding, as bottles are used in the first days/months of life) and lack of nutrient-dense foods for young children.

B. The Health Care System

2.08 The basic structure of the Ecuadoran health care system represents a combination of public and private providers. In the public sector, health services are delivered by the Ministry of Public Health (MOH), the Ecuadoran Social Security Institute (IESS), the Armed Forces Health Service, and small programs under the responsibility of other public agencies. Nonprofit private providers include the Charity Board of Guayaquil, the National Red Cross, the Cancer Association (SOLCA), and a variety of NGOs. The proprietary sector consists of private hospitals and physician offices. Traditional medicine is part of the socio-cultural structure and plays an important role in the alleviation of disease, particularly in rural areas.

2.09 The two main providers of public health services are MOH and IESS. However, public sector programs reach only between one-third and one-half of the population. It is estimated that about one-fourth of the population have access to private services; therefore, a large percentage of the population is not covered at all. Only 60 percent of the urban population has in-house running water or easy access to water supply and sewerage services. In the rural areas, the coverage rates are 30 percent and 8 percent, respectively.

2.10 The Ministry of Public Health (MOH). MOH is responsible for broad national health policy and planning. Its programmatic responsibility is for both traditional public health activities and curative care. The role of the MOH's Provincial Directorates is limited to routine supervision of local activities, reflecting MOH's centralized organization. MOH services are largely financed by general tax revenues. Service delivery follows a pyramidal structure with levels of increasing complexity (i.e., from health subcenters and centers for preventive care, health promotion and curative ambulatory care to provincial and specialized hospitals for inpatient and outpatient health care services). The Central Supply Center (CEMEIM), an autonomous agency under MOH created in 1988, is in charge of procurement and distribution of pharmaceuticals and other medical supplies used in public health facilities. Earmarked taxes on cigarettes and beer finance the operation of CEMEIM, as well as the procurement of drugs that are distributed by MOH under three programs: Program for Children under the Age of 14 years (MEGRAME), Program for High-Risk Diseases, and the Generic Drug Program. CEMEIM has storage facilities in the principal cities of the country, and a transport fleet for the distribution of supplies. A network of drug stores (farmacias de medicamentos básicos), administered by the Provincial Health Directorates under the technical supervision of the MOH, is in place for the sale of generic drugs and other medical inputs to public health facilities (the drug stores are supplied by both CEMEIM and private providers). The operation of these drug stores is financed by allocations from earmarked taxes on beer. The National Institute of Hygiene L. I. Perez (NIH) is responsible for other matters related to pharmaceuticals, including registration, quality surveillance, and control of manufacture.

2.11 Ecuador has a history of confronting malnutrition through vertical food supplementation programs. However, these programs, along with the efforts of the NGOs, cover only 20 percent of the target population. Worse still, most of them have a limited nutritional impact on the most vulnerable groups because of deficient administration, the absence of a clear targeting

policy, and barriers to access by the poorest segments of the population. The most important program has been the mother/child feeding program (PAAMI) under MOH. At-risk groups are selected based on pregnancy or breast-feeding status for mothers and age of child (6-23 months); malnourished children between 2 and 5 years of age are evaluated with respect to the third percentile of weight-for-age of the reference standards recommended by WHO. The products distributed by this program represent a protein-caloric-rich mix of milk, beans, and rice for mothers, and leche-avena (a milk, oats and soy flour mixture) for children under school age. It is supposed to cover 25-33 percent of the caloric requirements for children who receive it. A modern plant owned by MOH produces the leche-avena mixture that is distributed to PAAMI's beneficiaries. The coverage of the school feeding programs, which are mostly financed by the World Food Program (PMA), and their transfers per beneficiary are also low (US\$6 worth of foods per capita per year). With the support of the Belgian Government, MOH has established a very successful iodine program.

2.12 The Ecuadoran Institute for Sanitary Works (IEOS), a part of MOH, is responsible for planning of the water and sanitation sector, setting norms and standards, preparing water, sewage and storm drainage projects, securing funding for projects, and managing the construction and maintenance of health facilities and water supply systems in both urban and rural areas of the country, with the exception of five districts, that include Quito and Guayaquil, where IEOS' only task is to ensure that norms are met. Among IEOS' main tasks is contributing to the development of local management boards. In practice, while boards are operational in cities, success in small communities has been limited, thus leaving all sector responsibilities for the rural population still completely in the hands of IEOS.

2.13 Social Security Institute (IESS). The IESS medical program provides hospital and outpatient medical care to public and private sector employees. IESS is basically financed with: (a) wage contributions from the insured and the employer; (b) Government contributions; and (c) investment yields. For salaried workers, total percentage wage contributions (including the employer's share) range from 15.8 percent to 30.2 percent; on the average, they amount to about 20 percent of salaries, and there are no ceilings on individual contributions. Although IESS coverage has been expanded over the last two decades, the population covered represents only about 10 percent of the country's total population and ranks Ecuador in 15th place among Latin American countries in terms of coverage. Approximately 26 percent of the economically active population receives social security benefits. Most agricultural wage earners, temporary workers, and the unemployed are legally excluded from social security coverage. The self-employed may join voluntarily. The spouse and children of the insured are not protected (except for insured females' children under the age of one, who receive medical care excluding pharmaceuticals); maternity benefits are only provided to insured females. Medical care for IESS affiliates is provided in the Institute's own service delivery structure of dispensaries and hospitals.

2.14 To expand social security coverage, an insurance scheme for farm workers (Seguro Social Campesino) was created in 1981. Of the total population, approximately 5 percent are protected by this program (this represents about 10 percent of the rural population). The beneficiaries of this program contribute 1 percent of the minimum wage, and IESS affiliates and

all employers also contribute 1 percent of the payroll to this scheme, making it in effect a program largely financed by urban wage taxes. Benefits received are more limited than for the IESS beneficiary, but the spouse and dependents of the insured are eligible for services, and enrollment is community-based. Medical care is provided through a network of dispensaries located across the country.

2.15 Private Providers. The largest nonprofit institution in the country is the Charity Board of Guayaquil, which is financed from lottery income. It is a quasi-public institution maintaining a degree of autonomy in the acquisition, use and disposition of its resources. Most of the users of its services, provided through four hospitals, live in Guayaquil, but patients come from other nearby provinces for some specialized care. The Cancer Society (SOLCA) is a national, nonprofit organization to fight cancer. Both individual and institutional for-profit private providers are well-organized in the large cities. The delivery of outpatient services in physician offices (consultorios) is the most traditional form of private provision of health services; a great number of Ecuador's physicians engage in this practice.

C. Sector Resources and Their Utilization

2.16 Ambulatory Services. MOH provides ambulatory health care services in the emergency and outpatient departments of its 125 hospitals and through its network of 120 health centers, 1,100 health subcenters and 228 health posts. Emergency rooms and outpatient departments of the 16 IESS hospitals, and 49 dispensaries provide ambulatory care to the insured population. The Seguro Campesino Program provides service through 312 dispensaries. Private practice physicians and traditional medicine practitioners provide probably the largest share of the ambulatory services.

2.17 MOH data show 0.6 medical consultations per person per year for its service population. This low figure is mostly due to the limited coverage and the low quality service provided by MOH. In contrast, IESS reported 3.6 physician visits per beneficiary.

2.18 Hospital Services. The number of hospital beds in Ecuador is 17,612. MOH operates 8,883 beds which represent 50 percent of total hospital beds in the country; IESS is in charge of 1,607 beds or 9 percent of the total; 926 beds or 5 percent are managed by the Armed Forces; and the rest or 36 percent are in the private sector. About 83 percent of Ecuador's total hospital beds are for general acute care and the remaining for chronic care; MOH manages 46 percent of total beds for acute care and 54 percent of total beds for chronic care. The number and type of health facilities under MOH are listed in Annex 3.

2.19 MOH has an overall bed to population ratio of about 1.2 beds per 1,000 population with a range of 0.6 in the Guayas Province to 2.0 in the Pichincha Province. Patients stay in the hospital 5.8 days on the average, which is an acceptable figure. The occupancy rate is a low 62 percent; this figure may be misleading as the total number of available beds may not be operational because of the deteriorated condition of some of the MOH hospitals. In contrast, IESS has 69 discharges per 1,000 insured; each patient stays an average of 8.6 days, and its 16 hospitals have an average 85

percent occupancy rate. Higher patient-days and occupancy rates at IESS are due to longer patient stay at their facilities.

2.20 Medical Technologies. The pharmaceutical industry, which is centered in Quito and Guayaquil, is one of Ecuador's main industries, and pharmaceuticals are important exports. Although Ecuador does not recognize patents on processes and products, traditionally the industry has been dominated by large multinational companies. Since 1970, foreign companies marketing in Ecuador have been required to build factories in the country and manufacture locally, or else to make arrangements with other companies with local production capability. There are no state-owned pharmaceutical companies, but the Government has a 40% interest in one of the major domestic manufacturers, Laboratorios Industriales Farmacéuticos Ecuatorianos (LIFE). Overall, there are more than 150 pharmaceutical laboratories operating in the country. Local laboratories import ingredients and compound simple drugs; more complex drugs are imported in bulk and packaged locally. Approximately 90 percent of the country's pharmaceutical needs are produced locally.

2.21 All public hospitals have diagnostic laboratories; their level of sophistication is tied to the level of care provided in each facility. However, it is estimated that a great number of the radiology services installed in MOH local hospitals are out of service, largely due to lack of maintenance. In addition, there is not enough trained personnel to operate this equipment. At the provincial hospitals the situation is somewhat better, but often they lack x-ray plates and other materials and medical supplies. Many hospitals also suffer from deteriorated physical infrastructure and support services such as kitchens as well as defects in their physical plants.

2.22 Human Resources. Recent estimates put the number of physicians at about 18,000, one-half of them in the public sector (MOH, IESS, other). Various estimates put the total staff of MOH at about 30,000; some 8,000 of them doctors. However, only recently has any significant amount of MOH staff been assigned to rural areas. These figures represent one doctor for 678 people, a ratio above those of neighboring countries and countries in the same income group. A policy of unrestricted entry into medical schools has greatly increased the number of physicians in the last decade which, coupled with the constancy of expenditures, has brought lower quality graduates. In addition, an insufficient number of graduate nurses and auxiliary personnel limits the expansion of primary care services. The physician/graduate nurse ratio of 4/1 is exactly the reverse of the most cost-effective staffing mix. At present, close to 70 percent of private and public sector physicians practice in the two most urbanized provinces, Pichincha and Guayas, where 42 percent of the population resides. The similarity in concentration can be partly explained by the fact that many professionals work for the private and the public subsectors simultaneously. At the same time, positions for general practitioners, pediatricians, and obstetricians remain unfilled in some provinces and many local hospitals. For water and sanitation, as well as for its other programs, IEOS has a staff of about 1,800 persons of which about two-thirds are direct-hire. Although IEOS has offices in each of the provinces in the country, they are not always staffed with professionals.

D. Health Care Expenditures and Financing of Services

2.23 Total health care spending in Ecuador represented a modest 3.5 percent of GDP per year or US\$35 per capita in the 1980s (detailed data on the evolution of sector finances appear in Annex 2). Total public health expenditures were approximately US\$120 million in 1991. MOH's budget was only 6.4 percent of the Government budget, and public sector expenditures were only slightly more than one-third of total health expenditures. IESS, whose beneficiaries constitute only 10 percent of the total population, absorb another one-third of total health expenditures; private health expenditures account for the rest of the total. Ecuador spends less money on health services than similar middle-income countries. A 1981 IMF staff study reported that only 6 of 96 countries reviewed spent a lower share of GDP on health, social security and welfare.

2.24 The provision of public health services under MOH is largely dependent on central government contributions, which provide most revenues. As noted (para. 2.10), however, the procurement and distribution of pharmaceuticals and the operation of CEMEIM are financed by earmarked taxes on tobacco and beer consumption. MOH also finances the operation of PAAMI and other primary care activities with contributions from FONNIN, a fund for infant nutrition under the Ministry of Social Welfare, financed by earmarked taxes. Cost recovery is minimal. Of total MOH expenditures in 1990, 49 percent consisted of expenditures for sectoral coordination and administration, training, and other central transfers and payments; about 37 percent were for financing the operation of health facilities (i.e., health subcenters and centers, hospitals, and cancer treatment centers), as well as for hospital rehabilitation and equipping; 11.7 percent were for basic sanitation activities; and 2.3 percent went for vertical programs such as maternal and child health, communicable diseases, chronic diseases, AIDS and dengue prevention, and dental care (Annex 2). In general, about two-thirds of all MOH expenditures are for salaries.

2.25 Public spending on health has a moderate redistributive effect in favor of the poor, and more generally those most in need --women and children. The limited sectoral resources have largely benefitted the middle- and upper-income groups. MOH, which is nominally responsible for about 75% of the population, receives the same amount of funds (about US\$100 million per year) as the medical program of the Social Security Institute, which serves only about 10% of the population.

III. SECTOR ISSUES AND GOVERNMENT STRATEGY

A. Issues

3.01 The most pressing issues in the PHN sector are: gaps in access to basic health services; limited health service delivery capability in the public sector; staffing imbalances; inefficiencies in health care expenditure; weak managerial capacity in MOH and at the provincial and local levels; and lack of intrasectoral coordination among service providers.

3.02 Gaps in Access to Basic Health Services. Access to basic health services is not available or is severely limited for about 50 percent of the

population. It is estimated that one-third of all children are hardly protected at all against disease. In spite of the availability of physical facilities and doctors for the country as a whole, geographic, cultural, logistical, and financial factors hinder access to health services, particularly in rural and peri-urban areas. Availability of water supply and sewerage services ranks among the lowest in Latin America. Lack of basic health care and water and sanitary waste disposal services is reflected in the country's relatively high infant and child mortality, maternal deaths, and fertility rates.

3.03 The population growth rate is declining, but only slowly, which contributes to increased gaps in access to basic health services. The main reason for rapid population growth is still high total fertility. A broad mix of economic, social, and cultural factors are associated with the high fertility rate. These include such factors as the early age of marriage (particularly among the indigenous population, and especially for females), the diminishing practice of prolonged breast-feeding, the limited use of modern contraception in rural areas, and the low relative status of women. The success of family planning efforts has been compromised by ill-defined policies, poor organization and management of public health services, and lack of coordination between public providers, the private nonprofit organizations, and the for-profit private subsector.

3.04 Limited Health Service Delivery Capability in the Public Sector. Limited resources severely affect the quantity and quality of public health services. MOH provides regular access to less than one-third of its target population of about seven million persons. Similarly, only one-third of the population has access to water and/or sanitation services; while the figures are around two-thirds for the urban population, only one-sixth of the rural population has either direct service or shared connections. Lack of access is closely related to poverty: two-thirds of those not covered by water or sanitation services belong to the low-income group. Less than two consultations per year are provided to high-risk groups (infants, mothers and children) or less than one-third the recommended level. It is estimated that only 30 percent of reported deliveries take place at MOH facilities with the assistance of MOH staff. Less than one consultation per capita per year is provided to the rest of the target population or one-half the level provided in more efficient systems elsewhere. Although the Government has expressed its commitment to primary care, most of the MOH resources are still allocated for hospital services. Overall, the services provided in MOH facilities are considered of poor quality, and are regarded as inferior to those available in other institutions. PAAMI has had little nutritional impact due to lack of a permanent supply of foodstuffs, whether donated or financed in the country. These problems are caused by administrative, budgetary, and/or legal constraints that have not been adequately addressed. PAAMI's impact has also been limited because it was not well integrated with other maternal and child care services and not targeted to high risk groups.

3.05 While physical infrastructure capacity does not fully cover the country, this is not the limiting factor for expanding access. Public hospital capacity is relatively ample for a country with Ecuador's health status profile. Effective hospital capacity utilization, however, is severely reduced by poor maintenance and inadequate support services. Nearly one-third

of all hospital beds are not usable due to leaky roofs and poor supplies of drugs, other medical inputs, and food. Additionally, the limited effective hospital capacity is poorly managed. While secondary and tertiary level hospitals for specialized care work at close to full capacity, lower level hospitals for general type of treatments are largely empty due to a lack of adequate medical supplies and staffing composition. This imbalance is further reflected by the skewed patient profile: a large proportion of hospital patients at higher level facilities (in some cases exceeding 40 percent) need only simple curative care that could be satisfied more cost effectively by lower-level hospitals if their capacity were enhanced. At all levels of hospital care, moreover, average length of stay is prolonged due to poor patient management (non-emergency patients are hospitalized arbitrarily and often before being diagnosed) and poor quality of care that lengthens the period of convalescence. Poor maintenance of the sparse water and sanitation infrastructure further hinders overall effectiveness.

3.06 Ambulatory facilities (health centers and health subcenters) are similarly poorly utilized. The existing facilities, if optimally used, could provide for the primary health needs of additional population groups. However, this would require that the ambulatory units be: (a) properly staffed with nurses or nursing auxiliaries; (b) supported by a network of village and neighborhood-based promoters; (c) well supplied with drugs and other medical inputs; and (d) supervised by staff from higher-level facilities in the system. Under these circumstances, each facility could satisfy most health promotion and disease prevention needs, as well as simple curative care needs of its target population. Limited operational capability of low-level ambulatory units also precludes developing a referral system, whereby treatment is given at the lowest possible and least expensive level of care. Bunching of patients at hospitals (coupled with low capacity utilization at lower levels of care unnecessarily reduces total service volume. Another consequence of poor operational capacity at ambulatory facilities is unnecessarily high unit and total costs. For example, an opportune oral rehydration treatment --which could be provided at the patient's home with the help of a promoter at a cost of US\$1-- is often not given, requiring a subsequent emergency dehydration treatment at a regional hospital costing US\$80 (US\$20 per bed-day for an average stay of 4 days).

3.07 Procurement and distribution of pharmaceuticals and other medical inputs in the public health sector is affected by administrative bottlenecks in CEMEIM. As a result, CEMEIM supplies only 50-60 percent of the needs of MOH facilities, and 10 percent of IESS and other public institutions. In addition, the pharmaceutical programs under MOH on average supply less than 50 percent of the products included in the country's basic drug list. The operation of MOH drugstores is hindered by administrative and financial difficulties, as well as by lack of adequate inventories to meet local needs. Widespread prescription by MOH physicians of brand-name pharmaceuticals instead of generics contributes to increasing health care expenditures. Indiscriminate practice of self-medication (most prescription-only pharmaceuticals can be bought without a doctor's prescription) has negative effects on rational drug use. The operation of NIH is affected by inadequate physical infrastructure and outdated technology.

3.08 Staffing Imbalances. The university production of physicians during the last years has greatly exceeded the demand by major public health care providers (MOH and IESS) and the private sector. As a result, supply of doctors in the cities is abundant, their services have become relatively inexpensive, and health services have developed physician-intensive staffing patterns. In addition, the rapid increases in enrollment have affected the quality of medical education negatively. This has mostly affected the field of basic health care because the general and family-practice fields are particularly unattractive and usually filled by unqualified or inexperienced doctors (for example, recent graduates who perform an obligatory twelve months' civil service assignment).

3.09 Due to relatively low salaries, the nursing career is relatively unattractive, which has led to an acute shortage of graduate nurses. While midwives are also in short supply, other types of assistants and auxiliary personnel for the medical field and for dentistry simply do not exist. Nursing personnel, graduate or auxiliary, are generally capable in hospital settings; in recent years, nurses have also been trained for public health and community work.

3.10 Inefficiencies in Health Expenditure. Allocative inefficiencies affecting the public health sector. MOH policies, which ostensibly aim at strengthening the delivery of primary health care services, are not supported by the necessary resource allocations. Instead, hospitals continue to receive the largest share of public health resources: approximately four-fifths of MOH expenditures are for hospitals benefiting the urban middle class, while most of the unsatisfied basic needs are concentrated in rural and peri-urban areas. In addition, poor planning and programming in MOH have caused over investment in hospitals and exacerbated the underfinancing of recurrent costs. In most cases, rehabilitating and reequipping smaller, underutilized existing hospitals would have been more cost effective.

3.11 Inefficiencies in program operations are widespread throughout the system. Even though personnel costs absorb the largest share of the MOH budget, the increase in the wage bill is due to overstaffing rather than to growth in the level of remuneration. Overstaffing and limited funding have led to low salaries, which further reduce incentives among health workers. In 1989, physician salaries averaged less than twice the minimum wage, one of the lowest ratios in Latin America. Managers' salaries, which are only marginally higher than those of physicians, fail to compensate for the additional management responsibilities. Low and falling pay levels until 1989, combined with decreasing resources for other operating inputs, resulted in the deterioration of working conditions as well as in the decline in productivity and the quality of care in public health facilities, which apparently have not recovered despite recent salary increases.

3.12 Inefficiencies in the supply of pharmaceuticals (para. 3.07) are related to two health expenditure issues: subsidies and price controls for pharmaceutical products. The Government provided until recently a subsidy to all companies importing pharmaceutical products. Subsidies operated by providing a preferential exchange rate of 600 sucres per dollar to importing firms. It is estimated that the total value of that subsidy amounted to approximately US\$70 million per year. This subsidy represented a major drain

of public resources, since the main beneficiaries were private producers and exporters. The magnitude and importance of the subsidy is better appreciated when comparing its total value with the total amount allocated per year for the provision of health services under MOH (about US\$120 million). In October 1991, the Government announced its plans to eliminate this subsidy as part of the standby arrangement with the IMF.

3.13 The Government also controls the pharmacist's purchase price and the price to the public. The wholesaler has a 16 percent mark-up on the pharmaceutical company's selling price, and the pharmacist has a 25 percent mark-up on that price. If the pharmacist buys directly from the pharmaceutical company, the price paid is 16 percent on top of the company's selling price to the wholesaler. There are no taxes on pharmaceuticals. Price increases are granted for individual pharmaceuticals following an application by the producer. However, increases can take several years to take effect. The experience of numerous countries indicates that price controls introduce price distortions, since they do not allow any change in the price of a product if production costs are either lowered or rise in subsequent years. Data from different developing countries also indicate that price controls may cause: severe disruptions of pharmaceutical supply systems and shortages of adequate supplies, affecting mainly low-income groups who rely on public health services; decreases in the rate of new foreign investment in the pharmaceutical sector; and a decline in the growth rate of the local pharmaceutical industry.

3.14 Weak Managerial Capacity in MOH and other sectoral agencies, at the Central, Provincial and Local Levels. Management weaknesses limit the implementation of policies and programs and constrain sector development. Execution of internally and externally funded programs is delayed or carried out only partially because implementing institutions lack capacity and sufficiently qualified staff. For example, capacity utilization of the food plant is low so food supplementation reaches a small part of the target population. Physicians seldom receive managerial training but are frequently in charge of major health programs. Those who receive management training do not stay long in their positions due to low public sector salaries. Lack of professional managers and poor management practices result in sector institutions with no capacity to plan, execute and evaluate programs effectively and efficiently. Weak logistical support systems disrupt the flow of drugs, supplies, and spare parts. Personnel policies do not encourage productivity, and staffing patterns do not match health care service needs. Cost data is seldom used, even when available, and lags in the availability of information on service statistics severely limit planning and control of service programs. Additionally, investment planning is not linked to budgeting of recurrent costs.

3.15 Managerial weakness at the provincial (MOH) and regional (IESS) levels exists in the areas of leadership, supervision, management information systems, budget control, and cost accounting. Managers at the provincial/regional and lower levels have little authority to plan, organize, staff, direct and control the health programs for which they are held accountable. The combination of external assistance, supply credits, and local political demand led in the past to excessive capital expenditure on hospitals, which was not adequately complemented by hospital staffing and

plant and equipment maintenance, thereby creating a serious imbalance at all service levels between planned programs and available resources. Institutional capacity for delivery of basic sanitation services in rural areas is also weak. The Ecuadoran Institute for Sanitary Works (IEOS), the government agency responsible for this subsector, although sufficiently staffed, has not coped with needs and has not successfully sustained the operation of existing water supply and sanitation services.

3.16 The current Government has strengthened MOH's planning, programming, regulatory, and control capacity. Some of MOH's policies have required revisions to overcome lack of targeting, commitment and sustainability. However, the financial subsystems of MOH are plagued by a series of deficiencies. Budgets are carried over on a continuing basis because of long delays in approving the following year's budget. In addition, MOH does not have decision-making mechanisms that are responsive to operational needs. For example, staff remuneration, which consumes about four-fifths of financial resources for operations, is centrally determined and financed without taking into account changing local conditions. Poorly defined resource allocation mechanisms, as well as poor management controls and accountability contribute to haphazard decision-making.

3.17 In MOH, the locus of decision-making rests with the Minister and the central administration. The provinces are responsible for staying within allocated budgets, providing timely information, and managing material and human resources. However, little authority has been delegated to them to carry out the assigned functions: the central administration determines numbers and types of personnel slots; appoints rural physicians; and approves and arbitrarily increased or decreased budgets. In recent years, there has been much talk about decentralization; however, the implementation of a decentralized model for the provision of health services is severely limited by weak administrative capacity at both the central and provincial levels, as well as the lack of clear operational guidelines for each of them. In addition, community participation has been reduced to a minimum: after being enlisted with promises that were never fulfilled, the degree of apathy to new proposals could be substantial and will require special effort to overcome.

3.18 Lack of Intrasectoral Coordination. All of the sectoral institutions operate independently of one another with only nominal coordination and without much control or guidance from a directing institution or coordinating body. The National Health Council (Consejo Nacional de Salud - CNS), ostensibly in charge of intrasectoral coordination, is inoperative. Its infrequent sessions are attended by low-level staff who discuss matters of secondary importance. Lack of coordination among multiple and diverse service providers, including those in the private sector, results in unnecessary duplication, fragmentation, and inefficiency. These deficiencies are most acutely felt at the planning and policy level, particularly in the areas of capital expenditure planning and population served. Wide disparities also exist among sectoral institutions in personnel payment systems, equipment patterns, and treatment protocols. As a result, indicators of performance and outputs are not comparable.

B. Government Sectoral Strategy

3.19 The Government has been actively engaged in a sectoral dialogue with the World Bank and has issued several policy statements where priorities in the entire social sector have been identified. Improvement of coverage and quality of basic health services are among the highest priorities. To achieve this objective, a basic health program has been designed to provide an integrated package of services and strengthen the organization and management of service delivery. The basic package of services targeted to the poor includes prenatal care, child delivery, and postnatal controls, as well as basic care for adults; immunization; health education; nutrition education, surveillance, and food supplementation; and family planning services. Physical expansion of the basic health network and institutional development of MOH management, planning, and administrative capacity have also been proposed to implement the Government's program. While enhanced emphasis of basic health services under this program appears to have gained political acceptance, it has not yet been implemented on a wide scale and requires further strengthening.

IV. ASSISTANCE STRATEGY FOR THE SECTOR

A. Bank's Role and Assistance Strategy

4.01 Several World Bank studies stress the importance of social sector programs in alleviating poverty, and also emphasize the need for enhanced public responsibility in the social sector and for improved public sector management. The proposed project forms an integral part of the Bank's strategy for country assistance, which recommends several fundamental changes in the economy, including: (a) a redefinition of the role of the State, devoting greater attention to areas of clear public responsibility such as social welfare; and (b) replacing the existing protectionist trade regime and the inefficient and constraining labor market policies with a set of economic incentives that are likely to stimulate economic diversification and a greater outward orientation of the country. The Bank strategy supports Government proposals for the social sector and includes in its core lending program a set of projects for poverty alleviation in the social sectors.

4.02 The Bank strategy for the social sector aims at: (a) giving priority to social sector programs as the instrument for poverty alleviation; (b) establishing efficiency and equity in public social expenditures; (c) strengthening public sector decision-making and management; and (d) enhancing effectiveness of specific social programs. The basic means for addressing the issues identified are: (a) strengthening the budgeting process; (b) decentralization of social programs and project implementation; (c) reinforcing social sector staffing; and (d) fostering the role of the social sector in promoting economic growth and efficiency. The priority social sector programs selected for support include basic education, training for poor adults, basic health and nutrition, and investment funds for social assistance and infrastructure. The Government has presented to the Bank project proposals for the first three.

4.03 The Bank produced a 1986 population, health, and nutrition sector report that provided a comprehensive description of the sector, including

demographic, epidemiological, and nutritional profiles, sectoral resources and programs; and a subsequent 1990 social sector report analyzed social sector finance, efficiency and equity. With the exception of these two reports, the Bank has not had a major involvement in the health sector. The preparation of a proposed health and nutrition project has been supported by a Project Preparation Facility Advance (PPF-110-EC) of US\$372,000 which was approved on May 29, 1987, in response to a proposal for a project in the sector stemming from the Bank's PHN sector review. Original project scope and objectives were redefined in 1990 to meet the country's needs and priorities as analyzed in the social sector study. More recently, on August 9, 1991, the PPF Advance was increased by US\$700,000 (PPF-110-1-EC) for supporting ongoing project preparation activities included in the basic health care and sector policy and institutional development components; pilot testing of the MOH's basic health care, sanitation, and local health systems initiatives; and financing information workshops and dissemination activities to give broader exposure to the health care program to be adopted.

B. The Role of Other Bilateral/Multilateral Agencies

4.04 The U.S. Agency for International Development (USAID) has been the principal source of external financing for Ecuador's public health system in the past decade. At present, there are eight health-related projects financed by international donors. The largest of these projects is a five-year, child survival project funded by USAID and MOH, which started in 1989. With a budget of approximately US\$28.3 million, the main objective of the project is to reduce infant mortality in eight provinces that account for 70 percent of the country's population. This is being done through the development of special programs targeted to infants and pregnant women. The project, which is also trying to increase the participation of the private sector in these efforts, has had implementation delays. USAID has also sponsored rural water and sanitation activities through an on-going, four-year, US\$4 million project with IEOS. A new USAID-financed project, amounting to US\$10 million, has been recently signed to support improvements in the delivery of family planning services through NGOs. Another child survival project is being funded by the United Nations Children's Fund (UNICEF) over the 1991-93 period. This US\$3 million project will finance health and nutrition interventions focused on improving child welfare.

4.05 In 1990 the United Nations Fund for Population Activities (UNFPA) began funding a four-year maternal health care and family planning project. The project aims to increase coverage and strengthen maternal health care and family planning programs, as well as to train staff and improve management capacity for the delivery of these services. The total project cost is US\$15.5 million. Maternal and child care is the focus of a project financed by the World Food Program (PMA), which will provide food supplements to pregnant and breast-feeding women as well as to their children. The total cost of this five-year project, which began in 1991, is US\$19 million.

4.06 The Pan American Health Organization (PAHO) and the Government of Holland are sponsoring a four-year project to strengthen the pharmaceutical supply system in the public sector. This project, which was initiated in 1991, has a total cost of US\$1.5 million. Finally, a US\$2.8 million project that aims to expand the coverage and improve the quality of dental services,

particularly in rural and peri-urban areas, began to be implemented in 1991. This project is being funded by a debt-for-health swap mechanism and by contributions from both local private organizations and the Government of Canada.

C. Lessons From Past Experiences

4.07 Since the proposed project would be the Bank's first free standing health and nutrition operation in Ecuador, the review of past experience covered 38 Bank-financed health sector projects completed in other countries, and 34 SARs, PCRs, and Audit Reports on nutrition and sanitation projects in LAC, Asia, and Africa 1/ 2/. In addition, an effort was made to review Bank experience in Ecuador in other sectors.

4.08 In general, a number of Bank-financed health projects have been affected adversely by the following factors:

- (a) Lack of borrower's full commitment to the project, leading to lack of compliance with loan covenants which is aggravated whenever there is a change in the national government and/or in local staff, often leading to a change in priorities;
- (b) An overly ambitious and complex design, which overloaded institutional capacity for project coordination and implementation. This was particularly a problem for primary health care projects located in rural areas, where inadequate or undependable communication systems further hindered coordination and managerial staff was the weakest;
- (c) Lack of attention in project design to sociological factors, such as beneficiaries' characteristics, traditions, and values, which could contribute to institution-building and increased community participation;
- (d) Lack of organizational design that lends itself to hasty decisions, throwing the project into a quagmire of bureaucratic delays. A number of projects tried to counter this problem by creating a special project implementation unit in the Ministry of Health. While this expedited decision-making, it also led to communication problems, jealousies among agencies, and lack of cooperation from the regular public sector staff;
- (e) Poor quality and delays in construction of health facilities as a result of lack of supplies, inexperienced contractors, and

1/ Sources include (i) 38 SARs, PCRs, and Audit Reports on health projects in LAC, Asia and Africa; (ii) World Bank reports including: Case studies of project sustainability: implications for policy and operations from Asian experience by Michael Bamberger and Shabbir Cheema, Operational Policy Review: Compliance with Loan Covenants (Report No: 4090), and Population, health and nutrition annual sector review for 1990; (iii) the following peer review articles: Can they get along without us?: sustainability of donor-supported health projects in Central America and Africa by Thomas Bossart, Problems of implementation by Peter Bowden, Recurrent costs in the health sector of developing countries by Cairns Waddington and Margaret Thomas, and The place of local social realities in development work by C.R. Willson-Pepper.

2/ Sources include: (i) 34 SARs, PCRs and Audit Reports on nutrition and sanitation projects in LAC, Asia, and Africa; (ii) World Bank reports including: Addressing malnutrition in Africa by F. James Levineon, Nutrition and health programs in Latin America by Guy P. Pfefferman and Charles C. Griffin, Fighting malnutrition: an evaluation of Brazilian food and nutrition programs by Philip Musgrove, Improving nutrition in India by K. Subbarao, and Malnutrition: what can be done? by Alan Berg.

inappropriate building designs for the project area. These problems were often exacerbated in rural areas where contractors were frequently reluctant to work and supplies were more difficult to obtain due to difficulties related to the remote and isolated location of the health centers. In large projects, the construction component often overshadowed all other project components in terms of planning, budget allocation, and supervision;

- (f) Inadequate staffing to operate health facilities in rural areas where working and living conditions are often severe and isolated. Several previous projects have noted a high level of job dissatisfaction and job desertion among those health professionals working in rural areas;
- (g) Failure to establish a strong, long-term monitoring and evaluation system with which to assess the full impact of the project. This system should lend itself not only to evaluation of the number of physical achievements, but also to evaluation of the long-term, distributive impact the project has had on general welfare;
- (h) Lack of project sustainability on termination of the Bank loan as a result of the borrower's inability or unwillingness to finance recurrent costs. In previous primary health care projects, financing of recurrent costs associated with maintenance of health centers in the more remote areas has been a serious problem.

4.09 On the other hand, successful Bank-financed primary health care projects were characterized by built-in flexibility, allowing review and revisions as the project progresses; involvement of highly-qualified staff; careful attention to field supervision, particularly in rural areas; strong project leadership; and a significant level of public respect for the government.

4.10 In nutrition, successful projects were those that: (a) were integrated across various sectors, particularly with health-related interventions; (b) incorporated a number of different strategies; (c) were located in areas with a high population density and a high level of administrative capacity; (d) utilized local resources, including both food and personnel; (e) were designed on the basis of relevant and recent nutritional data for the geographical region; (f) carefully targeted the population to be served; (g) recognized the importance of maternal nutrition on child health; and (g) established during project design a system for undertaking nutrition-related impact evaluations.

4.11 Other lessons from past experiences directly related to project's nutrition component are:

Nutrition education: Nutrition education focusing on breast-feeding, weaning foods, dietary management of diarrhea and other infectious diseases, delayed solid food supplementation, and increased frequency of feeding have been successful in improving the nutritional status of targeted groups in previous Bank projects. Successful breast-feeding promotion programs have been found to reduce diarrhea morbidity.

Successful programs include media campaigns targeted to the general public, as well as training for health personnel, changes in hospital routines, and active discouragement of infant formula use. In general, nutrition education has been most effective when it has focused on changing behavior and when the messages and materials were developed with and tested on intended beneficiaries using social marketing techniques.

Growth monitoring: Growth monitoring has been used to target food and other health interventions most effectively when children under age three are monitored, when it is undertaken with educational and/or follow-up programs, and when it involves parents. Weight gain is a more useful indicator for nutrition education and therapy than the classification of a child as malnourished or well-nourished based on his/her weight.

Food supplements: The use of food supplements has been found to be most beneficial when two sets of conditions are met. First, the food should be accompanied by nutritional counselling and growth monitoring. Second, the food rations themselves must be acceptable to the recipient population, be of sufficient quantity to meet nutritional objectives (allowing for some leakage), and should facilitate self-targeting within the household. It is also desirable that the food products distributed are locally produced and that the program target population groups with the greatest nutritional needs (i.e., children under the age of three as well as pregnant and lactating mothers).

Micronutrients: Successful micronutrient supplementation programs have targeted sizeable population groups for obtaining economies of scale and used a product that can be produced in large quantities. The products used for micronutrient supplementation have been carefully chosen so that the taste, odor, and appearance of the food is not altered when the micronutrient is added and to ensure that the micronutrient will remain stable during storage.

4.12 Experience has clearly demonstrated that successful water and sanitation projects respond to effective demand, as indicated by the community's willingness to participate and contribute. To this end, several Bank projects have involved the community in constructing water and sanitation facilities and introduced cost-sharing schemes for ensuring the financial sustainability of the installed systems. In some cases, the impact of the cost sharing schemes has been limited because the user fees, which many communities have been willing to pay after they have been involved in the construction of the facilities, were not set high enough to cover maintenance costs. Increased community's willingness to pay for water and sanitation services is related to perceived economic and social benefits such as time reduced fetching water, available water in the household, and privacy of sanitation facilities. Institutional failure has been the most frequent and persistent cause of poor performance of projects in this sector. Strong local organization is therefore needed to oversee the continued operation of the installed facilities, particularly for ensuring appropriate fee collection and infrastructure maintenance.

4.13 Considering these lessons, the design of the proposed project (para. 5.05-5.44) emphasizes a number of characteristics. First, while addressing fairly complex issues, the project components have a simple, straightforward design, addressing a first slice of basic health care investment requirements in the Ecuador health sector (paras. 5.07, 5.18, 5.26 and 5.35). Second, flexibility has been instituted in the project by providing PPF financing for pilot testing organizational and service delivery strategies that can then be adjusted to local conditions and replicated on a national scale during project implementation, particularly at the comprehensive mid-project review. The gradual incremental approach adopted for expanding the coverage of basic health and nutrition services in rural and peri-urban areas across the country would also serve to operationalize further and fine tune the design of services during project implementation (para. 5.06). Third, to facilitate project decisions, a Project Coordination Unit has been created for project preparation and would continue during project implementation (paras. 7.02 to 7.04). The Unit would be fully integrated into the MOH management structure and make all decisions by consensus to ensure the full involvement of the regular MOH departments and provincial and local levels in project implementation decisions. Also, coordination mechanisms have been established with other donors, particularly PAHO, IDB, USAID, and UNFPA, to avoid duplication of effort and develop complementarity in the implementation of respective projects. And finally, increased community participation would enhance effectiveness of basic health interventions and of infrastructure maintenance, including that of water and sanitation (paras. 5.08, 5.14, 5.32 and 5.33).

4.14 For projects in other sectors, the need to assure that the Government of Ecuador will be able to meet counterpart funding obligations is the most frequently mentioned among project implementation issues. It should be emphasized, however, that this is related to both project objectives as well as the more general matter of budget processes and priorities. The proposed project, through its institutional strengthening component, would finance technical assistance and training to improve the budgeting and planning capacity within MOH at the central, provincial, and local levels. In addition, the project would include annual sector reviews and project budget reviews during supervision (para. 5.03). Also, continuity of project implementation has been hindered by changes in governments. However, the Government has emphasized the long-term perspective of the proposed project activities and political leaders outside of the Government have shared project objectives. In addition, flexibility of project design would facilitate minor adjustments needed for assuring continuing support.

V. THE PROJECT

A. Project Origin

5.01 The proposed project has been prepared based on the Government of Ecuador's community and family health care program, and on the conclusions of Bank Report 8935-EC, "ECUADOR: A Social Strategy for the Nineties," which the Government and the Bank agree should serve as the centerpiece for developing the Bank's social sector lending program in the country. The lessons learned from past Bank-supported project experiences were also taken into account in designing the proposed project (para. 4.07-4.14). Dialogue with the social

sector ministries has continued since the beginning of the present Government in 1988. A First Social Development Project on Education and Training was approved on December 17, 1991. In the health sector, progress has been achieved with MOH toward defining policies and programs. The Government is committed to the proposed project, in particular to increased emphasis on basic health care, and the project's underlying concept has been shaped through extensive dialogue. Project preparation was conducted during 1990/91 by MOH under PPF 110-EC and more recently under PPF 110-1-EC. Appraisal was completed January 24, 1992; a post-appraisal of the basic sanitation component was completed March 6, 1992. Negotiations took place in Washington D.C. during June 1-4, 1992. At negotiations, the Government delegation was headed by Dr. Plutarco Naranjo, Minister of Public Health, and included representatives of the Ministries of Health and Finance.

B. Project Objectives, Rationale and Domain

5.02 Project Objectives. The proposed project would support the Government's planned development and investment programs for the expansion and strengthening of basic health and nutrition services, including basic sanitation. More specifically, it would: (a) expand gradually basic health care, nutrition, and sanitation coverage to reach the poorest population groups; (b) improve the quality of basic health care services already provided to the poor; and (c) strengthen decision-making and management of public institutions involved in the delivery of basic health, nutrition, and sanitation programs.

5.03 Rationale for Bank Involvement. The proposed project is targeted towards the poorest sectors of the population, particularly women and children, in rural and peri-urban areas across the country. Financial and technical support from the Bank would assist in addressing issues of low coverage and poor performance of basic health care, nutrition and sanitation programs, limited capacity to implement programs and projects, and ineffective resource allocation processes. Two major policy impacts of the project would be establishing priority of primary health care services and strengthening the MOH's planning and budgeting process. The latter would be pursued in close conjunction with similar efforts in the education sector. The social sector study and other Bank economic studies have identified Ecuador's budgeting and decision-making problems and this project would provide sector-level experience to support the overall budget reform measures being pursued at the macroeconomic level. The project would: (a) strengthen project implementation capacity, using existing staff of the agencies involved; (b) provide enhanced project supervision, which would include sectoral budget reviews; and (c) finance technical assistance to strengthen decision-making and budgeting processes.

5.04 Project Domain. MOH has formulated a long-term health sector development plan for the entire country that is serving as a framework for the involvement of international donors in the sector. To this end, MOH divided the country into 195 local health service areas according to a poverty taxonomy that considered geographic, demographic, socioeconomic and health criteria (Annexes 4-5). Of this total, 130 areas were identified as comprising the most underdeveloped communities in the country, and thus the target for the long-term health sector development plan. On the basis of the

proposed plan, MOH prepared a medium-term investment program covering the poorest 71 areas (MOH would expect the remaining 59 areas to be covered after experience gained in the implementation of the proposed investment program permits a clear assessment of the long-term implementation capacity in the sector). The medium-term investment program has been divided into two parts, the first of which constitutes the proposed project, and covers 40 areas (see Annex 4-1); the IDB is considering covering the remaining part of the investment program under a project to be implemented beginning no earlier than 1994. To begin project implementation, eight areas in six provinces (Azuay, Chimborazo, Guayas, Loja, Manabi, and Pichincha) would be covered during the first two years. In the following years of project implementation, an additional 32 areas would be covered. While an initial definition of these areas appears in Annex 4-1, their precise location would depend on the timely beginning of the IDB project. The mid-term investment program, in the selected areas covers a target population of approximately 3.2 million Ecuadorans, including underserved indigenous groups, representing 30 percent of the total population in the country. Of these, 70 percent live in rural and 30 percent in urban areas. The mid-term investment program would cover 65 percent of the total population included under the development plan, and the proposed project 38 percent. The Government furnished the Bank a copy of Presidential Resolution No. 3292 dated April 29, 1992, establishing the local health service areas (para. 9.01), (see Action Plan, Annex 11).

Table 5.01: Health Development Plan and Investment Program

Number of Areas/ Population Served	Plan	Program	Project	
PROVINCES	20	16	--	(6)
HEALTH SERVICE AREAS	130	71	40	(8)
POPULATION (millions)	5.3	3.2	2.0	(.4)

The numbers for the first two years of project implementation appear in parentheses.

C. Main Features of the Project

5.05 The proposed project would pave the way for the introduction of critical efficiency and equity reform measures in Ecuador's health sector. The focus of this project is establishing primary health care as the MOH priority with an emphasis on preventive care at the community level. During project preparation, MOH in cooperation with PAHO revised and modified the orientation and content of its primary health care programs, as well as the mechanisms for delivering them. An integrated primary health care program was formulated to improve health, particularly infant and child survival and maternal health, and reduce the prevalence and severity of the most common diseases in project areas, considering the family as the basic unit to be targeted. Additionally, procedures detailing the type and quantity of

services to be provided were prepared. In designing the project, MOH applied two principles: first, for basic health care to be effective it must address peoples' health needs with timely and effective services within a context that recognizes the important role that both the family and the community play in health care; and second, for basic health care services to be efficient, health resources must be adequately organized for delivering well-defined interventions. Implementation and sustainability of this project would depend on strengthened decision-making and management at MOH and its affiliate institutions.

5.06 The proposed project would have four components. The first is a basic health care component that would support MOH in strengthening the organization and use of resources for delivering primary health services. The second, a nutrition component, is geared to improve overall nutritional status of pregnant and breast-feeding women, and children under the age of three. A third component, basic sanitation and safe water, would improve access to safe water and latrines in select rural areas. The fourth component, aimed at policy and institutional strengthening, would assist MOH in strengthening its planning and management capacity. Due to the complexity of some of the issues addressed, instead of attempting to address all of them fully from the beginning, the project is designed to support initiation, and/or development and pilot testing, of some policy and operational reform measures in the fields of: delivery mechanisms for nutrition and safe water and basic sanitation services; health care decentralized organization and management; supply systems for pharmaceuticals and other medical inputs; cost recovery for pharmaceuticals; budgeting and programming; and incentives for primary health services workers (para. 5.22-5.25, 5.26, 5.04, 5.09, 5.15-5.16, 5.36-5.41). This gradual incremental implementation approach chosen for the project is one of the features giving the project the desired flexibility (paras. 4.13 and 4.14) as to allow the Government to test and fine tune policy, service delivery, and institutional reform measures in a limited number of areas before introducing them in the rest of the country.

D. Detailed Project Description

BASIC HEALTH CARE (Annexes 4-7), US\$69.8 million, including contingencies, 68 percent of total project costs.

5.07 This component is aimed at increasing the capacity of primary health care programs to provide, in an efficient manner, appropriate care for main health problems (about 80% of them) near the residence of potential users. Actions are targeted to the poor, especially to families with high health risks, and focused on the health problems whose solution at the basic health care level have a greater impact on health status. The proposed basic health care program would improve health, particularly infant and child survival and maternal health, and reduce the incidence and severity of the most common diseases in the project areas. The project would focus on providing care to the family as the basic unit to be targeted at the community level and would reduce emphasis on curative care administered to individual patients at hospital facilities. Priority would be attached to the provision of services that integrate health promotion, disease prevention, early detection and treatment interventions, both at ambulatory centers and local hospitals, as necessary parts of a comprehensive health program. A referral system would be

used to handle more complex problems. The health problems to be addressed and the corresponding specific goals are described in Annex 6. Interventions would include pre-natal, delivery and post-partum care; promotion of reproductive care, including family planning services; child development, including vaccination and nutritional control and supplementation; and prevention of waterborne and acute respiratory infections, including cholera (see Annex 6 for a detailed list of activities).

5.08 Outreach activities would be undertaken by basic health-care teams comprised of 1-2 physicians, a dentist, 2-10 nurses and auxiliary personnel, which includes community health assistants to be trained after being chosen by the health team from candidates presented by the community. Each health team, which would be based in a health subcenter, would be responsible for about 600 families. The health team would visit each family at least once every 12 months. During this visit, the health team would assess the family's health and nutritional risks and their medical needs, and would work with the family on a basic follow-up plan, particularly for pregnant and lactating women and children under the age of three. This visit would be followed by at least four yearly visits (depending on the needs of the family), typically made by the community health assistant, although a physician or a nurse would visit when necessary. In his/her visits, the health assistant would: monitor individual and environmental risks factors as well as changes in habits and behavior; provide education on health promotion and disease prevention; administer simple treatments; and refer the family members to the proper health facility when needed. Active community involvement in the basic health care program would be sought. The community health assistant would become the principal nexus between the community and the health system, ensuring that the delivery of health services is consistent with the beliefs and values of the community, particularly in areas with a large concentration of indigenous population. A decentralized organization with increased capacity for solving basic health problems is proposed as the means for delivering the program. NGOs could play a substantive role undertaking responsibilities in some of the local health service areas (para. 5.09).

5.09 Organization of Health Networks. The delivery channel for the integrated primary care program package would be an improved network of local health service areas, similar in nature to those implemented in other countries in the region under Bank loans (e.g., Ln. 2061-BR, Ln.2447-BR, Ln.2699-BR). The organization of resources into health areas is a strategy to improve efficiency, effectiveness, and access to basic health services, as well as to decentralize health care administration. Health areas, identified by the MOH during project preparation (para. 5.04), are well-defined geographic regions within which health care delivery facilities of different levels of complexity would interact with one another both functionally and administratively for the provision of household, ambulatory, and first-level hospital care to well-defined groups of families or population groups at the local level. The health areas would complement the MOH's central and provincial levels, assuming increased responsibility as the new primary-level administrative units of the system for the physical, human, and technological resources in a region, including health subcenters with their outreach teams, health centers and first-level hospitals. A detailed description of the functions and content of ambulatory and basic hospital care to be provided in each health facility as well as average staffing patterns in each health

facility, within an area is included in Annex 7. About 40 health areas would be organized under this project. Recently, a Directorate of Basic Health Care Services was created at the MOH's central level to assist in the implementation of the integrated primary health program, and piloting of three local health areas has started under PPF-110-1-EC funding. At least one of the areas to be developed during the first two years of project implementation would be under the management of an NGO.

5.10 The proposed structure of the health areas would depend on: population distribution and its characteristics, territorial boundaries, and the existing access to health facilities, including their number and the complexity of services offered. Four types of area modules have been defined: the rural module; the small urban module; the intermediate urban module; and the metropolitan module. A rural module would cover a population of 30,000 to 50,000 inhabitants, with 5 to 7 health subcenters and one local hospital; professional staff would make periodic visits to the small communities that lack subcenters. A small urban module would cover typically about 15,000 to 25,000 mostly poor residents in small cities with populations of 35,000 to 70,000; it would have 2 to 4 health subcenters and one local hospital. An intermediate urban module would cover some 25,000 to 40,000 primarily poor inhabitants in mid-size cities (population about 100,000) with 4 to 6 health subcenters and one health center (general medicine, emergencies and mother-child specialties); patients would be referred to city first or second-level hospitals as required. Each metropolitan module would cover a population of 60,000 to 70,000 inhabitants in Quito and Guayaquil, with 6 to 8 health subcenters and one metropolitan health center that would provide 24-hour emergency and maternity services, general medicine, and specialties in mother-child care and other fields. Headquarters for each area, where management tasks would be performed, would be located at the facilities of the respective highest complexity area unit. For the delivery of basic health care under the decentralized network organization proposed, the project would support: (a) improvement of health facilities; (b) improvements of the staffing of the health networks; and (c) provision of pharmaceutical and other medical inputs. Annex 7 provides additional details on each of these modules.

5.11 Improvement of Health Facilities. In assisting MOH to set up local health service areas for the delivery of the primary health care services package to the 2 million project beneficiaries, the project would finance: (a) constructing, furnishing, equipping and maintaining about 75 new health subcenters (26 rural and 49 urban), about 8 new health centers, and about 5 metropolitan centers; (b) upgrading, rehabilitating, repairing, complementary equipping, and maintaining about 130 existing health subcenters (70 rural and 60 urban), about 9 existing health centers; and (c) upgrading, rehabilitating, repairing, equipping, and maintaining about another 12 existing local hospitals. The project would also finance 7 ambulances and 32 vehicles to transport patients, and the establishment of a maintenance system for infrastructure and equipment. Based on agreed poverty criteria, Government and the Bank have identified the health service areas to be developed under the project (paras. 5.04 and 5.09). Geographic areas and sites for physical infrastructure development during the first two years of project implementation have been agreed. During negotiations, assurances were obtained that site selection for infrastructure development and rehabilitation

programs during the remaining years would be presented for Bank review prior to implementing the corresponding investments (para. 9.02a).

5.12 Health Networks Staffing. Two new types of staff for the delivery of health care services would be developed under the project: a community health assistant and a dental assistant. On the basis of the patterns and average quantities presented in Annex 7-1, staffing of the health networks that would deliver improved services to 2 million beneficiaries would require a total of about 4,900 health personnel, distributed among 1,300 physicians and dentists, 2,000 nurses (and nursing and dental assistants), 300 medical technicians, 700 community health assistants, and 600 administrative staff, including facility directors and area coordinators. The total represents about 16 percent of the present staff of MOH. Given existing overstaffing in the sector, reallocation of existing positions at MOH would be desirable to satisfy the project staffing needs. However, because of professional profiles, geographic location and institutional and legal constraints, redeployment cannot be fully relied upon. It would, anyway, be used to the fullest extent possible. Thus, about 2,000 existing MOH staff are already assigned to activities of primary health care; another 1,300 would be assigned through redeployment of existing MOH staff and the remainder 1,600 would be incremental staff under the project (see Annex 7-4, and Action Plan, Annex 11). During negotiations, assurances were obtained that the Government would implement the annual programs and timetables specifying levels of new and redeployed staff agreed with the Bank (9.02b). The project would finance salaries of about 1,600 incremental staff for basic health service facilities and area offices (including supervision personnel) and expenses associated with incentives for currently allocated staff and redeployment of staff. Incentives, monetary and non-monetary, would be based on performance measured in accordance with project objectives.

5.13 Staff development for appropriate implementation of the basic health care program at the different facilities within local health service areas would require a significant training program for existing and new staff (see Annex 7-2). The loan would finance (a) pre-service and in-service training for about 4,500 staff, including community health workers, dental assistants, supervision personnel, medical technicians, and selected administrative personnel; (b) training equipment and materials; and (c) preparation, printing and distribution of manuals and other printed materials.

5.14 To enhance community participation in health care delivery programs, public campaigns would be directed to informing and motivating the general public about changes in health services and on how to adapt the demand for health services to the new delivery structure supported by the proposed project. These campaigns would also promote increased community participation in the organization and delivery of health services at the local level. To this end, the project would fund the design and undertaking of campaigns to widely disseminate information regarding the proposed changes in the health services delivery system, and the production and distribution of informational materials.

5.15 Pharmaceuticals and Other Medical Supplies. In view of the Government's commitment to implement policy changes in the area of pharmaceuticals (para.3.12), the project would finance the procurement and distribution of generic drugs included in the country's basic drug list (see

Annex 7-6) to satisfy needs of users of MOH facilities in project areas. Basic medical supplies would also be financed under the project. A detailed list of drugs and medical supplies to be procured under the project has been prepared, reviewed during appraisal, and incorporated in the project files. The list includes essential drugs to address causes of childhood and maternal mortality and morbidity and communicable diseases, such as cholera and tuberculosis, as well as other drugs for clinical purposes. Following Bank guidelines, CEMEIM, on behalf of MOH, would act as a procurement agent, and distribute drugs and other consumables to health facilities in project areas. The NIH would be in charge of assuring the quality of delivered pharmaceutical products. CEMEIM has experience in the procurement and distribution of drugs and other medical supplies, and the NIH in quality control of pharmaceuticals (para. 2.10). However, to strengthen the capacity of CEMEIM, NIH, and the local health service areas's facilities for procuring, distributing, and dispensing pharmaceuticals and other medical supplies, the project, in conjunction with the ongoing PAHO/Government of the Netherlands Project (para. 4.06), would provide technical assistance and training on: (a) selection; (b) procurement according to Bank guidelines; (c) quality control; (d) stock management; (e) accounting; (f) cost recovery; and (g) prescription and dispensing practices. During the first two years of project implementation, the distribution of drugs and other supplies would correspond to two months of operation in urban and peri-urban health facilities, and to four months in rural health facilities. The adequacy and the effectiveness of these procurement and distribution arrangements would be reviewed during the project's mid-term evaluation and modified as necessary (para. 7.06).

5.16 Consistent with existing Government policy, those drug products included in two of MOH's pharmaceutical programs (MEGRAME --only for children under 5 years of age-- and High Risk Diseases) would be distributed to users free-of-charge; remaining products of basic drug list would be sold under a cost-recovery scheme to be established in project areas (see Annex 7-7, and Action Plan, Annex 11). Monitoring of the scheme during the first two years of project implementation would provide bases for adjusting cost recovery policies and doing the corresponding financial projections for the remaining years of the project. During negotiations, assurances were obtained from the Government that generic drugs not included in the two MOH free-of-charge pharmaceutical programs would be sold to users under a cost-recovery scheme in the different facilities of project areas, so that by mid-term review 30 percent of total basic drug costs would be recovered through user charges and 35 percent during the May 1996-December 1998 period (para. 9.02c). It is likewise expected that attempts would be made to recover 40 percent by the end of the project.

5.17 Studies to assess (a) alternative procurement and distribution methods for drugs and other medical supplies, including the private sector, and (b) the impact of the Government's price control policies for pharmaceuticals would be completed by the end of the first year of project implementation (see Action Plan, Annex 11). The first study would focus on the internal efficiency of CEMEIM; the current procurement procedures being used by public and private providers; and alternative procurement and distribution methods, including proposals made by ASOPROFAR, the association of private producers of pharmaceuticals. The study would contain recommendations about necessary legal and institutional changes, and

estimations of cost savings from proposed changes. The second study would analyze the effects of price control policies on: the price structure for pharmaceuticals; the Government's quest to provide basic drugs at lower cost; the adequacy of pharmaceutical supply systems; the rate of new foreign investment in the pharmaceutical sector; and the growth rate of the local pharmaceutical industry. On the basis of this analysis, the study would prepare recommendations on policy reforms and alternative cost containment strategies in the pharmaceutical field. During negotiations, assurances were obtained that Government would undertake studies in the areas of drug procurement and pricing. The results of these studies would then be reviewed with the Bank and agreed recommendations would be carried out as appropriate (para. 9.02d).

NUTRITION (Annex 8), US\$6.4 million, including contingencies, 6 percent of total project costs.

5.18 Building on PAAMI experience, nutrition interventions to be financed under the project would be an integral part of the basic primary health care package to be provided in health facilities of project areas. The integration of health and nutrition interventions for groups at highest risk proposed for the project is considered to be a cost-effective approach for addressing Ecuador's twin problems of poor health and malnutrition among children and pregnant and lactating mothers because children who are born malnourished are more susceptible to childhood illnesses like measles, whooping cough, respiratory infections, and diarrheal disorders. The aim of the nutrition component would be to improve the overall nutritional status of pregnant and breast-feeding women, and children under the age of three, by supporting: (a) nutrition education and promotion; (b) growth monitoring and counselling to those in need; and (c) provision of food supplementation and micronutrients.

5.19 Nutrition Education and Promotion. The objective of this activity would be to improve nutritional practices among the general population, particularly changing behaviors with respect to breast-feeding and infant feeding, dietary quality, and hygiene. To this end, the project would first support training for health personnel so that they would become effective disseminators of nutritional messages. A local professional team previously trained in lactation management in an international center would be in charge of this activity. Once trained, health workers would provide nutritional counselling as part of routine health care to be offered at local health service area facilities and at the household level. The project would finance: 36 workshops for health workers, 24 in the second year of the project, and 4 annually in the remaining years of project implementation; and 72 additional follow-up workshops to reinforce the first set of workshops, 24 annually beginning in the second year of project implementation. Second, the project would support the development of nutrition-related messages and materials, including mass media campaigns. A professional social marketing firm in consultation with the MOH advisory group on infant feeding would be in charge of nutrition education strategy development and implementation; the experience acquired by MOH in implementing a cholera-related education campaign would be taken into account in designing the campaign. Included among the themes of the campaign would be information on breast-feeding and infant feeding, dietary quality, and hygiene. To support these two

activities, special educational materials would be developed by MOH for distribution to the general public.

5.20 Under this strategy, emphasis would be placed on the dissemination of information on appropriate breast-feeding practices to both health personnel and the general population. Although breast-feeding practices in Ecuador are better than in other similar Latin American countries, the general consensus within MOH is that the practice is declining among women within urban areas and in the middle- to high-income groups due to inadequate hospital practices (e.g., lack of or inappropriate counseling by health personnel) and the incorporation of women in work activities outside the household. To promote breast-feeding among lactating women, health personnel would be specially trained during the implementation of the training activities indicated on para. 5.19, and the nutrition-related media campaigns targeted to the general population would include messages about appropriate breast-feeding practices. Additionally, breast-feeding practices of mothers with children aged one, three, and six months would be monitored as part of regular nutritional surveillance in local health facilities.

5.21 Growth Monitoring. Growth monitoring, when used to target counselling and other support, is one of the key interventions for improving the health of children. Likewise, monitoring the nutritional status of pregnant and lactating mothers is an essential intervention for identifying beneficiaries of food supplementation programs, and reducing infant mortality. The project, therefore, would focus on strengthening the capability of MOH personnel for growth monitoring and counselling to these target populations. Health personnel would be trained in this skill during the workshops listed in para. 5.19 and would be required to monitor routinely children and women as part of the delivery of integrated primary health care services. The project would finance the procurement of scales and measuring tapes, as well as the design and production of growth cards for children and pregnant women. WHO growth monitoring norms would be used to detect malnutrition among children under 3 years of age (defined by weight gain or lack thereof), and the Rosso-Mardones norm would be used to identify malnutrition among pregnant women (i.e., women with weight-for-height under 95% of standard weight at the beginning of the pregnancy and less than 120% of standard weight at the end of the pregnancy are classified as underweight or malnourished). During preparation of growth cards specific recommendations on weight gains would be reached. In addition, the project would ensure that the collection, analysis and use of nutrition-related information be compatible with the requirements of the Nutritional Surveillance System (SISVAN), currently being implemented by CONADE with UNICEF support for nationwide monitoring and evaluation of nutritional status (i.e., two standard deviations of weight-for-age would be used as the cutoff to define malnutrition).

5.22 Provision of Food Supplements and Micronutrients. A pilot food supplementation scheme for all children between 6 and 36 months of age and pregnant and lactating women in project areas would be established. In supporting this activity, the overall objective would be to evaluate the cost-effectiveness of food supplementation on health services use by the poorer segments of the population, who are at most risk of malnutrition. To this end, the project would support the undertaking of an evaluation study during the third year of project implementation (see Annex 8 and Action Plan, Annex

11). During negotiations assurances were obtained that the Government would undertake the evaluation study, review with the Bank the corresponding recommendations, and carry out as appropriate the measures agreed with the Bank (para. 9.02d). If the pilot experience is successful, the proposed food supplementation scheme would continue to operate in project areas and eventually would be replicated in the entire country. Under this scheme, each beneficiary would receive a low-cost food product according to a programmed schedule of visits to local health facilities. The cost per beneficiary per year would be about US\$9.60. During these visits, participants in the food supplementation scheme would receive other services, such as immunizations, early detection and treatment of diseases, and health and nutrition education.

5.23 A second complementary targeted food supplementation scheme would also be supported to substitute for PAAMI in project areas, with the idea of expanding it to the rest of the country. Under this scheme, food packages (see Annex 8) would be distributed to those children between the ages of 6 and 36 months as well as pregnant and lactating women identified as malnourished through routine growth monitoring activities in health facilities until they overcome the problem (para. 5.21). Once recovered, beneficiaries would graduate from this scheme. The distribution of these packages, like those of the pilot scheme (para. 5.22), would take place at local health facilities. The cost of six packages to be distributed per year to malnourished pregnant and lactating women is estimated at about US\$33. The cost of six annual packages for malnourished children between 6 and 36 months of age is estimated at about US\$18.60. The mix of food products included in the packages is justified by its balanced contribution of nutrients, and it would not have a negative impact on breast-feeding practices because none of the food products to be distributed to lactating mothers can be tolerated by children under the age of six months. In addition, therapeutic feeding of malnourished children under six months of age would be included in the basic maternal and child care program. The project would support a study to evaluate the impact of the targeted scheme on the nutritional status of women, and the possibility of adjusting the size and/or changing the mix of food products included in the packages, starting on the second year of project implementation (see Annex 8, and Action Plan, Annex 11). During negotiations assurances were obtained that the Government would undertake the evaluation study, review with the Bank the corresponding recommendations, and carry out as appropriate the measures agreed with the Bank (para. 9.02d).

5.24 A registry would be set up by MOH's Nutrition Division in each facility for monitoring program beneficiaries and for stock control. Effectiveness of the two schemes in achieving their objectives in the project health areas would be closely monitored and studied consistent with the methodologies of the evaluation activities described in para. 5.21. The existing MOH's food production plant could play an important role in producing inputs for these schemes if its operation performance improves. A prefeasibility study prepared by the Government and presented to the Bank recommends involving the private sector in operating the food production plant. During negotiations, assurances were obtained that the plant could be an eligible supplier of food supplements only after it is privatized (para. 9.02e).

5.25 In addition, the project would fund the establishment of a program

for the distribution at local health facilities of micronutrients to pregnant women and children between the ages of 6 and 36 months. Feasibility studies would be conducted to determine whether food commodities can be fortified with the necessary micronutrients and to determine whether alternative food stuffs should be included in the food supplementation schemes (see Action Plan, Annex 11). It is expected that the studies would be undertaken during the first months of project implementation. If fortification is deemed infeasible, iron, folic acid and vitamin C tablets would be distributed under the project. To monitor anemia status in project areas, the measurement of hematocrit levels in all pregnant women and children at risk under two years of age would be undertaken as part of regular activities at local health facilities. The measurement would take place during the first pre-natal consultation, and would be repeated before delivery in cases where anemia has been diagnosed. For children under two years of age, one measurement would be undertaken during the second year of life. During negotiations, assurances were obtained that the Government would carry out the micronutrient supplementation evaluation according to the timetable agreed with the Bank, would review the evaluation with the Bank and agree recommendations would be implemented (para. 9.02d). The proposed project would not support goiter-related interventions since MOH's efforts in this area are already fully supported by the Government of Belgium. It would also not support vitamin A-related interventions because vitamin A deficiency is not a widespread problem in Ecuador.

BASIC SANITATION AND SAFE WATER (Annex 9), US\$13.2 million, including contingencies, 13 percent of total project costs.

5.26 This component would assist the country in establishing a system to improve access to safe water and sanitation facilities (mostly latrines) in rural areas. The improvement of basic sanitation services is a necessary complement to the provision of primary health care and targeted nutrition supplements for achieving reduced mortality and morbidity in project areas. However, successful world wide and regional experiences in this area are limited, and current institutional capacity in Ecuador for delivery of basic sanitation services in rural areas, as in many other countries, is weak (paras. 2.22, 3.15, and 4.12). Accordingly, the basic sanitation component of the project is designed as a pilot that would test alternative decentralized organizational forms for delivering services. Based on the experience gained reforms in the institutional structure and capacity for provision of basic sanitation services would be implemented emphasizing the sustainability and the effective use of facilities. The component would be directed to rural areas because they (45 percent of the national population in 1990) suffer from the highest deficits in water and sanitation (water supply coverage is about 35 percent in rural areas as compared to about 75 percent in urban areas); also, Bank Loan 3285-EC for Municipal and Infrastructure Development is assisting in the provision of water and sanitation in urban areas.

5.27 To test decentralized implementation, responsibilities for executing activities would be at the provincial level. Each of the six provinces would have a responsible executing agency. In four cases -- Azuay, Chimborazo, Loja, and Pichincha -- this would be the Provincial Directorate of IEOS. In the province of Guayas, the implementing agency would be the Provincial Health Directorate of Guayas (CPSG). In Manabi, it would be the Centro de

Rehabilitación de Manabí (CRM), a regional development corporation. Execution of agreements with IEOS and CRM would be a condition of effectiveness (para. 9.03b). During the first three years of project implementation, several institutional models for providing decentralized basic sanitation services would be tested (one model per province). The four models proposed (see Annex 10) differ mainly in the role of IEOS. One model preserves its role as direct implementer of most tasks. The other models focus the role of IEOS on coordination, supervision, facilitation, and technical support. Implementation of major tasks, including promotion, community organization, construction supervision, and health education would be assigned to NGOs, private firms, and other specialized organizations.

5.28 Technical solutions under the component would vary according to socioeconomic as well as other local conditions. Two basic service levels would be applied for water supply systems: (a) communities of 250 to 1,000 inhabitants would receive improved wells, handpumps, and simple gravity systems with communal taps; and (b) communities of 1,000 to 2,000 persons would receive gravity systems, wells with submersible pumps, and, in limited cases, systems extracting surface water by pumping. All would have distribution networks connected to communal standpipes or house connections. Prototype designs for seven basic technological options have been prepared, ranging in cost from US\$16 to US\$84 per capita. Latrines would be either VIP (ventilated improved pit) or, where an adequate supply of water is available near the house, the manual discharge, water-seal type. Provisions would be made in latrine designs for different soil conditions. The average investment cost for latrines is estimated to be US\$12 per capita (US\$60 per family). During negotiations, assurances were obtained that the Government would follow the preliminary designs agreed with the Bank for the 20 new and 8 upgraded water systems to be constructed during the first year (para. 9.02f).

5.29 After three years of implementation and under the mid-project review (para. 7.20), an in-depth evaluation of the provincial-level trials would be carried out, with the objective of reformulating, as needed, the decentralized operational structure for delivery of rural water and sanitation services (see Action Plan, Annex 11). The resulting improved structure would be applied to the remaining two years of the component (second stage) and to the preparation of a new large-scale basic sanitation project. If pursuant to the annual or mid-term reviews to be held for this project, satisfactory action plans are either not presented or not carried out for the basic sanitation and safe water component, the Bank may suspend disbursements for such component. To complement the results of the practical experience in addressing sectoral issues, an institutional study of the entire rural water and sanitation sector would be done in parallel (see Action Plan, Annex 11). This study would focus on IEOS. Its objective would be to develop recommendations on reforming the public sector's role and performance in this field. The emphasis would be on creating a smaller, more efficient government agency whose role would be normative, not operational. The study would be carried out within the first six months of the project. During negotiations, assurances were obtained that the Government would undertake the sanitation sector institutional study as well as the evaluation of the models used for the provincial trials, review with the Bank the corresponding recommendations, and carry out as appropriate the measures agreed with the Bank (para. 9.02d).

5.30 Under this component, the project would finance: (a) construction of water supply facilities and latrines for 165 communities of between 250 and 2,000 inhabitants in six provinces; (b) upgrading of 42 existing rural water supply systems; (c) establishment of Provincial Maintenance Centers in the six provinces; (d) technical assistance and training for staff of IEOS and other institutions which will be involved in the component, and for the users' committees, which will administer the facilities; (e) technical assistance for project implementation and related institutional strengthening, studies of institutional restructuring and cost recovery, plus an inventory of rural water and sanitation systems; and (f) equipment, 6 jeeps and 12 motorcycles. The pilot program is expected to benefit about 172,000 persons, 138,400 of these with new water supply facilities and 33,600 with upgraded water systems. All beneficiary families would be provided latrines.

5.31 Cost recovery under the component plays the dual role of signaling interest on the part of the users and enhancing the prospects for operational sustainability of investments. For water supply facilities, users would be required to contribute a minimum of 30 percent of investment costs in cash, labor, and/or local materials. Users in communities electing water systems with individual house connections would be required to contribute 30 percent of the cost of a system with communal standpipes plus pay (in cash) the full cost of the house connection with meter. Monthly tariffs paid by the users would fully finance the costs of operation, maintenance, and depreciation. For latrines, users contribution would equal about 50 percent of the investment cost (see Action Plan, Annex 11). During negotiations, assurances were obtained that the Government would follow the cost-recovery arrangements agreed with the Bank (para. 9.02c).

5.32 One of the key criteria for selection of communities to participate in the project would be their demand for services, as expressed by willingness to pay according to cost-recovery policies. Communities would be preselected for investments on the basis of need (priority would be given to areas identified as having worse-than-average health indicators, as per the overall project), size and socioeconomic levels (a representative sample of communities with between 250 and 2,000 inhabitants and with varying income levels would be selected), and availability of an adequate water source. The preselected communities would pass through a participatory evaluation of the potential beneficiaries' ability and willingness to pay for water and sanitation services. This would determine if water and sanitation are perceived priorities and, if so, which level of service is affordable. Communities have been chosen for the first year of project implementation. During negotiations, assurances were obtained that the Government would apply the criteria agreed with the Bank for selection of communities during the remaining years (para. 9.02g).

5.33 Sustainability and effective use of new facilities would be established through a strong community promotion, organization, and health education program. These activities would be carried out by extension workers from IEOS or other implementing organizations during the identification, pre-construction, construction, and post-construction stages. Community administration committees would be formed and trained to collect tariffs and perform routine maintenance and minor repairs. The project would finance the cost of training for extension workers as well as their travel and per diem

costs for visits to the communities. Training of staff would be carried out through the technical assistance and training program under this component.

5.34 Technical assistance for the component includes 5.7 person-years of consultants and 18 person-years of local consultant services. The government has agreed that UNDP/Ecuador would administer technical assistance, training, and procurement of equipment for the water and sanitation component under a Management Services Agreement. In addition, UNDP/Ecuador would cofinance the technical assistance program for about US\$500,000. This UNDP contribution would allow special expertise from the UNDP-World Bank Water and Sanitation Program (a global technical assistance program) to be provided to support the execution of this component and to provide assistance for development of the water and sanitation sector in Ecuador. Submission of a signed agreement with UNDP, acceptable to the Bank, for the implementation of the technical and training program of the basic sanitation component would be a Loan Effectiveness condition (para. 9.03c).

SECTORAL POLICY AND INSTITUTIONAL STRENGTHENING (Annex 10), US\$12.8 million, including contingencies, 13 percent of total project costs.

5.35 The component closely complements other project components, in particular the basic health care component, and will enhance the long-term capacity of MOH and of the health sector for making better use of its resources and for planning and implementing improvements in the sector. The component aims at strengthening decision-making processes by improving management and resource allocation capacity both in MOH and in its decentralized units at the national, provincial, and local levels, and by contributing to intrasectoral coordination, particularly between MOH and IESS. The component would also strengthen MOH's capacity to implement project activities, by financing consultants and other related expenditures for the Project Coordinating Unit. Activities are grouped under three major areas: (a) developing the institutional bases for decentralization; (b) staff development; and (c) studies plus sector monitoring and impact evaluation.

5.36 Developing the Institutional Bases for Decentralization. To consolidate a health care system based on local health service areas in the long-term would require introduction of sustainable changes of MOH's management and operational institutional strategies. Emphasis would be shifted from central and provincial to local administrative levels, and from curative care to health promotion and disease prevention interventions. Strengthening of local organizational, administrative, and financial processes and concomitant changes required at the central and provincial levels to ensure efficient and effective operation of facilities would be addressed. To this end, activities are grouped under three headings: (a) defining decentralized organizational arrangements; (b) establishing a budget programming system; and (c) designing a supporting management information system.

5.37 For defining new decentralized organizational arrangements and preparing a plan of action for implementation, this area of the project would provide about 50 staff-months of technical assistance (2 staff-months of an international consultant and 4 staff-years of national consultants) that would

support: (a) review of present MOH's central, provincial, and local organization, and administrative processes and instruments at each level; (b) collecting the list of core reforms needed to establish the managerial capacity needed at each level to implement decentralized service provision and the corresponding set of legal measures required to enact selected reforms and promotion of their adoption; (c) development of administrative and operational instruments, and standardized procedures and norms for the administration of human and physical resources, as well as preparation of the corresponding manuals and other informational materials. In-service training for implementing organizational changes would be provided to the MOH staff involved in the decentralization process to enable them to handle their changed or increased responsibilities.

5.38 Establishing a budget programming system for the sector would provide an appropriate tool for a more efficient allocation of resources, in line with the priorities set forth in the proposed project. Such a system would have basic budgetary and cost information flowing from the decentralized local and operational units to the provincial directorates and the MOH and facilitate budget monitoring. Responsibilities at the central, provincial, and local levels would be redefined and implemented to ensure that budget preparation is initiated at the local level, that allocation of financial resources (including those that traditionally have been extra-budgetary resources) among different programs and the country's provinces follow objective and transparent criteria, and that financial accounting procedures are in place for monitoring resource use. Technical Assistance (30 staff-months of international consultants and 8 staff-years of national consultants) would be financed to design the system and produce the corresponding operational manuals and complementary materials. Coordination between the MOH financial directorate and budget authorities outside of MOH (MOF and CONADE) would also be within the scope of this subcomponent, with MOF and CONADE staff who work on health sector budgets participating in the training activities. Training would be conducted for staff from MOH, MOF and CONADE at the central level and MOH staff at the provincial and local levels.

5.39 To provide the appropriate informational base needed for the organizational framework discussed in paras. 5.35-5.37 above, a management information system would be developed. Activities to be supported in this field are: (a) strengthening of the existing MOH's health information system; emphasis would be placed on standardizing procedures for the collection of a streamlined set of data, and for ensuring that information would be used and analyzed to contribute to sectoral programming processes; (b) development of a cost analysis system to identify actual service costs at all levels and for enhancing cost evaluation and control processes; and (c) design and establishment of a microplanning system for programming of decentralized services, including aggregation at the provincial level, to be used also in relation to budgetary processes. Use of combined data from the separate subsystems for decision-making appears in para. 5.44. Under this subcomponent, the loan would finance 35 staff-months of technical assistance (including local consultant services) and equipment and materials (mainly computers) with corresponding support services (see Action Plan, Annex 11). During negotiations, assurances were obtained that the Government would prepare the timetables for developing and establishing each of the subsystems of the MIS before March 31, 1993 (para. 9.02h).

5.40 Sector Staff Development. Reorienting the health services delivery system as proposed (paras. 5.07-5.10) requires the introduction, implementation, and consolidation of significant changes in the size, distribution, attitudes, and skill of sector staff. This means redeployment of staff (para. 5.12) and policy changes with budgetary implications (para. 6.03). This subcomponent, therefore, aims at developing sector staff by supporting a human resources mobilization program that would: (a) identify staff reassignments in managerial and administrative areas needed in addition to those presented in para. 5.12; (b) develop personnel management systems; and (c) contribute to the application of appropriate salary scales, consistent with the achievement of project and program objectives, with emphasis on the existence of an appropriate environment for practitioners of basic health care. Complementary activities that would support further staff development for the best performers in the medium-term are: (a) an in-service training program mainly for staff involved in (i) administration, management, and finance of basic health care services, and (ii) implementation of the policy and institutional strengthening project component; (b) a long-term continuing education program for upgrading sectoral human resources, with involvement of universities and other specialized institutions.

5.41 The loan would finance the training of staff, particularly at the local level. This training would include (a) short-term scholarships for about 100 managerial staff; (b) in-service training for about 600 administrative staff; (c) continuing education workshops for about 100 staff working in the management information system area; and (d) training equipment and materials.

5.42 Studies and Sector Monitoring and Evaluation. This subcomponent would enhance institutional changes in the long-run for the delivery of MOH health services by financing studies on priority issues especially in terms of improving resource allocation. The three areas of analysis agreed are: (a) user fees-for-services and the role of cost-recovery and alternative payment mechanisms in sectoral finance and resource allocation, respectively; (b) rehabilitation of the hospital system and the respective financial plan; and (c) interinstitutional coordination between MOH and IESS (see Action Plan, Annex 11). In addition, studies using MIS information to assess sector programs and their general impact would also be undertaken.

5.43 While cost-recovery would be used in specific project activities (para. 5.16 regarding drugs and para. 5.31 regarding water systems), there is little knowledge on how cost-recovery mechanisms could be introduced in the delivery of other services under the project. Proposed studies would, on the basis of LSMS information, assess the impact that alternative fee schedules for different services would have on the use of these services by different social/income groups, and the impact on sector finances. The studies would then make specific recommendations regarding the fees to be used. In addition, proposed studies would assess different payment mechanisms that could be introduced for providing incentives to providers for improving quality of care, particularly in underserved areas, limiting cost escalation, excessive allocation of resources to curative care, and use of inappropriate medical technology. Although effectiveness of the hospital system is poor (para. 3.05), a comprehensive diagnostic of the situation, including physical, human, financial, and managerial resources, does not exist, either for

individual hospitals or the system as a whole. The project would finance studies required to fill this gap specifically to develop recommendations about how a deeper crisis could be prevented. In the area of coordination between MOH and IESS, studies related to the production, financing, and delivery of health care services would be undertaken, especially focusing on identifying areas where MOH and IESS can make specific agreements for joint actions and other types of collaboration.

5.44 To monitor sector performance and more particularly project program performance, the project would finance the development of mechanisms for using data generated under the MIS (para. 5.34) and for promoting the flow of monitoring information through the appropriate institutional channels. Impact evaluation would also be financed using MIS data and information from the Living Standards Measurement Survey (LSMS), performed by the National Employment Institute (INEM) under Bank Loan 3425-EC for the First Social Development Project (see Annex 10-1, and Action Plan, Annex 11). Budget for activities under the subcomponent is US\$1.7 million, of which US\$500,000 would be contributed from a technical cooperation grant from IDB. During negotiations, assurances were obtained that the Government would undertake the studies, review with the Bank the corresponding recommendations, and carry out, as appropriate, the measures agreed with the Bank (para. 9.02d).

VI. PROJECT COST AND FINANCING PLAN

A. Project Costs

6.01 The estimated cost for the proposed MOH medium-term health sector investment program, covering 16 provinces and 71 health areas would be US\$160 million to be spent over a seven year period. The Bank's proposed project covers 40 health areas at an estimated cost of US\$102.2 million equivalent, or about 64 percent of the total estimated cost of the medium-term investment program (Annex 14). The IDB would finance the remaining portion of the investment program beginning in 1994, at the earliest (para. 5.04). Annex 16 includes a summary of the full investment program and proposed financing arrangements.

6.02 The total project cost includes physical and price contingencies, and taxes and duties of US\$6.5 million. An estimated US\$31.4 million would be foreign exchange. Investment costs amount to 56 percent of base costs and incremental recurrent costs amount to 44 percent of base costs. Project costs were estimated at January 1992 price levels and include physical contingencies of 6 percent for new construction and 10 percent for civil works rehabilitation, and 5 percent for equipment, furniture, and vehicles. Price contingencies were calculated at 3.7 percent per year for 1992-97.

6.03 Estimated construction costs for the project area are based on unit prices derived from current contracts and costs analyses for similar standards of construction in corresponding health facilities. Estimated health center rehabilitation costs were calculated based on a study, done on a sample basis, of rehabilitation requirements. Estimated unit costs of medical, odontological, and office equipment, furniture and vehicles are based on local market prices. Estimates for technical assistance and studies are based on current rates for local and foreign experts. Cost estimates for training,

salaries, travel allowances, and other operating costs are based on current costs or costing standards used by MOH.

Table 6.1: Ecuador - Second Social Development Project,
Health and Nutrition

Estimated Project Costs
(In millions of US\$)

<u>Summary Accounts</u>	<u>Local</u>	<u>Foreign</u>	<u>Total</u>
<u>Investment Costs</u>			
A. Civil Works	9.1	5.3	14.4
B. Furniture and Equipment	3.0	9.0	12.0
C. Vehicles	0.6	0.8	1.4
D. Studies and Tech. Assist.	6.3	3.1	9.4
E. Public Campaigns	0.9	0.6	1.5
F. Training	5.7	0.9	6.6
G. Incentives	3.1	0.0	3.1
H. Purchasing Agents & Audits	0.1	1.3	1.4
Subtotal	28.8	21.0	49.8
<u>Recurrent Costs</u>			
A. Human Resources	21.6	0.0	21.6
B. Pharmaceuticals & Supplies	3.9	4.7	8.6
C. Food Program	2.5	0.6	3.1
D. Maintenance	3.8	0.4	4.2
E. Other Operating Costs	1.1	0.4	1.5
Subtotal	32.9	6.1	39.0
Total Baseline Costs	61.7	27.1	88.8
Physical Contingencies	0.8	0.9	1.7
Price Contingencies	8.3	3.4	11.7
TOTAL PROGRAM COSTS	70.8	31.4	102.2

B. Incremental Recurrent Costs

6.04 During the implementation period, the project would add an average of about US\$6.4 million per year to the recurrent expenditures budget of MOH. Annual incremental operating costs generated by the project at completion are estimated in 1992 prices at US\$12 million. This increase, which includes contingencies, represents about 10 percent of the latest estimated MOH budget for year 1991. The incremental operating costs would be generated by incremental salaries for health workers, purchase of medicines and medical supplies, office supplies, and operation and maintenance of civil works, medical and office equipment and vehicles. In addition, recurrent costs would be generated by the establishment of a civil works and equipment maintenance

system within MOH and distribution of food supplementation to pregnant and lactating mothers and children under 3 years of age. While the proposed changes would be substantive, implementation is feasible with a modest increase in the sector budget of about 0.5 percent of the total public budget and an internal reallocation of 5 percent of the sector budget. Cost-recovery and other recommendations in the area of pharmaceuticals could provide additional resources.

Recurrent Cost Financing
(in US\$ millions)

	Year							Total
	92	93	94	95	96	97	98	
Total Cost	1.4	3.2	5.1	6.5	9.1	11.9	7.5 a/	44.7
Bank Financing	1.4	3.2	3.1	3.9	5.5	2.6	1.5	21.2
Government Financing	0	0	2.0	2.6	3.6	9.3	6.0	23.5

a/ Final year of project consolidation includes only six months of expenditures.

C. Financing Plan

6.05 The project would finance a portion of the health sector investment program through a proposed Bank loan of US\$70 million. The UNDP/Ecuador would contribute US\$500,000 to cofinance technical assistance for the water and sanitation component of the project. Execution of a grant agreement with UNDP, would be an effectiveness condition (para. 9.03c). The remaining US\$31.7 million would be financed by the Government of Ecuador. The loan would finance about 72 percent of total project costs, net of taxes and duties, resulting from financing 100 percent of foreign exchange expenditures and 55 percent of local expenditures. To facilitate project start-up activities, such as those related to consultant employment and preparation of technical and bidding specifications for computer and office equipment, and health subcenter and center construction, the Bank would authorize retroactive financing of up to US\$5 million equivalent to help cover eligible start-up expenditures made on or after January 24, 1992.

6.06 There is a commitment from the Government to ensure that this expansion is effected; however, significant increases will be required to the MOH budget. During negotiations, assurances were obtained that, in order to ensure that MOH is properly resourced, the Government and the Bank would undertake an annual review, during the third quarter each year, of MOH budget and project expenditures proposals for the forthcoming year. During the review, the Government would provide assurances that the overall level of budget resources allocated to public health programs would suffice to finance adequately: (i) the project year-by-year, including incremental recurrent expenditures; (ii) MOH expenditures required to expand activities similar to those of the project beyond the 40 local health service areas covered by the project, if MOH opts for such expansion; and (iii) amounts per year no less than those expended by MOH in 1991. Each such review would conclude with the

finalization of an annual plan of action to be carried out by the Borrower during the year immediately subsequent to the review (para. 9.02i).

VII. PROJECT IMPLEMENTATION

A. Project Organization

7.01 The project would be undertaken within the legal and organizational framework of Ecuador's MOH. The project organization would have three levels: the central level, represented by MOH, which would have overall responsibility for project coordination and implementation; the provincial level, represented by the Provincial Health Departments (or the alternative provincial institution for the water and sanitation component), which would be responsible for assisting in executing the project in their respective Provinces; and the local health service areas (community organizations in the case of the water and sanitation component), which would be responsible for the production and delivery of primary health care services (see Annex 12 for a detailed discussion of the roles and responsibilities of each of these three levels).

B. Project Management and Coordination

7.02 Project implementation would be carried out within the existing organizational structure of MOH through units whose operational and administrative responsibilities are directly linked to project components (see Annex 12). Overall responsibility for project implementation would rest with the Minister of Health who would be supported in general policy development and institutional coordination by a Committee of Directors of MOH. To assist in the oversight of project implementation, a Project Coordination Unit (PCU) was established by redefining the organization and functions of the Project Preparation Unit (PPU) (see para. 7.03). It is anticipated that the PCU, with additional resources, would also be in charge of coordinating implementation of the remaining portion of the Investment Program to be financed by IDB.

7.03 The PCU would be staffed by a Coordinator and consultants, both local and international (see Annex 12). The Coordinator would report directly to the Minister of Health. The PCU would serve as the linkage between the project and other MOH units responsible for technical programs as well as with Provincial Health Departments and MOH's autonomous agencies, such as CEMEIM and IEOS. The PCU would employ technical consultants that would support and monitor technical execution of project components, and an administrator that would manage and coordinate procurement, consultant contracting, accounting and financial aspects of the project. Technical specialists would be contracted to work in the areas of basic health care and nutrition, safe water and sanitation, infrastructure, and institutional strengthening. The Government furnished the Bank a copy of Ministerial Resolution No. 14107 dated May 15, 1992, establishing the PCU (para. 9.01).

7.04 The PCU would assist, coordinate, monitor, and evaluate the activities of the following participating entities:

- (a) The newly established Directorate of Basic Health Care Services at the central level, Provincial Health Departments, and Local Health

Service Areas for the implementation of the integrated primary health care program;

- (b) The Planning and Personnel Directorates, Provincial Health Departments, and Local Health Service Areas in the hiring and redeployment of health service personnel;
- (c) The Personnel Directorate, School of Public Health and Universities of Quito, Guayaquil and Cuenca, Provincial Health Departments and Local Health Service areas for the delivery of specialized training of basic health personnel;
- (d) CEMEIM for the implementation of the pharmaceuticals and medical supplies program;
- (e) The Nutritional Directorate and Local Health Service Areas for implementation of the nutrition component;
- (f) The Provincial Health Departments, IEOS offices at the provincial level, and selected NGOs for implementation of the sanitation component; and,
- (g) The Planning and Budgeting Directorates at the central level, the Provincial Health Departments, and the Local Health Service Areas for implementation of institutional strengthening activities.

7.05 The PCU is deemed an appropriate mechanism to ensure efficiency in project implementation while retaining implementation authority in the respective line and staff departments of MOH. Financing of the PCU's activities is included under the respective institutional strengthening activities of each component, and includes funds (US\$200,000 equivalent) for paying regular MOH staff for their incremental work on the project to the extent not covered by their salaries. During negotiations, assurances were obtained that the PCU would be permanently staffed for the duration of the project (para. 9.02i).

7.06 Procurement Implementation Procedures. The PCU administrator and his/her staff would manage and coordinate procurement of goods and services with support of procurement agents. Procurement for health facilities design, construction, and supervision would be done individually or in packages of 1-5 health facilities by procurement agents, by the provincial offices of IEOS or by the Provincial Health Departments. Medical and office equipment and furniture for the health facilities would be procured by the PCU with support from a procurement agent; whenever possible the distribution would be included as a service to be provided by suppliers. Vehicles would be procured at the central level. Procurement and distribution of pharmaceuticals and other medical supplies would be carried out by CEMEIM during the first two years of project implementation; at the project's mid-term review, CEMEIM performance would be assessed in conjunction with alternative procurement and distribution arrangements, and a decision made on the arrangement to be used for the following years of project implementation. Procurement of low-cost office supplies would be done by the Provincial Health Departments and health centers and subcenters. The health facilities would also manage a small budget for

routine maintenance of buildings and equipment, as well as for furniture repair. Training programs would be contracted with local universities and private institutions who would receive support from available MOH trainers. Training materials would be developed by MOH and the universities with specialized technical assistance. Procurement and distribution of food would be done by procurement agents through LCB. Procurement of equipment and materials for the water and sanitation systems would be done by UNDP or the provincial offices of IEOS/Provincial Health Departments/selected NGOs, assisted by UNDP, in accordance with the corresponding model chosen (paras. 5.27 and 5.34). Training of community organization promoters and the Juntas de Administración would be undertaken by IEOS staff with technical assistance support. Technical assistance would be contracted by a procurement agent.

C. Procurement

7.07 Procurement for civil works, goods, and services would be done in accordance with Bank guidelines, using standard bidding documents based on Bank models. The Government has recently enacted new procurement legislation that resolves past disagreements regarding the precedence of Bank procurement guidelines over local legislation. The loan agreement for this project would contain explicit provisions dealing with points of difference, either in substance or interpretation, between Bank guidelines and Ecuadoran legislation. For efficiency in implementing procurement in compliance with Bank procurement policies and procedures, the executing agency would retain the services of UNDP/Ecuador as a procurement agent/technical assistance agent. PAHO would act as a technical assistance management agent mainly for the basic health care and nutrition components. Procurement and distribution of food products and micronutrients would be done, with the assistance of the procurement agent, through LCB. The selection and appointment of consultants for studies and technical assistance would be consistent with the August 1981 Guidelines for the Use of Consultants by World Bank Borrowers. MOH has already had positive experience using multilateral agencies to support them in implementing several programs, including the Bank's PPF 110-EC and PPF-110-1-EC. The contracting of procurement agent, and technical assistance management agents, would be a condition of effectiveness (para. 9.03a). During negotiations, assurances were obtained that the Government would contract the agents agreed with the Bank, and which would assist the Government in the drafting of bidding documents, acceptable to the Bank (para. 9.02k). Project cost breakdown by procurement method are summarized in the table below.

Procurement Arrangements 1/
(US\$ million)

Category	ICB	LCB	Other	Total
Civil Works		12.0 (7.2)	5.0 2/ (3.0)	17.0 (10.2)
Goods				
Vehicles	1.6 (1.6)			1.6 (1.6)
Other Equipment	8.7 (8.7)	2.4 (2.0)	.5 (.4)	11.6 (11.2)
Furniture		2.3 (2.1)	0.5 2/ (0.4)	2.8 (2.5)
Studies and Technical Assistance			13.7 3/ (13.7)	13.7 (13.7)
Training			7.4 (7.4)	7.4 (7.4)
Materials			1.4 2/	
Services			6.0 3/	
Pharmaceuticals and Medical Supplies	7.0 (3.5)	1.8 (0.9)	1.0 2/ (0.5)	9.8 (4.9)
Food and Micronutrients		3.5 (2.2)		3.5 (2.2)
Operating Costs			31.3 4/5/ (12.9)	31.3 (12.9)
Incentives (one-time bonuses)			3.5 5/ (3.5)	3.5 (3.5)
TOTAL	<u>17.3</u> (13.8)	<u>22.0</u> (14.4)	<u>62.9</u> (41.8)	<u>102.2</u> (70.0)

1/ Figures in parenthesis are the amounts estimated to be financed by the Bank.

2/ Shopping

3/ Specialized services

4/ On a declining basis

5/ Does not involve procurement

7.08 Civil Works. It is expected that about 109 urban and 96 rural health subcenters, and 34 urban health centers and local hospitals would be repaired, refurbished and built. Also the safe water and sanitation program would build

water systems and latrines for about 165 communities (para. 5.22). Because of their typically modest size and scattered locations, it would not be efficient to procure these works through international competitive bidding procedures (ICB). However, any contract for civil works that exceeds the equivalent of US\$1.5 million would be procured on the basis of ICB. Construction, repair, and refurbishing works costing US\$50,000 or less and up to an aggregate of US\$5 million, would be contracted on the basis of price quotations obtained from at least three eligible contractors. Local competitive bidding (LCB) procedures, acceptable to the Bank, would be used when construction, refurbishing, and repair works can be grouped in contracts estimated to cost more than US\$50,000. As much as possible, construction of similar types of civil works (e.g., urban health centers and local hospitals scattered throughout the country) would be grouped in packages to minimize administrative costs and to take advantage of contractor specialization. Individual contract values are expected to cost between US\$50,000 to US\$1,500,000. Works to be procured through LCB procedures would not exceed an aggregate amount of US\$12 million.

7.09 Goods. Equipment and vehicles will be bulk purchased to the extent possible. Materials and tools for water system and latrine construction would be purchased in bulk. Packages estimated to cost above US\$200,000 would be procured under ICB. These comprise mostly medical equipment, vehicles (including maintenance), and computers (including software and maintenance). Under ICB, local manufacturers would be granted a margin of preference for purposes of bid evaluation, in accordance with Bank guidelines. Goods (including furniture and other equipment) valued at more than US\$25,000 but no more than US\$200,000 would be procured through LCB procedures acceptable to the Bank, up to an aggregate value of US\$4.5 million. Contracts for goods valued at US\$25,000 or less and not exceeding US\$1.0 million in aggregate would be awarded on the basis of comparison of price quotations obtained from at least three eligible suppliers.

7.10 Pharmaceutical products would be procured through ICB. Other medical supplies valued at more than US\$25,000 but not exceeding US\$200,000 would be procured using LCB procedures acceptable to the Bank up to an aggregate of US\$1.8 million. Contracts for medical supplies valued at US\$25,000 or less and not exceeding US\$1.0 million in aggregate would be awarded on the basis of comparison of price quotations obtained from at least three eligible suppliers.

7.11 Contracts for printing training materials valued at US\$25,000 or less would be done through local shopping procedures up to an aggregate of US\$1.4 million. When the cost exceeds US\$25,000 LCB procedures acceptable to the Bank would be used.

7.12 Prior Review. All procedures, documents, bid evaluation and contract awards for ICB procurement would be subject to prior review by the Bank. Civil works procurement contracts above \$500,000 would also be subject to prior review by the Bank. Because LCB bid packages would be too small and numerous for effective ex-ante review by the Bank, only the first two LCB procurement for each of the following would be reviewed ex-ante, regardless of their value: health center and local hospital construction, refurbishing and repair, office furniture and equipment, and medical supplies. Also, an ex-

post review of contracts disbursed against SOEs would be conducted during field supervision on the basis of a 2.5 percent random sampling. The proposed prior reviews would cover about 50 percent of items subject to procurement arrangements as presented in the Procurement Arrangements table. This level would be acceptable given that procurement agents would be used.

D. Disbursements

7.13 The proceeds of the loan would be disbursed during a seven-year period as follows: (a) civil works, 60 percent of expenditures for new construction, rehabilitation and repair of health centers and hospitals, as well as construction, rehabilitation and repair of water systems and latrine construction; (b) medical, odontological and office equipment, furniture and vehicles, 100 percent of foreign expenditures, 100 percent of local expenditures (ex-factory cost), and 80 percent of local expenditures for other items procured locally; (c) training and training materials, technical assistance, consultant services, and studies, 100 percent of total expenditures; (d) public information campaigns, 100 percent of total expenditures; (e) incentives for redeployed personnel, 100 percent of total expenditures; (f) pharmaceuticals and medical supplies at a rate of 100 percent until an aggregate amount of US\$1.2 million has been reached, and thereafter, disbursements made at a rate of 60 percent until an aggregate amount of US\$4 million has been reached, the remainder to be disbursed at a rate of 20 percent; (g) maintenance of health care facilities and equipment, incremental salaries and operating costs at a rate of 100 percent until an aggregate amount of US\$2.5 million has been reached, thereafter, disbursements for this category made at a rate of 60 percent until the aggregate amount of US\$10 million has been reached; the remaining funds disbursed at a rate of 20 percent; (h) purchase and distribution of food and nutritional supplements at a rate of 100 percent until an aggregate amount of US\$0.5 million has been reached, and thereafter, disbursements made at a rate of 60 percent until the aggregate amount of US\$1.5 million has been reached; the remaining funds disbursed at a rate of 20 percent. PPF 110-EC would be refinanced under the proposed loan (see Annex 15).

7.14 Proceeds of the proposed loan would be disbursed against withdrawal applications to be fully documented for contracts valued at more than US\$20,000 for consultants and all incremental operating expenditures, US\$100,000 equivalent for goods, and US\$500,000 for civil works. Claims for expenditures of lesser amounts would be disbursed against presentation of Statements of Expenditure (SOEs), for which the supporting documentation would be retained by the PCU for periodic inspection by the Bank and by external auditors. All expenditures and SOEs would be transmitted to the Bank through the PCU. The Government would set up a Special Account in US dollars at the State Bank (Banco del Estado) of Ecuador with an initial deposit of US\$3.5 million. Withdrawals from the Special Account would be supported by the required documentation. The closing date of the project would be June 30, 2000.

E. Accounting and Auditing

7.15 Implementing agencies would maintain separate project accounts that would be audited annually by independent auditors, in accordance with

appropriate auditing principles, with terms of reference approved by the Bank. The audit would include the Special Account and Statement of Expenditures, and compliance with cost-recovery and procurement objectives. During negotiations, assurances were obtained that audits would be conducted by an independent private auditor acceptable to the Bank (para. 9.021). The MOH is in the process of developing, with external technical support, a computerized accounting and financial reporting system for the project. Also, terms of reference were completed for the contracting of first-year auditors.

F. Status of Project Preparation

7.16 In September 1991, a preappraisal mission reviewed in detail the feasibility of the overall health sector investment program, management and implementation issues, and sectoral issues related to the conditions under which the program would have the desired eventual impact on increasing the coverage and the quality of basic health services for the poor. The appraisal mission, which was undertaken in January 1992, reviewed the major components of the program and found that, with exception of water and sanitation, all components were prepared. A follow-up mission finalized work on the water and sanitation component. As noted before, the basic health care package was prepared and the project areas selected. Prototype architectural briefs and preliminary designs of health facilities have been completed. The prototype designs for all new health facilities that are to go for bidding during the first two years of project implementation have been adapted to the selected sites with the support of private consultants. All the facilities to be expanded and/or repaired, furnished, and equipped during the first two years of project implementation (8 areas in 6 provinces) have been identified through an inventory exercise supported by the PPF. Some works have already been started. MOH has also undertaken a review to determine new personnel needs in the project areas and the number and type of existing staff that could be reassigned in the project areas. At the end of the appraisal mission, as detailed in the Aide Memoire of January 23, 1992, the Bank and the Government agreed on additional activities to be undertaken before negotiations. All of them have been completed.

G. Project Monitoring and Supervision

7.17 Overall monitoring and evaluation of the project would be the responsibility of the PCU, which will carry out these tasks with foreign and local technical assistance. Specific tasks include: (a) monitoring of key project activities to ensure implementation is done according to the agreed schedule; (b) ensuring that the target population is receiving health care services; and (c) monitoring timing of budget allocations and expenditures to ensure adequate and timely use of resources

7.18 In line with project objectives, key indicators would be monitored annually to track and support improvements in the overall efficiency and effectiveness of basic health care (see Annex 13, and Annex 10-1). In addition, selected, well-focused performance targets related to improving coverage, efficiency, and expenditures would be evaluated. Both interim and final targets would be noted. During negotiations, assurances were obtained that the Government agrees with the targets and indicators of project objectives included in the monitoring plan (para. 9.02m).

7.19 The following are the key indicators and their targets:

- (a) increased coverage in designated services (including family planning programs, pre-natal controls, child delivery by professional staff, child growth monitoring and development) reaching 30 percent of the target population in project areas by the mid-project review and 80 percent at project completion;
- (b) reduction in infant mortality and maternal mortality of 10 percent by mid-project review, and of an additional 15 percent upon project completion, in designated project areas;
- (c) reduced incidence of malnutrition among children under age three in designated project areas from the present average of 50 percent to 35 percent by mid-project review and to 25 percent at project completion and similar for pregnant mothers;
- (d) provision of safe water and basic sanitation to 100,000 persons by mid-project review.

7.20 The results of monitoring would form a central focus in an annual review of project implementation. This annual review would be conducted jointly by MOH, MOF, and the Bank. It would assess the previous year's progress towards achieving expenditures, resource management, and sector performance targets, and establish targets and schedules for the following year. Resolution of implementation problems and required adjustments in project content and targets would also form a basis of the reviews. During negotiations, assurances were obtained that the Government would prepare and furnish for Bank review, at the end of every six month period during project implementation, project reports regarding: (i) project implementation results and expenditures for the preceding six months; and (ii) a related review of achievements and shortfalls based on established plans and objectives. The two reports covering the prior calendar year shall be consolidated into an annual report, which shall be the basis of an annual review held by the Bank and the Borrower in the third quarter of each calendar year during project implementation. Each review shall conclude with the preparation of an annual plan of action to be carried out by the Borrower during the year following the review. A mid-project review would be carried out at the beginning of the fourth year of project implementation to conduct a comprehensive review of all project components. It would include, in addition, an evaluation of the effectiveness of project inputs in achieving key targets for improving sector performance. During negotiations, assurances were obtained that the Government would carry out these evaluations (para. 9.02n).

7.21 The project would require more intensive Bank supervision than the normal 9 to 10 staff weeks per year. This would be especially true for the first three years, during which the gradual incremental and experimental approach adopted for expanding the coverage of basic health and nutrition services, including safe water and sanitation, would permit fine tuning the design of the service delivery strategy. Supervision arrangements are therefore expected to result in a requirement of about 20/25 staff-weeks per year during the first three years of project implementation. In addition,

agencies such as PAHO and UNDP have been contacted to provide additional support for project supervision (see Annex 17).

H. Environmental Impact

7.22 The project would have a positive environmental impact as the coverage of basic sanitation services would be expanded to poor rural communities. In addition, standard safety procedures would be followed in the implementation of civil works, particularly latrine construction, and for the installation and operation of the medical equipment supplied under the project. Procedures for safe handling of hazardous wastes and materials (e.g., disposable needles, blood-contaminated products) would be included in continuing education programs for health personnel.

I. Impact on Women

7.23 The extension of coverage and the improvement in the quality of basic health and nutrition services sought by the project would benefit women in a variety of ways. The delivery of a package of integrated primary care services would be geared to address the poor health status of women in Ecuador and to curb maternal and infant mortality through services such as prenatal care, referral of high risk pregnancies, family planning, and cervical cancer screening. In addition, the capacity of local health systems to manage appropriately complications of delivery (the major cause of maternal mortality as noted on para. 1.09) would be improved by upgrading physical infrastructure, training personnel, and strengthening the referral network. The nutrition and sanitation activities would have particular impact on women, the former one because one of its target groups are pregnant mothers, and the latter because improved water and sanitation coverage mostly affects the quality of women's lives in the household. Another important impact derives from growing labor force participation of women as key health-care providers (e.g., physicians, nurses, midwives).

VIII. EXPECTED BENEFITS AND RISKS

A. Benefits

8.01 The principal benefits of the proposed project would be increased human capital accumulation among the poor. This would include low income rural and urban families that currently lack or have limited access to health services, who under the project would gain a better chance to improve their health status. It is expected that project interventions would improve infant and child survival and maternal health, and reduce the prevalence and severity of the most common diseases, including cholera. The proposed project would invest in human capital to strengthen the basis for Ecuador's economic development, in accordance with the Bank's country strategy. It would help alleviate poverty into the medium term and contribute to improved income distribution by targeting basic health and nutrition services to the poor. Specifically, it would improve the organization and resource base for delivering a package of integrated primary health care services and for decentralizing health care administration. Provision of safe water and sanitation facilities would complement the delivery of primary health care and targeted nutrition supplements in achieving project objectives. Additionally,

the project would strengthen the capacity and improve the quality of decision-making, resource allocation, management and evaluation within MOH and its branches at the central, provincial, and local levels.

B. Risks

8.02 The principal risk involves project implementation, where the capacity of MOH is weak. This problem may be aggravated by the forthcoming presidential election and subsequent change of political administration in 1992. The substance of the project components, focussing as they do on alleviating poverty, is such that they should enjoy continued support from the Government despite a change in political administration. Intensive supervision would nonetheless be maintained during the political transition to ensure clear understanding of and commitment to sustaining the project. Additionally, the project design incorporates features to overcome implementation problems that have arisen in earlier projects in Ecuador, including: (a) the establishment of a small, flexible Project Coordination Unit, working closely with MOH's different administrative and operational levels; (b) contracting with specialized international agencies to improve and facilitate processes of procurement and technical assistance; (c) incorporation of a gradual incremental implementation approach that provides the project with desired flexibility; and (d) taking steps during preparation to build broad and decentralized support for the project among potential stakeholders and beneficiaries. A second risk concerns the financial sustainability of the project. Preparatory activities have reviewed the recurrent cost implications of the project and found that financing is feasible as long as the Government is prepared to retain a high priority in the budget for improved basic health services. The project would include annual sector reviews and project budget reviews during supervision, as well as a thorough mid-project review. Establishment of cost-recovery schemes would be part of the project and would contribute to long-run sustainability.

IX. AGREEMENTS REACHED AND RECOMMENDATIONS

9.01 The Government submitted the following documents for the Bank's review and agreement: (a) a copy of Presidential Resolution No. 3292 dated April 29, 1992, establishing the local health service areas (para. 5.04); and (b) a copy of Ministerial Resolution No. 14107 dated May 15, 1992, establishing the Project Coordination Unit (para. 7.03).

9.02 During negotiations, assurances were obtained that:

- (a) site selection for infrastructure development and the rehabilitation programs after the second year of project implementation would be presented for Bank review prior to implementing the corresponding investments (para. 5.11).
- (b) the Government would implement the annual programs and timetables specifying levels of new and redeployed staff agreed with the Bank (para 5.12).

- (c) cost-recovery schemes would be established: (i) for generic drugs not included in the two MOH free-of-charge pharmaceutical programs, so that by mid-term review 30 percent of basic drug costs distributed in project areas would be recovered through user charges and 35 percent during the May 1996-December 1998 period (para. 5.16); and (ii) for the water and sanitation programs so as to finance 30 percent of water systems investment costs, 50 percent of the construction of latrines, and 100 percent of both house connections and maintenance of water systems (para. 5.31).
- (d) studies would be undertaken in the following areas, in accordance with the timetables appearing in Annex 11:
 - (i) drug procurement and pricing (para. 5.17); (ii) food supplementation schemes (paras. 5.22 and 5.23); (iii) micronutrient supplementation (para. 5.25); (iv) institutional arrangements of the sanitation sector (para. 5.29); (v) models used for the water and sanitation provincial trials (para. 5.29); (vi) user fees-for-services and the role of cost-recovery and alternative payment mechanisms in sectoral finance and resource allocation, respectively (paras. 5.42-5.44); (vii) rehabilitation of the hospital system and the respective financial plan (paras. 5.42-5.44); and (viii) interinstitutional coordination between MOH and IESS (paras. 5.42-5.44). The results of these studies would then be reviewed with the Bank and agreed recommendations would be carried out as appropriate.
- (e) the food production plant currently owned by the Government could be an eligible supplier of food supplements only after it is privatized (para. 5.24).
- (f) the Government would follow the preliminary designs agreed with the Bank for the 20 new and 8 upgraded water systems to be constructed during the first year (para. 5.28).
- (g) the Government would apply the criteria agreed with the Bank for selection of communities for water and sanitation investments after the first year of project implementation (para. 5.32).
- (h) the timetables for developing and establishing each of the subsystems of the MIS would be prepared before March 31, 1993 (para. 5.39).
- (i) to ensure that MOH is properly resourced, the Government and the Bank would undertake an annual review, during the third quarter each year, of MOH budget and project expenditures for the forthcoming year. During the review, the Government would provide assurances that the overall level of budget resources allocated to public health programs would suffice to finance adequately: (i) the project year-by-year, including incremental recurrent expenditures; (ii) MOH expenditures required to expand activities similar to those of the project beyond the 40 local

health service areas covered by the project, if MOH opts for such expansion; and (iii) amounts per year no less than those expended by MOH in 1991. Each such review would conclude with the finalization of an annual plan of action to be carried out by the Borrower during the year immediately subsequent to the review (para. 6.06).

- (j) the PCU would be permanently staffed for the duration of the project (para. 7.05).
- (k) procurement agent and technical assistance management agents would be contracted to assist the Government in the drafting of bidding documents, acceptable to the Bank (para. 7.07).
- (l) audits would be conducted by an independent private auditor acceptable to the Bank (para. 7.15).
- (m) the Government agrees with the targets and indicators of project objectives included in the monitoring plan (para. 7.18).
- (n) the Government would prepare and furnish for Bank review, at the end of every six month period during project implementation, project reports regarding: (i) project implementation results and expenditure for the preceding six months; and (ii) a related review of achievements and shortfalls based on established plans and objectives. The two reports covering the immediately prior calendar year shall be consolidated into an annual report, which shall be the basis of an annual review held by the Bank and the Borrower in the third quarter of each calendar year during project implementation. Each such review shall conclude with the preparation of an annual plan of action to be carried out by the Borrower during the year following the review. A mid-term review would be carried out at the beginning of the fourth year of project implementation to conduct a comprehensive review of all project components. It would include, in addition, an evaluation of the effectiveness of provision of project inputs in achieving key targets for improving sector performance. During negotiations, assurances were obtained that the Government would carry out these evaluations (para. 7.20).

9.03 For Loan Effectiveness, the Bank would require:

- (a) the contracting of procurement agent and of technical assistance management agents (para. 7.07).
- (b) the execution of agreements with IEOS and CRM (para. 5.27).
- (c) the execution of a grant agreement with UNDP (para. 6.05 and para. 5.34).

ECUADOR

SECOND SOCIAL DEVELOPMENT PROJECT - HEALTH AND NUTRITION

ANNEXES 1 THROUGH 17

BASIC SOCIOECONOMIC INDICATORS

I. Basic Economic Indicators

A: GNP per capita (US\$ 1988)

B: Income distribution share of household, lowest 20%

C: Population below absolute poverty line (percent) 1977-87

II. Education*

D: Adult Illiteracy rate (percent)

E: Public Expenditure on Education as % of GNP

F: Public Expenditure on Education as % of Government

G: Public Expenditure on Education per Student US\$-Primary

H: Public Expenditure on Education per Student US\$-Secondary

I: Public Expenditure on Education per Student US\$-Higher Education

III. Health

J: Life Expectancy at birth (years) 1988

	A	B	C	D	E	F	G	H	I	J
Argentina	2,520	4.4	19	6.1	1.9	8.9	13	268	408	70.7
Bahamas	10,560	3.0	..	10.3	**6.2	17.7	...	...	...	69.9
Barbados	5,990	7.0	..	0.7	6.1	17.8	627	691	2,604	74.9
Belize	1,490	...	..	8.8	...	15.5	141	363	...	66.7
Bolivia	570	2.4	85	36.8	0.4	21.3	104	114	...	53.0
Brazil	2,160	2.0	73	22.2	4.5	17.7	219	246	1,300	65.3
Chile	1,510	4.0	..	8.9	3.6	15.3	180	158	581	71.6
Colombia	1,240	4.0	70	14.8	2.7	22.4	40	64	322	68.0
Costa Rica	1,690	3.3	34	7.4	4.6	21.6	165	322	1,177	75.0
Dominican Rep.	720	6.0	43	31.4	1.6	10.0	26	31	123	66.0
Ecuador	1,110	2.0	65	10.0	3.5	21.3	81	136	173	65.0
El Salvador	940	5.5	32	30.2	3.0	8.5	96	103	273	63.0
Guatemala	900	5.5	74	45.0	1.8	12.4	54	114	491	62.0
Guyana	420	...	..	8.4	9.6	8.1	101	93	2,421	66.1
Haiti	380	...	80	65.2	1.9	20.6	27	47	547	54.7
Honduras	860	6.9	55	40.5	4.9	19.5	111	176	1,023	64.0
Jamaica	1,060	5.4	80	3.9	5.2	11.0	140	188	2,064	73.0
Mexico	1,770	2.9	49	9.7	3.4	16.2	86	94	989	68.6
Nicaragua	830	3.0	19	42.5	6.2	12.0	271	438	3,150	64.0
Panama	2,130	2.0	30	11.8	5.4	14.3	283	348	1,072	71.9
Paraguay	1,180	...	50	12.5	1.5	16.7	45	139	502	66.9
Peru	1,300	4.4	68	18.1	3.3	15.7	158	215	266	62.0
Suriname	2,450	9.0	..	10.0	10.4	22.8	908	383	2,305	66.6
Trinidad & Tob.	3,350	4.2	39	5.1	5.8	12.3	1,050	1,403	5,521	71.0
Uruguay	2,510	6.0	..	6.1	3.1	15.0	318	390	669	72.0
Venezuela	3,250	3.0	56	15.3	5.4	21.3	232	137	2,074	70.1
LAC Average	1,860	4.4	54	16.7	4.0	16.6	219	266.4	1202.2	67.0

Reference Groups

Low income	320	...	65	43.3	4.0	8.5	...	...	...	60.0
Middle income	1,940	4.4	36	26.2	4.4	11.2	...	...	...	66.0
High income	17,080	4.7	..	...	5.4	3.9	...	...	...	76.0

Source: The LAC Connection, World Bank, LATHR, 1990.

* Most recent estimates around 1986

** Refers to 1975

... Not available

BASIC SOCIOECONOMIC INDICATORS

IV. Health

- L: Number of Habitants per Doctor 1984-87
M: Number of Habitants per Nurse 1984-87
N: Government Expenditure on Health as a percentage of total expend. 1987

V. Nutrition

- O: Infants with Low Birth-Weight (percent)
P: Daily Calorie Supply per capita
Q: Protein Supply per capita (grams per day)
R: Index of Food Production per capita (1979-81 = 100)

VI. Population

- S: Population (thousands) 1989
T: Population Growth-percent/per year 1980-86
U: Population Growth-percent/per year 1986-2000 (estimate)
V: Birthrate per Thousand Population 1988
W: Deathrate per Thousand Population 1988

	L	M	N	O	P	Q	R	S	T	U	V	W
Argentina	374	981	2.1	6	3,210	107	96.9	32,429	1.4	1.1	21	9
Bahamas	1,060	206	13.5		2,652	77	101.5	262	2.0	1.8	25	5
Barbados	1,123	223	11.6	6	3,199	100	73.0	262	0.3	0.2	17	8
Belize	2,221	496	9.0		2,599	70	91.3	183	1.9	1.7	37	7
Bolivia	1,538	2,477	1.9	12	2,143	56	94.8	7,113	2.7	2.7	42	14
Brazil	1,080	1,205	9.5	8	2,656	61	111.8	147,399	2.2	1.8	28	8
Chile	1,231	371	6.3	7	2,579	67	105.0	12,960	1.7	1.3	23	6
Colombia	1,186	627	4.5	15	2,542	56	101.7	31,192	2.1	1.6	26	6
Costa Rica	958	450	19.3	10	2,803	68	86.0	2,941	2.3	2.0	27	4
Dom. Rep.	1,763	1,209	10.6	16	2,477	53	91.5	7,018	2.4	1.8	31	7
Ecuador	2,900	2,684	7.3	20	2,058	49	95.9	10,490	2.6	2.2	32	7
El Salv.	2,829	934	7.4	15	2,160	53	90.3	5,135	1.3	2.1	36	8
Guatemala	2,184	851	7.6	10	2,307	60	90.0	8,935	2.9	2.8	40	8
Guyana	6,220	885	5.7	11	2,484	60	77.6	1,023	0.8	0.6	27	7
Haiti	7,179	2,292	11.1	17	1,902	45	95.2	6,382	1.8	1.9	35	13
Honduras	1,511	672	14.7	20	2,068	53	75.1	4,982	3.6	2.9	39	8
Jamaica	2,065	492	7.8	8	2,590	58	100.1	2,483	1.5	0.5	23	6
Mexico	1,242	880	1.3	15	3,132	81	92.5	86,737	2.2	1.9	28	6
Nicaragua	1,498	534	...	15	2,495	63	70.5	3,745	3.4	3.0	41	7
Panama	1,000	390	16.7	8	2,446	59	92.1	2,370	2.2	1.6	26	5
Paraguay	1,459	999	5.8	6	2,853	79	107.5	4,157	3.2	2.7	35	6
Peru	1,042	...	5.8	9	2,246	61	95.5	21,790	2.2	2.1	31	9
Suriname	1,264	276	3.7		2,725	67	101.9	397	0.2	0.4	32	7
Trin. & Tob	962	258	15.9		3,082	82	71.6	1,263	1.7	1.4	26	6
Uruguay	502	...	4.8	8	2,648	78	104.2	3,104	0.6	0.6	17	10
Venezuela	701	...	10.0	9	2,494	66	93.2	19,245	2.8	2.2	30	5
LAC Average	933	857	6.7	11	2,700	69	100.7	*413,600	2.2	1.8	28	7
Ref Groups												
L.-income	1,462	1,547	4.2	18	2,384	57	116.4	*2,884,000	2.0	1.9	31	10
M.-income	1,334	...	6.7	10	2,846	75	100.7	*1,068,000	2.2	1.9	29	8
H.-income	530	168	12.7	7	3,376	101	102.1	*784,200	0.7	0.6	14	9

Source: The LAC Connection, World Bank, LATHR, 1990.

* Refers to the total population
... Not available

Table 1

ECUADOR
Public Expenditure in Social Sectors by Ministry and Main Institutions
1980-1990
Millions of Constant 1988 Suces

Year	Education <u>a/</u>	Welfare	Labor	Health	Sub-Total Ministries	SECAP	IEOS	IESS <u>b/</u>	Sub-Total Institut.	Total
1980	186,516	2,956	1,092	27,974	218,538	1,071	6,734	18,758	26,563	245,101
1981	139,157	4,337	1,674	35,754	180,922	2,106	8,008	22,039	32,153	213,075
1982	129,233	4,176	1,274	36,593	171,276	1,524	8,580	23,513	33,617	204,893
1983	112,345	5,096	1,106	32,971	151,518	1,755	7,390	21,736	30,861	182,378
1984	108,299	2,965	807	31,303	143,373	1,012	6,865	18,610	26,487	169,861
1985	110,434	3,614	791	32,251	147,089	1,229	3,808	21,211	26,248	173,337
1986	111,690	4,303	983	31,424	148,600	1,163	7,645	17,539	26,347	174,947
1987	107,451	4,552	876	32,298	145,177	2,063	10,941	18,684	31,688	176,865
1988	101,045	3,951	1,024	32,552	138,570	2,344	10,246	17,941	30,531	169,101
1989 <u>c/</u>	86,779	11,147	1,022	36,882	135,829	1,159	10,904	14,187	26,250	162,080
1990 <u>d/</u>	75,452	13,870	1,274	40,404	131,000	1,260	18,474	18,780	38,514	169,514

Source: Ministry of Finance, "Presupuesto del Estado; 1980-1990: Gasto Efectivo"
 Ministerial and Institutional Budgets

Notes:

- a/ Includes all higher education expenditures.
- b/ Includes health related expenditures only.
- c/ Provisional figures.
- d/ Coded Budget as of April 30, 1990.

Table 2

ECUADOR
Share of Social Expenditures in GDP and in Total Public Budget (PB)
(1)

	Education		Health		Other Social Sec.		Sub- Total		Institutes		Total Social Sectors	
	GDP	PB	GDP	PB	GDP	PB	GDP	PB	GDP	PB	GDP	PB
1970	2.8	19.8	0.5	3.4	n.a.	n.a.	3.3	23.2	n.a.	n.a.	n.a.	n.a.
1980	7.2	50.0	1.1	7.5	0.2	1.1	8.4	58.6	1.0	7.1	9.4	65.7
1981	5.1	31.8	1.3	8.2	0.2	1.4	6.7	41.3	1.2	7.3	7.8	48.7
1982	4.6	30.2	1.3	8.5	0.2	1.3	6.1	40.0	1.2	7.9	7.4	47.9
1983	4.2	29.0	1.2	8.5	0.2	1.6	5.6	39.1	1.1	8.0	6.8	47.0
1984	3.9	28.7	1.1	8.3	0.1	1.0	5.1	38.0	0.9	7.0	6.1	45.0
1985	3.8	24.8	1.1	7.3	0.2	1.0	5.0	33.1	0.9	5.9	5.9	39.0
1986	3.7	25.5	1.0	7.2	0.2	1.3	5.0	34.0	0.9	6.0	5.8	40.0
1987	3.8	26.3	1.2	7.9	0.2	1.3	5.2	35.6	1.1	7.8	6.3	43.3
1988	3.2	24.2	1.0	7.8	0.2	1.2	4.3	33.2	1.0	7.3	5.3	40.6
1989	2.7	22.1	1.1	9.4	0.4	3.1	4.2	34.6	0.8	6.7	5.0	41.3
1990	2.3	15.1	1.2	8.1	0.5	3.0	3.9	26.3	1.2	7.7	5.1	34.0

Source: Social Sector Study estimates (see Table 1.1 and Annex 17).

Table 3

ECUADOR
ACTUAL SOCIAL SECTOR EXPENDITURE BY MINISTRY
(Thousand Constant 1988 US\$)

	1980			1981			1982		
	RECURRENT	INVESTMENT	TOTAL	RECURRENT	INVESTMENT	TOTAL	RECURRENT	INVESTMENT	TOTAL
EDUCATION									
Pre-school & Primary	119,834	0	119,834	111,757	36	111,792	98,868	87	98,705
Middle School	92,811	357	92,648	85,252	13	85,268	80,457	31	80,488
Higher Education	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Other	135,870	79,938	215,608	84,831	37,281	122,112	81,903	35,308	117,211
Sub-total	347,515	80,275	427,790	281,840	57,330	319,170	261,028	35,376	296,404
LABOR									
Employment promotion & Human Resources development	375	14	389	449	139	589	408	112	520
Other	1,878	257	2,115	1,951	1,299	3,250	1,558	846	2,404
Sub-total	2,254	251	2,505	2,400	1,438	3,838	1,965	959	2,924
HEALTH									
Nutrition & Prevention programs	539	26	545	1,007	114	1,120	2,002	39	2,041
Other	63,234	10,362	63,896	67,140	13,745	80,885	63,782	18,132	81,894
Sub-total	63,774	10,388	64,161	68,146	13,859	82,005	65,784	18,172	83,935
WELFARE									
Popular promotion programs	381	1	382	558	65	624	377	2,638	3,015
Child protection	3,016	94	3,110	3,315	90	3,405	2,959	750	3,709
Other	2,322	966	3,287	2,751	3,168	5,918	1,822	1,035	2,857
Sub-total	5,719	1,060	6,779	6,624	3,323	9,947	5,158	4,424	9,581
TOTAL	409,261	91,974	501,235	389,011	55,950	414,961	333,914	58,930	392,845

	1983			1984			1985		
	RECURRENT	INVESTMENT	TOTAL	RECURRENT	INVESTMENT	TOTAL	RECURRENT	INVESTMENT	TOTAL
EDUCATION									
Pre-school & Primary	87,868	0	87,868	84,778	8	84,786	87,714	2	87,717
Middle School	74,470	58	74,328	74,072	32	74,104	79,400	87	79,487
Higher Education	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	40,400	7,778	48,178
Other	77,288	18,818	95,579	68,932	20,866	89,498	21,773	18,132	57,908
Sub-total	239,606	18,871	257,676	227,781	20,807	248,588	229,287	34,002	253,289
LABOR									
Employment promotion & Human Resources development	357	69	426	333	114	447	315	59	374
Other	1,302	809	2,112	1,358	48	1,403	1,338	108	1,444
Sub-total	1,659	878	2,538	1,690	162	1,851	1,650	167	1,818
HEALTH									
Nutrition & Prevention programs	1,207	334	1,541	1,394	15	1,409	1,024	20	1,044
Other	68,951	17,182	74,063	53,638	16,810	70,448	53,172	19,754	72,928
Sub-total	68,158	17,466	75,625	54,972	16,825	71,798	54,196	19,774	73,970
WELFARE									
Popular promotion programs	345	528	1,178	811	336	1,147	284	478	758
Child protection	3,098	904	4,000	2,844	635	3,479	2,954	381	3,335
Other	1,468	5,048	6,511	1,041	1,632	2,673	3,599	888	4,187
Sub-total	4,911	6,772	11,689	4,196	2,604	6,799	6,837	1,452	8,289
TOTAL	304,089	43,488	347,527	298,638	40,198	328,836	291,670	45,398	337,068

(Cont'd)

Table 3
(cont'd)

ECUADOR
ACTUAL SOCIAL SECTOR EXPENDITURE BY MINISTRY
(Thousand Constant 1988 US\$)

	1986		1987		1988	
	RECURRENT INVESTMENT	TOTAL	RECURRENT INVESTMENT	TOTAL	RECURRENT INVESTMENT	TOTAL
EDUCATION						
Pre-school & Primary	89,568	0	89,568	83,250	0	83,250
Middle School	84,140	0	84,140	79,701	17	79,718
Higher Education	42,484	7,982	50,418	40,200	6,265	46,465
Other	20,273	11,773	32,046	21,471	15,846	37,317
Sub-total	236,435	19,735	256,170	224,621	21,827	246,448
LABOR						
Employment promotion & Human Resources development	481	123	605	345	6	351
Other	1,542	109	1,651	1,442	217	1,659
Sub-total	2,023	233	2,256	1,787	222	2,009
HEALTH						
Nutrition & Prevention programs	1,301	30	1,330	953	23	976
Other	62,847	7,897	70,744	58,313	14,788	73,101
Sub-total	64,148	7,927	72,073	59,266	14,811	74,077
WELFARE						
Popular promotion programs	315	219	535	236	33	269
Child protection	3,189	488	3,657	3,396	60	3,456
Other	2,364	3,774	6,138	1,618	5,097	6,716
Sub-total	5,849	4,481	10,330	5,250	5,191	10,441
TOTAL	308,453	32,378	340,830	290,925	42,051	332,976

	1989 1/		1990 2/		TOTAL
	RECURRENT INVESTMENT	TOTAL	RECURRENT INVESTMENT	TOTAL	
EDUCATION					
Pre-school & Primary	68,944	0	68,944	50,157	0
Middle School	84,480	184	84,844	80,365	322
Higher Education	31,472	4,442	35,914	30,821	3,742
Other	20,058	9,478	29,532	27,770	9,877
Sub-total	184,952	14,082	199,034	159,113	13,941
LABOR					
Employment promotion & Human Resources development	328	29	355	281	84
Other	1,738	250	1,988	2,372	185
Sub-total	2,064	279	2,343	2,653	269
HEALTH					
Nutrition & Prevention programs	--	--	-- 2/	--	--
Other	--	--	-- 2/	--	-- 2/
Sub-total	56,028	28,864	84,892	50,581	42,089
WELFARE					
Popular promotion programs	249	147	396	580	782
Child protection	3,115	268	3,381	3,305	337
Other	17,154	4,638	21,790	22,980	3,328
Sub-total	20,518	5,049	25,567	27,865	4,447
TOTAL	233,882	47,974	281,856	239,712	60,748

1/ Actual expenditure (provisional figures).
2/ Program budget classification was modified.
3/ Coded Budget to April 30.

Table 4

EQUADOR
ACTUAL SOCIAL SECTOR EXPENDITURE OF THE PUBLIC INSTITUTES
(Thousand of Constant 1968 US\$)

	1986			1987			1988		
	RECURRENT	INVESTMENT	TOTAL	RECURRENT	INVESTMENT	TOTAL	RECURRENT	INVESTMENT	TOTAL
EDUCATION									
SNALME	121	458	578	127	484	592	124	427	551
Inst. Nal. de Patrimonio Cultural	190	84	253	219	218	431	217	278	492
Coop. Cult. Ec. Benj. Carrion	885	848	1,553	757	901	1,558	744	1,320	2,064
Orquesta Sinfonica Nacional	163	1	164	194	2,161	2,355			
DINACE							1,417	4,848	6,263
LABOR									
INEM	32	66	98	40	73	113	50	2	52
LINEPROM				98	2	100	25	101	127
SECAP	2,284	385	2,668	2,244	2,488	4,733	1,635	3,741	5,376
HEALTH									
SNEM	2,512	14	2,526	2,929	18	2,947	2,550	48	2,598
Inst. Nal. Leopoldo Izquieta	2,202	89	2,291	2,232	94	2,325	1,909	79	1,988
IEDS	1,897	15,642	17,535	2,044	23,049	25,093	2,287	21,214	23,501
WELFARE									
SEDRI	899	7,440	8,039	844	10,380	10,924	484	8,732	9,197
TOTAL	10,880	24,825	35,705	11,429	39,742	51,171	11,432	40,786	52,218

	1989		
	RECURRENT	INVESTMENT	TOTAL
EDUCATION			
SNALME	125	375	500
Inst. Nal. de Patrimonio Cultural	185	372	537
Coop. Cult. Ec. Benj. Carrion	721	1,108	1,827
Orquesta Sinfonica Nacional	174	24	198
DINACE			
LABOR			
INEM	225	20	245
LINEPROM	55	81	136
SECAP	2,105	4,485	6,590
HEALTH			
SNEM	2,238	4	2,290
Inst. Nal. Leopoldo Izquieta	1,280	58	1,333
IEDS	2,182	22,847	25,009
WELFARE			
SEDRI	892	14,257	14,850
TOTAL	9,891	43,600	53,490

Table 5

ECUADOR
ACTUAL UNIT COST, BY SECTOR AND BY PROGRAM, 1980-1990
(CONSTANT 1988 US\$)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
EDUCATION											
Pre-school & Primary	78.01	89.14	89.37	81.23	48.24	49.99	48.89	44.49	42.20	49.20	38.49
Middle School	172.10	181.08	136.04	120.15	113.98	112.82	118.48	107.09	104.55	117.02	95.28
Higher Education	n.d.	n.d.	n.d.	n.d.	n.d.	139.37	131.89	109.10	292.42	352.87	360.68
Other	93.39	80.81	46.81	28.62	485.28	178.54	129.69	122.95	87.20	112.11	128.05
Sub-total	841.50	271.03	242.22	208.00	647.48	478.53	426.43	383.63	628.39	631.00	622.81
LABOR											
Employment promotion & Human Resources development	0.14	0.21	0.18	0.14	0.15	0.12	0.19	0.10	0.09	0.11	0.10
Other	0.79	1.17	0.84	0.71	0.48	0.48	0.61	0.50	0.59	0.49	0.58
Sub-total	0.93	1.38	1.02	0.85	0.61	0.58	0.70	0.60	0.68	0.60	0.78
SECAP	11.84	25.09	18.05	17.95	9.81	13.82	9.85	15.65	17.79	8.88	n.d.
HEALTH											
Nutrition & Prevention program	0.07	0.13	0.24	0.17	0.15	0.11	0.14	0.10	0.56	0.41	0.40
Other	7.83	9.67	9.52	8.37	7.73	7.78	7.33	7.37	6.76	7.15	6.78
Sub-total	7.90	9.81	9.75	8.54	7.88	7.89	7.47	7.47	7.32	7.56	7.18
IESS	1.90	2.20	2.29	1.91	1.73	0.93	1.82	2.53	2.30	2.02	n.d.
IESS											
Medic. Oper.	53.94	58.74	58.21	48.65	38.58	38.82	29.91	29.78	27.24	20.47	26.51
Med. Subsidy	3.81	3.55	3.28	2.37	1.75	1.55	1.18	1.45	1.14	0.77	0.75
Sub-total Medic. IEES	57.75	62.29	61.49	49.02	38.32	40.17	31.09	31.23	28.38	21.24	27.26
										0.00	0.00
WELFARE											
Popular promotion programs	0.05	0.07	0.35	0.13	0.07	0.08	0.08	0.03	0.04	0.09	0.11
Child protection	288.73	257.59	273.95	288.44	244.93	229.28	245.45	226.48	204.23	237.43	242.79
Other	0.40	0.71	0.33	0.74	0.29	0.45	0.64	0.68	0.54	1.32	2.38
Sub-total	289.19	258.37	274.64	289.31	245.29	229.78	246.14	227.16	204.80	238.84	245.28

Table 6
ECUADOR
MINISTRY OF PUBLIC HEALTH
Expenditure by Program
(2)

	1985	1986	1987	1988	1989 1/
Central Activity, Direction and General Administration	1.9	2.3	1.7	1.6	1.1
Health Administration Zone II	-	-	0.6	0.9	0.3
Health Technical Normative Services	1.4	1.9	1.3	7.7	5.5
Environmental health and sanitary works	8.6	-	9.1	16.8	35.5
Provincial health service administration	66.9	70.2	67.7	66.7	47.1
Communitary budgeted credits	4.2	4.0	19.6	6.3	10.5
Investment in health centers	17.0	14.4	-	-	-
Child health care and basic medications	-	7.2	-	-	-
Total Sector	100.0	100.0	100.0	100.0	100.0

Source: Social Sector Study estimates, based on Ministry of Finance data.

1/ Coded Budget

Sources and Notes: Table 1, 4, 5

- 1). Gastos de los Ministerios: Fuente: Ministerio de Finanzas, Presupuesto del Estado; 1980-1988: Gasto Efectivo; 1989: Presupuesto Codificado a 30 de agosto; 1990: Presupuesto Aprobado (inicial)
- 2). Educación Superior : 1985-1990 : Ministerio de Finanzas, Presupuesto del Estado (Veáse Cuadro 1). Para 1980-1985 no es posible separar este renglón de "otros" en el presupuesto del MEC. Se incluyen sólo las transferencias que figuran en el Presupuesto Nacional, pues algunas, cuya cuantía no fué posible determinar sino para el año 1987, parecen ir directamente al Fondo de Universidades; en efecto, según la Subsecretaría del Tesoro y el Banco Central del Ecuador, Dirección Central de Estadísticas Presupuestarias, el total de transferencias efectivas para Universidades y Escuelas Politécnicas en 1987 fué de s/14'546.278.000 a comparar con los s/13.829'054.000 del presente cuadro.
- 3). SECAP : Dirección de Planeación; 1980-1989 : las "transferencias de presupuesto" son su valor efectivo total; bajo "con ingresos propios" se incluyen gastos con cargo al impuesto del 0.5% sobre nómina, superávit y "otros"; el rubro se calculó por diferencia entre gasto total y transferencias de presupuesto; en 1981 se incluye la contrapartida del préstamo BID; en 1986, 88 y 89 se incluyen préstamos BEDE.
- 4). Ministerio de Salud, Discriminación por programas 1985-1989: Datos de la Dirección de Presupuesto del Ministerio.
- 5). IEOS : Dirección de Presupuesto. En "transferencias presupuestales" se incluyen las partidas subvención fiscal para funcionamiento (No.30-120-100) y subvención fiscal para inversiones (No.30-200-100); no se incluyen depósitos de otras entidades públicas, aportes con destinación especial ni fondos con interés regional. 1980-1988 : Transferencia efectiva; 1989 : signación original. El rubro de gastos financiados "con otros

ingresos" se calculó por diferencia entre el gasto total y las transferencias presupuestales.

- 6). IESS : Departamento de Control y Evaluación Presupuestaria. 1980-1985 : Balances Generales; 1986-1989 : Ejecución Presupuestaria; 1990 : Proforma Presupuestaria.

Cobertura. No se incluye : a) El gasto de los hogares; b) El gasto público financiado con ingresos propios de las provincias y municipios, ni c) El gasto en educación, capacitación de recursos humanos, salud y "bienestar" que efectúan otros ministerios, en especial el de Defensa. Las dos últimas categorías de gasto parecen sin embargo de muy poca importancia dentro del gasto público social total (menos del 5%).

Por lo demás, debido a que las fuentes son independientes y sus sistemas de clasificación no comparables estrictamente, puede haber algunas sumas incluidas tanto bajo "IEOS-transferencias presupuestales" como bajo "MSP-otros"; esta doble contabilización podría estar, como máximo, y según el año, entre un 3 y un 8% de las transferencias al IEOS.

- 7) Educación Preescolar, Primaria y Media : Número de Alumnos según MEC, Estadísticas de la Educación.
- 8) Educación Superior : Según UNESCO, el número de matriculados en 1983 era de 280.599 y la matrícula aumentó entre 1978 y 1983 al 11% anual. (Desarrollo Educativo. Problemas y Prioridades, 1986). A falta de otra información, se extrapoló la serie completa. Debe además señalarse que se habla de una sobreestimación cercana a 1/3 en el número de estudiantes universitarios, lo cual por supuesto elevaría proporcionalmente el costo unitario del Cuadro 8.
- 9) Para los "otros" programas educativos se toma el total de estudiantes.
- 10) Trabajo : Población Económicamente Activa Total 1983-1987 según BCE, Boletín anuario No. 10, 1987; 1980-82 y 1983-90 : proyectada por regresión.
- 11) SECAP : Dirección de Planeación, número total de horas de formación impartida.

- 12) Salud : Población Total, según compilación del ILDIS Estadísticas del Ecuador, 1988 y Proyecciones CONADE para 1989-90.
- 13) IEOS : id.
- 14) IESS : Población Asegurada. 1980, 1985, 1986 y 1987 : Carmelo Mesa Lago, Financial and Economic Evaluation of Social Insurance (I.E.S.S.) in Ecuador, Noviembre 20, 1989; 1982 : Peter Thulen, Nota Técnica, Mimeo, 1987; 1990: W. Vacca, IESS, Nadie Debe Callar, 1988 (Proyección).
Para los demás años : interpolación de los autores.
- 15) Bienestar Social : "Promoción Popular" y "Otros", Población Total Protección de Menores : a partir del dato suministrado por la Dirección de Protección y Rehabilitación del Ministerio para 1989, se supuso que la cobertura de los programas era un porcentaje constante de la población entre 0 y 10 años, esta última según ILDIS, op. cit.

Table 7
ECUADOR
Household Share of Subsidy on Health, by Income Level (%)
1985.

Annual Income (Suces)	Annual Subsidy (Suces)				Weight of group in total
	0	1-4000	4001-2200	>2000	
Low < 450,000	67.4	22.3	9.6	0.6	50.9
Mid-Low 451,000-900,000	64.4	18.0	17.4	1.1	23.2
Mid-High 900,001-1,350,000	67.4	17.9	14.0	0.5	12.1
High > 1,350,000	72.1	17.7	9.8	0.9	13.8
Total	66.8	20.4	12.1	0.7	100.0

Source: Social Sector Study estimates based on: G nzalo
Bustos, El Gasto Publico Social Ecuatoriano y sus
Efectos Redistributivos. Quito, PUCE - CONUEP 1988.

4. About 68% of the families surveyed had no health services coverage, and 75% of family units earning less than a minimum living wage per month found themselves in this situation.

Table 8
ECUADOR
Household Share of Subsidy on Water & Sewerage, by Income Level (X)
1985.

Annual Income (Suces)	Annual Subsidy (Suces)				Weight of group in total
	0	1-7,500	7,501-15,000	>15,001	
Low < 450,000	45.5	35.6	18.8	0.1	50.9
Mid-Low 451,000-900,000	26.5	31.8	33.7	4.5	23.2
Mid-High 900,001-1,350,000	22.2	31.6	46.0	0.0	12.1
High > 1,350,000	21.5	35.0	42.1	0.0	13.8
Total	35.4	34.5	28.9	1.1	100.0

Source: Social Sector Study estimates based on: Gonzalo Bustos, El Gasto Publico Social Ecuatoriano y sus Efectos Redistributivos. Quito, PUCE - CONUEP 1988.

8. About 25% of all families do not receive subsidy for water. On average, about one-third of households in the three lowest income groups do not have access to this service. On the other hand, 50% of the poorest families receive the same subsidy --between S/. 5,000 and S/. 10,000 annually--a proportion which is also true among families in the highest income groups (Table 7).

Table 9
ECUADOR
Household Share of Subsidy on Education, by Income Level (%)
1985.

Annual Income (Suces)	Annual Subsidy (Suces)				Weight of group in total
	0	1-16,000	16,001-32,000	>32,000	
Low < 450,000	3.6	69.3	20.8	4.3	50.9
Mid-Low 451,000-900,000	1.9	66.9	25.2	4.0	23.2
Mid-High 900,001-1,350,000	3.1	72.0	20.3	8.1	12.1
High > 1,350,000	4.5	75.7	17.9	2.7	13.8
Total	3.3	70.7	21.6	4.5	100.0

Source: Social Sector Study estimates based on: Gonzalo Bustos, El Gasto Publico Social Ecuatoriano y sus Efectos Redistributivos. Quito, PUCE-CONUEP 1988.

5. There is better coverage in education and more equitable distribution of subsidies. About 96.6% of the households surveyed benefit from it. In the case of 67% of the families the subsidy amounts to between S/.40,000 and S/. 160,000 per annum. But 70% of families in the wealthiest segment of the population are in this high subsidy group (Table 4).

Table 10
ECUADOR
Household Share of Subsidy on Social Security, by Income Level (%)
1985.

Annual Income (Suces)	Annual Subsidy (Suces)				Weight of group in total
	0	1-60,000	60,000-120,000	>120,000	
Low < 450,000	92.9	5.0	0.2	0.0	50.9
Mid-Low 451,000-900,000	94.1	4.8	1.0	0.0	23.2
Mid-High 900,001-1,350,000	88.8	8.7	1.0	0.5	12.1
High > 1,350,000	92.9	6.7	0.9	0.4	13.8
Total	93.6	5.7	0.1	0.1	100.0

Source: Social Sector Study estimates based on: Gonzalo Bustos, *El Gasto Publico Social Ecuatoriano y sus Efectos Redistributivos*. Quito, PUCE-CONUEP 1988.

6. The lowest participation level of households is with respect to social security, as about 94.2% do not receive this state subsidy. In the three lowest groups non-coverage is almost universal (Table 5).

Table 11
ECUADOR
Household Share of Housing, by Income Level (X)
1985.

Annual Income (Suces)	Annual Subsidy (Suces)				Weight of group in total
	0	1-160	161-320	>320	
Low < 450,000	69.0	23.5	3.0	2.5	50.9
Mid-Low 451,000-900,000	61.5	26.3	4.3	8.0	23.2
Mid-High 900,001-1,350,000	62.8	18.9	9.1	8.1	12.1
High > 1,350,000	58.7	15.6	9.8	16.6	13.8
Total	65.8	22.8	5.0	6.4	100.0

Source: Social Sector Study estimates based on: Gonzalo Bustos, El Gasto Publico Social Ecuatoriano y sus Efectos Redistributivos. Quito, PUCE-CONUEP 1983.

7. About 66% do not receive any subsidy under housing programs. About 76% of the poorest segment and 70.2% of the second poorest segment do not benefit from the programs. However, unsubsidized families account for only 58% of the total population at the highest income levels.

Annex 3, Table 1: ECUADOR - PRINCIPAL CAUSES OF DEATH, 1989

CAUSE	NUMBER	RATE PER 100,000	PERCENT OF ALL DEATHS
Ill-defined Intestinal Infections	2805	26.7	5.4
Pneumonia	2525	24.1	4.9
Motor Vehicle Accidents	1909	18.2	3.7
Acute Myocardial Infarction	1586	15.1	3.1
Bronchitis, Emphysema, and Asthma	1548	14.5	3.0
Fetal and Neonatal Hypoxia	1339	12.8	2.6
Malignant Neoplasm of Stomach	1287	12.3	2.5
Tuberculosis of Respiratory System	1155	11.0	2.2
Homicide and Injury	1122	10.7	2.2
Diabetes Mellitis	953	9.7	1.8
Others			54.3
TOTAL	51,736	493.2	100.0

Source: Ecuadorean Ministry of Health

Annex 3, Table 2: ECUADOR - BASIC INDICATORS BY PROVINCE, 1989

PROVINCE	BIRTH RATE *	MATERNAL MORTALITY RATE **	PERINATAL MORTALITY RATE **	CRUDE DEATH RATE *	INFANT MORTALITY RATE **	NEONATAL MORTALITY RATE **	POST-NEONATAL MORTALITY RATE **	CHILD MORTALITY RATE ***
TOTAL	19.1	1.7	31.3	4.9	44.2	19.1	25.1	2.8
AZUAY	19.9	2.7	25.8	6.2	44.4	20.7	23.8	3.5
BOLIVAR	26.2	1.8	19.9	7.1	47.5	18.3	29.2	5.6
CANAR	21.8	1.8	18.8	6.2	40.0	13.8	26.3	3.5
CARCHI	20.6	1.3	31.4	5.9	51.9	20.6	31.4	4.0
COTOPAXI	25.2	1.9	35.2	8.0	66.6	17.8	48.8	6.5
CHIMBORAZO	27.4	2.5	27.0	8.9	56.4	19.9	36.5	6.7
EL ORO	16.9	1.4	18.5	3.7	26.5	9.9	16.7	2.3
ESMERALDAS	23.0	2.7	30.1	5.3	52.8	19.1	33.7	3.6
GUAYAS	14.2	1.2	48.8	4.2	51.0	27.4	23.6	1.6
IMBABURA	24.0	2.5	28.9	7.6	52.1	20.8	31.3	5.5
LOJA	21.5	2.7	17.2	4.8	27.6	9.9	17.7	2.8
LOS RIOS	17.1	2.1	58.8	5.2	61.2	24.8	36.4	2.9
MANABI	22.9	1.3	13.1	3.9	23.6	8.4	15.2	1.6
MORONA SANTIAGO	20.8	2.5	23.7	3.6	34.2	14.6	19.6	3.2
NAPO	31.9	1.6	12.2	4.2	34.0	9.6	24.4	2.1
PASTAZA	20.6	1.1	28.3	3.2	34.0	10.2	23.8	2.1
PICHINCHA	18.4	1.2	30.2	4.2	41.6	21.1	20.5	2.4
TUNGURAGUA	22.2	2.0	41.0	7.0	56.1	24.3	31.7	4.5
ZAMORA CHINCHIPE	21.4	2.7	15.0	3.5	28.7	10.9	17.8	3.7
GALAPAGOS	18.3	0.0	29.6	1.4	17.8	17.8	0.0	0.9
SUCUMBIOS	17.0	0.7	23.9	2.9	42.3	12.7	29.6	3.9

* RATE PER 1,000 ** RATE PER 1,000 LIVE BIRTHS *** RATE PER 1,000 CHILDREN OF 1-4 YEARS
Source: INEC. Yearly Vital Statistics

Annex 3, Table 3: ECUADOR - INFANT AND MATERNAL MORTALITY RATES, 1962 - 1989

YEAR	INFANT	MATERNAL
	Per 1,000 Live Births	
1962	95.8	2.4
1963	94.6	2.6
1964	94.0	2.3
1965	92.8	2.5
1966	90.4	2.4
1967	87.3	2.5
1968	86.1	2.3
1969	91.0	2.3
1970	83.0	2.2
1971	72.4	2.0
1972	81.9	2.0
1973	75.8	1.9
1974	70.1	2.0
1975	65.8	2.3
1976	98.4	2.0
1977	70.8	1.9
1978	64.4	2.1
1979	68.1	1.8
1980	63.8	1.9
1981	60.0	1.9
1982	60.4	1.8
1983	61.5	2.0
1984	54.1	1.2
1985	50.5	1.8
1989	44.2	1.7

Source: INEC and Ecuadorean Ministry of Health Yearly Vital Statistics

Annex 3, Table 4: ECUADOR - LEADING CAUSES OF INFANT MORTALITY, 1989

RANKING	CAUSE OF DEATH	PERCENTAGE OF ALL DEATHS
1	Ill-defined Intestinal Infections	16.2
2	Hypoxia, Asphyxias, and Other Respiratory Dysfunctions	15.1
3	Pneumonia Conditions	7.0
4	Slow Fetal Growth, Malnutrition, and Prematurity	6.1
5	Chronic Bronchitis	6.1
6	Other Malnutrition-Related Conditions	3.6
7	Acute Bronchitis	3.2
8	Congenital Anomalies	2.2
9	Tetanus	1.9
10	Accidents	1.1
	Other Ill-defined	36.9

Source: Ecuadorean Ministry of Health

Annex 3, Table 5: ECUADOR - PRINCIPAL CAUSES OF MATERNAL MORTALITY, 1989

CAUSE	NUMBER	RATE PER 100,000 LIVE BIRTHS	PERCENT OF ALL MATERNAL DEATHS
Hemorrhage of Pregnancy and Delivery	91	50.0	26.8
Toxemia	82	40.0	24.1
Complications of the Puerperium	28	10.0	8.2
Abortion	25	10.0	7.4
Others	114	60.0	33.5
TOTAL	340	170.0	100.0

Source: Ecuadoran Ministry of Health

Annex 3, Table 6: ECUADOR - LEADING CAUSES OF CHILD MORTALITY, 1989

RANKING	CAUSE	MALE	FEMALE	TOTAL	%	RATE ²
1	Ill-defined Intestinal Infections	469	435	904	24.5	69.5
2	Pneumonia	186	167	353	9.6	27.2
3	Chronic Bronchitis	143	158	301	8.1	23.2
4	Other Malnutrition-Related Conditions	131	104	235	6.4	18.1
5	Measles	48	65	113	3.1	8.7
6	Acute Bronchitis	52	49	101	2.7	7.8
7	Traffic Accidents	56	41	97	2.6	7.5
8	Drowning and Other Water-Related Accidents	54	39	93	2.5	7.2
9	Intestinal Diseases Caused by Specific Organisms	30	41	71	1.9	5.5
10	Fire Accidents	37	31	68	1.8	5.2
	Ill-defined	220	213	433	11.7	33.3
TOTAL CHILD DEATHS		1984	1801	3695	100.0	284.3

Source: INEC. Yearly Vital Statistics

¹ Age one to four

² Rates per 100,000 children aged 1 -4

**Annex 3, Table 7: EL DOR -
MINISTRY OF HEALTH'S HEALTH FACILITIES
BY PROVINCE AND TYPE OF FACILITY, 1990**

PROVINCE	TOTAL	HOSPITALS				HEALTH CENTERS	HEALTH SUBCENTERS	HEALTH POST	DISPENSARIES AND OTHERS	NUMBER OF BEDS
		NATIONAL REFERRAL ¹	SPECIALTY	PROVINCE ²	CANTON ³					
TOTAL	1591	1	15	22	87	120	1100	228	18	8883
AZUAY	94		2	1	5	4	82			505
BOLIVAR	38			1	2	2	33			150
CANAR	71			1	1	4	46	19		190
CARCHI	49			1	2	1	37	8		160
COTOPAXI	54			1	3	2	44	4		247
CHIMBORAZO	86		1	1	4	1	60	19		413
EL ORO	91		1	1	5	2	79		3	379
ESMERALDAS	84			1	5	2	46	30		279
GALAPAGOS	7			1	1	3	1	1		30
GUAYAS	190		5	1	14	69	99		2	1417
IMBABURA	58			1	3	1	37	7	9	246
LOJA	105			1	7	4	53	38	2	371
LOS RIOS	69			1	5	1	50	11	1	285
MANABI	162			1	8	7	144	2		804
MORONA SANT.	48			1	5		29	13		103
NAPO	37			1	5		14	17		294
PASTAZA	35			1	1	1	16	16		51
PICHINCHA	187	1	6	2	6	13	148	10	1	2417
TUNGURAHUA	75			1	3	3	50	18		440
SUCUMBIOS	19			1			13	5		15
ZA. CHINCHIPE	32			1	2		19	10		87

¹REFERRAL: Offers the most complex services to patients referred from other facilities.

²PROVINCIAL: Offers the four basic specialties and other services as needed.

³CANTON: Offers only the four basic specialties.

Annex 3, Table 8: ECUADOR - GROWTH OF MOH CONSULTATIONS¹

YEAR	TOTAL CONSULTATIONS	INCREASE IN # OF CONSULTATIONS	ANNUAL GROWTH RATE (percent)	CONSULTATIONS PER CAPITA
1977	3,025,251	---	--	0.410
1978	3,401,274	376,023	12	0.432
1979	3,956,895	555,621	16	0.509
1980	4,280,836	323,941	8	0.527
1981	4,699,208	418,462	10	0.546
1982	5,246,043	546,745	12	0.610
1983	5,895,792	649,749	12	0.666
1984	5,596,839	-298,953	- 5	0.548
1985	5,930,904	334,065	6	0.632
1986	6,040,723	109,819	2	0.626
1987	6,114,432	73,709	1	0.616

Source: Ecuadorean Ministry of Health
¹ Exclusive of Dental Care

AVERAGE ANNUAL GROWTH RATE:

1977 - 1983: 11.7%
1984 - 1987: 1.0%

AVERAGE ANNUAL INCREASE IN NUMBER OF CONSULTATIONS PROVIDED:

1977 - 1983: 478,400
1984 - 1987: 54,660

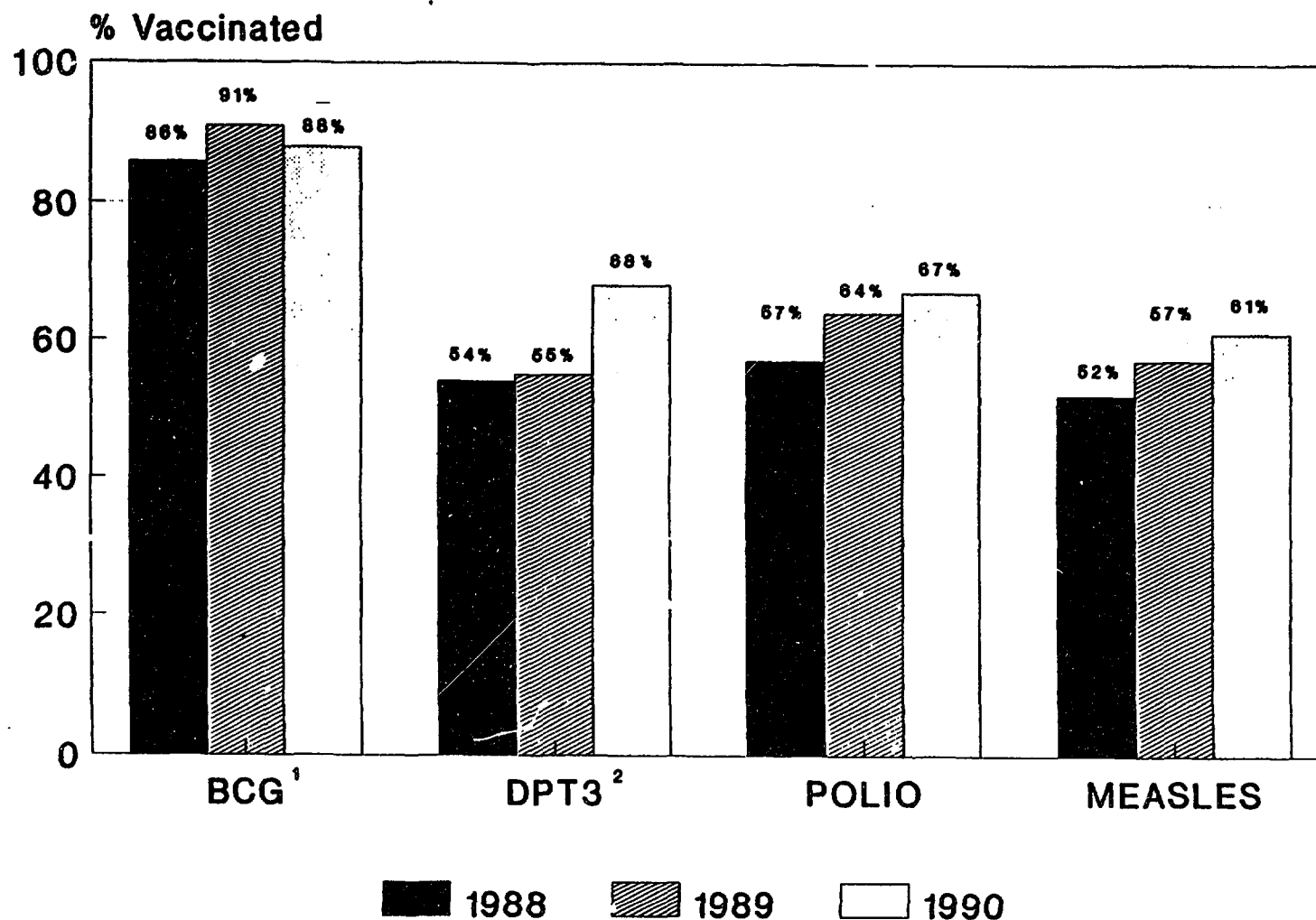
Annex 3, Table 9: ECUADOR - CONSULTATIONS AT MOH FACILITIES BY TYPE OF CONSULTATION 1973-1987

YEAR	DETECTION OF CANCER	PRENATAL	POST- PARTUM	FAMILY PLANNING	PREVENTIVE CARE OF:			CURATIVE CARE	HEALTH CERTIFICATES AND ALL OTHERS	GRAND TOTAL
					INFANTS	PRE-SCHOOL	SCHOOL- AGED			
1973		83,904 (7%)	15,083 (1%)	62,987 (5%)	88,207 (7%)	106,771 (8%)	80,842 (6%)	739,934 (57%)	122,283 (9%)	1,300,011 (100%)
1974		77,987 (5%)	9,236 (1%)	83,244 (5%)	73,604 (4%)	68,800 (4%)	92,602 (5%)	1,174,98 (69%)	128,162 (8%)	1,708,615 (100%)
1975	523 (0%)	106,820 (5%)	13,837 (1%)	97,812 (5%)	86,663 (4%)	74,248 (4%)	106,625 (5%)	1,415,92 (68%)	178,946 (9%)	2,081,393 (100%)
1976	6,628 (0%)	206,979 (7%)	36,082 (1%)	114,697 (4%)	143,873 (5%)	152,615 (5%)	161,714 (5%)	1,893,51 (64%)	256,106 (9%)	2,972,206 (100%)
1977	13,650 (1%)	226,210 (7%)	42,330 (1%)	108,154 (4%)	141,092 (5%)	166,002 (6%)	148,566 (5%)	1,939,78 (64%)	239,274 (8%)	3,026,252 (100%)
1978	22,117 (1%)	227,515 (7%)	31,392 (1%)	110,187 (3%)	135,091 (4%)	132,813 (4%)	179,596 (5%)	2,286,88 (67%)	225,674 (7%)	3,401,274 (100%)
1979	37,400 (1%)	258,935 (7%)	39,620 (1%)	148,353 (4%)	174,534 (4%)	167,816 (4%)	255,098 (7%)	2,660,39 (67%)	212,727 (5%)	3,954,875 (100%)
1980	36,677 (1%)	285,858 (7%)	44,739 (1%)	162,274 (4%)	162,288 (4%)	129,931 (3%)	220,846 (5%)	2,970,92 (69%)	267,303 (6%)	4,280,836 (100%)
1981	34,924 (1%)	307,017 (7%)	44,454 (1%)	172,062 (4%)	203,984 (4%)	187,720 (4%)	190,203 (4%)	3,220,05 (69%)	338,282 (8%)	4,699,298 (100%)
1982	43,848 (1%)	339,871 (7%)	52,200 (1%)	211,105 (4%)	240,154 (5%)	232,204 (4%)	250,421 (5%)	3,503,14 (67%)	373,092 (7%)	5,246,043 (100%)
1983	46,741 (1%)	347,155 (6%)	54,628 (1%)	228,323 (4%)	257,023 (4%)	268,520 (4%)	243,928 (4%)	4,092,88 (69%)	356,594 (6%)	5,895,792 (100%)
1984	44,171 (1%)	366,740 (7%)	57,544 (1%)	211,418 (4%)	248,397 (4%)	239,499 (4%)	254,268 (5%)	3,804,94 (68%)	369,853 (7%)	5,596,839 (100%)
1985	46,690 (1%)	377,530 (6%)	56,350 (1%)	213,400 (4%)	268,939 (5%)	237,430 (4%)	255,143 (4%)	4,018,39 (68%)	457,022 (8%)	5,930,900 (100%)
1986	43,941 (1%)	374,374 (6%)	60,138 (1%)	184,193 (3%)	279,478 (5%)	259,253 (4%)	256,799 (4%)	4,137,33 (69%)	445,257 (7%)	6,040,772 (100%)
1987	64,748 (1%)	370,976 (6%)	64,629 (1%)	163,126 (3%)	322,857 (5%)	315,396 (5%)	294,395 (5%)	4,146,03 (68%)	372,268 (6%)	6,114,430 (100%)

Excludes dental visits.

Source: Ecuadorean Ministry of Health

Annex 3, Table 10: ECUADOR - VACCINATION COVERAGE, CHILDREN UNDER ONE YEAR OF AGE



¹ Tuberculosis ² Diphtheria, Pertussis, Tetanus

Source: Ministry of Health

Annex 3, Table 11: ECUADOR - HEALTH PROFESSIONALS' ATTENDANCE AT REGISTERED LIVE BIRTHS

YEAR	NUMBER OF REGISTERED LIVE BIRTHS	NUMBER BIRTHS W/ HEALTH PROF.	% BIRTHS W/ HEALTH PROF.	NUMBER BIRTHS W/ MOH PROVIDER	% ALL BIRTHS W/ MOH PROVIDER	% ATTENDED BIRTHS W/ MOH PROVIDER
1977	223,653	75,789	33.9	27,563	12.3	36.4
1978	230,259	82,784	36.0	55,007	23.9	66.4
1979	232,436	86,652	37.3	71,555	30.8	82.6
1980	223,351	89,021	39.9	71,328	31.9	80.1
1981	223,182	96,770	43.4	77,597	34.8	80.2
1982	216,756	98,517	45.5	83,029	38.3	84.3
1983	206,428	95,289	46.2	84,503	40.9	88.7
1984	206,243	98,259	47.6	85,013	41.2	86.5
1985	209,974	101,408	48.3	90,367	43.0	89.1
1986	205,797	105,167	51.1	90,691	44.1	86.2
1987	204,475	107,931	52.8	90,277	44.2	83.6

NOTE: The increase in the proportion of all births attended from 1977 to 1987 was 55.8%.

The increase in the proportion of births attended by a MOH provider from 1977 to 1987 was 228%.

Source: Ecuadorean Ministry of Health

**THE MINISTRY OF HEALTH'S
HEALTH SECTOR DEVELOPMENT PLAN**

TABLE 4.1

PROVINCES, TOTAL HEALTH SERVICE AREAS IN THE COUNTRY,
AND POPULATION AND AREAS INCLUDED IN
THE HEALTH SECTOR DEVELOPMENT PLAN

PROVINCES	# OF AREAS	AREAS COVERED BY PLAN	TOTAL POPULATION IN AREA	POPULATION COVERED BY PLAN	% OF POP. COVERED BY PLAN
1. ESMERALDAS	8	6	307,190	225,334	73
2. MANABI	23	14	1,026,066	536,828	52
3. GUAYAS	33	20	2,463,423	1,150,369	47
4. LOS RIOS	9	7	530,844	367,763	69
5. EL ORO	9	7	415,073	287,419	69
6. CARCHI	4	2	141,992	63,910	45
7. IMBABURA	6	5	273,261	214,852	79
8. PICHINCHA	25	14	1,734,942	760,586	44
9. COTOPAXI	8	5	283,236	171,435	61
10. TUNGURAHUA	10	5	366,523	189,234	52
11. CHIMBORAZO	9	7	360,600	270,925	75
12. BOLIVAR	6	5	170,593	126,965	74
13. CAÑAR *	6	2	189,102	66,569	35
14. AZUAY	13	10	506,546	299,576	59
15. LOJA	8	7	389,632	257,872	66
16. SUCUMBIOS	3	3	77,450	64,145	83
17. NAPO	4	3	102,623	83,034	81
18. PASTAZA	2	1	40,714	30,986	76
19. MORONA	6	4	95,685	54,672	57
20. ZAMORA	3	3	66,929	55,485	83
TOTAL	195	130	9,542,224	5,277,959	55

* The low percent of coverage in this province is to avoid duplicating services as there are already other projects in this province.

TABLE 4.2

**DISTRIBUTION OF THE POPULATION BY PROVINCE/CANTON,
URBAN/RURAL AREA, AND COVERAGE BY
THE HEALTH SECTOR DEVELOPMENT PLAN**

PROVINCE - CANTON	TOTAL POPULATION			POPULATION COVERED BY THE PLAN			% OF POP. COVERED BY THE PLAN		
	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL
CARCHI	57.322	84.670	141.992	19.178	44.732	63.910	33,5	52,8	45,0
1 TULCAN	36.947	33.367	70.314	14.658	14.058	28.716	39,7	42,1	40,8
2 BOLIVAR	1.935	13.236	15.171	0	6.495	6.495	0,0	49,1	42,8
3 ESPEJO	3.943	9.172	13.115	* 4.520	6.383	10.906	114,6	69,6	83,2
4 HIRA	2.576	11.529	14.105	0	17.793	17.793	0,0	153,3	126,1
5 MONTUFAR	11.921	17.366	29.287	0	0	0	0,0	0,0	0,0
IMBABURA	129.770	143.491	273.261	113	98.374	211.760	87,4	68,6	77,5
1 IBARRA	80.477	36.744	117.221	58.791	31.709	90.500	73,1	86,3	77,2
2 ANTONIO ANTE	14.885	13.526	28.411	0	0	0	0,0	0,0	0,0
3 COTACACHI	6.046	27.225	33.271	7.600	22.624	30.224	125,7	83,1	90,8
4 OTAVALO	21.542	43.609	65.151	* 35.785	23.068	58.853	166,1	52,9	90,3
5 PINAMPIRO	4.950	10.567	15.517	* 11.210	5.700	16.910	226,5	53,9	109,0
6 URCUQUI	1.870	11.820	13.690	0	15.273	15.273	0,0	129,2	111,6
PICHINCHA	1.094.318	460.590	1.734.942	638.117	121.506	759.623	50,1	26,4	43,8
1 QUITO	1.094.318	293.569	1.387.887	529.154	40.754	569.908	48,4	13,9	41,4
2 CAYAMBE	16.946	29.584	46.530	0	0	0	0,0	0,0	0,0
3 MEJIA	8.783	36.669	45.452	* 14.189	21.664	35.853	161,6	59,1	78,9
4 PEDRO MONCAYO	2.662	12.525	15.187	0	0	0	0,0	0,0	0,0

* = Includes what the census calls periferal

£ = The census data is not precise as the indiginous population is not included. This data is from the government autorities in the provinces.

\$ = This is an estimate. There is a temporal and migrant population. For the plan the highest estimate was used.

NOTE: Of a total of 166 cantons, there was not offical, reliable data for 15, approximately 9%,

PROVINCE - CANTON	TOTAL POPULATION			POPULATION COVERED BY THE PLAN			% OF POP. COVERED BY THE PLAN		
	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL
5 RUMIRAHUI	37.595	11.221	48.816	0	0	0	0,0	0,0	0,0
6 STO DOMINGO	114.048	77.022	191.070	94.774	59.088	153.862	83,1	76,7	80,5
COTOPAXI	66.274	216.962	283.236	73.037	98.400	171.437	110,2	45,4	60,5
1 LATACUNGA	39660	89287	128947	29051	51876	80927	73,3	58,1	62,8
2 LA MANA	7.616	12.968	20.564	9.661	10.136	19.797	126,9	78,3	96,3
3 PANGUA	2.337	14.992	17.329	* 6.072	16.997	23.049	259,8	113,2	133,0
4 PUJILI	5.289	49.612	54.901	* 15.109	17.002	32.111	285,7	34,3	58,5
5 SALCEDO	7.594	38.350	45.944	0	0	0	0,0	0,0	0,0
6 SAQUISILIL	3.778	11.773	15.551	E 13.144	2.409	15.553	E	E	E
TUNGURAGUA	151.931	214.592	366.523	67.742	120.572	188.314	44,6	56,2	51,4
1 AMBATO	124.518	104.668	229.186	49.823	73.430	123.253	40,0	70,2	53,8
2 BAÑOS	9.550	5.914	15.464	0	0	0	0,0	0,0	0,0
3 CEVALLOS	1.740	4.207	5.947	0	0	0	0,0	0,0	0,0
4 MOCHA	958	5.398	6.356	0	8.149	8.149	0,0	151,0	128,2
5 PATATE	1.584	8.708	10.292	0	0	0	0,0	0,0	0,0
6 QUERO	1.655	14.012	15.667	E 7.508	6.925	14.443	E	E	E
7 PELILEO	5.937	35.208	41.145	* 10.411	23.446	33.857	175,4	65,6	82,3
8 PILLARO	5.182	28.208	33.390	0	0	0	0,0	0,0	0,0
9 TISALEO	807	8.269	9.076	0	8.622	8.622	0,0	104,3	95,0
BOLIVAR	32.852	137.741	170.593	39.377	87.587	126.964	119,9	63,6	74,4
1 GUARANDA	15.909	61.452	77.361	11.719	34.964	46.683	73,7	56,9	60,3
2 CHILLANES	2.007	18.403	20.410	* 5.667	11.682	17.349	282,4	63,5	85,0
3 CHIMBO	3.557	22.575	26.132	E 13.269	8.944	22.213	E	E	E
4 ECHEANDIA	3.479	5.577	9.056	2.957	5.776	8.733	85,0	103,6	96,4
5 SAN MIGUEL	4.940	22.887	27.827	5.765	17.885	23.650	116,7	78,1	85,0
6 CALLUMA	2.960	6.847	9.807	0	8.336	8.336	0,0	121,7	85,0
CHIMBORAZO	177.823	242.777	420.600	92.510	178.415	270.925	52,0	73,5	64,4
1 RIOBAMBA	92.664	67.769	160.433	38.664	49.110	87.774	41,7	72,5	54,7
2 ALAUSI	5.432	40.745	46.177	* 8.309	27.126	35.435	153,0	66,6	76,7

PROVINCE - CANTON	TOTAL POPULATION			POPULATION COVERED BY THE PLAN			% OF POP. COVERED BY THE PLAN		
	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL
3 COLTA	2.098	45.915	48.013	£ 12.703	40.175	52.878	£	£	£
4 CHAMBO	3.126	6.559	9.685	0	10.685	10.685	0,0	162,9	110,3
5 CHUNCHI	3.317	10.057	13.374	3.317	10.057	13.374	100,0	100,0	100,0
6 GUAMOTE	1.952	28.474	30.426	£ 14.669	15.757	30.426	£	£	£
7 GUANO	66.560	30.247	96.807	14.848	21.952	36.800	22,3	72,6	38,0
8 PALLATANTA	2.211	7.176	9.387	0	0	0	0,0	0,0	0,0
9 PENIPE	463	5.835	6.298	0	3.553	3.553	0,0	60,9	56,4
CAÑAR	55.541	133.561	189.102	14.777	51.791	66.568	26,6	38,8	35,2
1 AZOGUES	21.095	47.462	68.557	0	0	0	0,0	0,0	0,0
2 BIBLIAN	3.621	18.683	22.304	0	0	0	0,0	0,0	0,0
3 CANAR	11.117	54.524	65.641	* 14.777	51.791	66.568	132,9	95,0	101,4
4 LA TRONCAL	19.708	12.892	32.600	0	0	0	0,0	0,0	0,0
AZUAY	219.407	287.139	506.546	131.329	169.230	300.559	59,9	58,9	59,3
1 CUENCA	195.738	136.379	332.117	58.748	69.255	128.003	30,0	50,0	38,5
2 GIRON	2.867	10.336	13.203	£ 10.197	3.006	13.203	£	£	£
3 GUALACEO	8.533	36.817	45.350	12.544	26.523	39.067	147,0	72,0	86,1
4 NABON	975	16.721	17.696	* 6.727	12.551	19.278	689,9	75,1	108,9
5 PAUTE	3.172	32.018	35.190	3.561	29.897	33.458	112,3	93,4	95,1
6 PUCARA	810	15.788	16.598	\$ 19.057	2.351	21.408	\$	\$	\$
7 SAN FERNANDO	1.376	2.933	4.309	* 4.309	0	4.309	313,2	0,0	100,0
8 SANTA ISABEL	2.926	14.115	17.041	3.079	13.712	16.791	105,2	97,1	98,5
9 SIG SIG	3.010	22.032	25.042	* 13.107	11.935	25.042	435,4	54,2	100,0
LOJA	156.348	233.292	389.632	102.725	144.290	247.015	65,7	61,7	63,4
1 LOJA	96.220	49.061	145.281	47.199	9.837	57.036	49,1	20,1	39,3
2 CALVAS	13.748	21.370	35.118	0	0	0	0,0	0,0	0,0
3 CATAMAYO	13.093	10.197	23.290	14.066	5.489	19.555	107,4	53,8	84,0
4 CELICA	3.453	10.385	13.838	0	13.281	13.281	0,0	127,9	96,0
5 CHAGUARPANBA	1.045	8.643	9.688	0	7.379	7.379	0,0	85,4	76,2
6 ESPINDOLA	1.361	16.374	17.735	* 4.878	11.970	16.848	358,4	73,1	95,0

PROVINCE - CANTON	TOTAL POPULATION			POPULATION COVERED BY THE PLAN			% OF POP. COVERED BY THE PLAN		
	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL
7 GUANZANAMA	1.678	15.685	17.363	0	12.303	12.303	0,0	78,4	70,9
8 MACARA	10.347	6.972	17.319	* 12.024	5.204	17.228	116,2	74,6	99,5
9 PALTAS	5.110	29.062	34.172	* 12.144	20.834	32.978	237,7	71,7	96,5
10 PUYANGO	3.067	13.407	16.474	7.343	8.154	15.497	239,4	60,8	94,1
11 SARAGURO	2.840	24.104	26.944	5.071	23.087	28.158	178,6	95,8	104,5
12 SOZORANGA	970	8.733	9.703	0	8.769	8.769	0,0	100,4	90,4
13 ZAPOTILLO	1.447	8.729	10.176	0	10.814	10.814	0,0	123,9	106,3
14 PINDAL	1.147	6.240	7.387	0	7.169	7.169	0,0	114,9	97,0
15 QUILANGA	814	4.330	5.144	0	0	0	0,0	0,0	0,0
ESMERALDAS	131.379	172.811	307.190	112.596	106.880	219.476	83,8	61,8	71,4
1 ESMERALDAS	98.065	74.584	172.649	77.760	35.676	113.436	79,3	47,8	65,7
2 ELOY ALFARO	4.340	23.169	27.509	* 7.783	15.703	23.486	179,3	67,8	85,4
3 MUISNE	4.702	17.852	22.554	5.764	12.882	18.646	122,6	72,2	82,7
4 QUIJINDE	16.074	46.532	62.606	11.573	31.281	42.854	72,0	67,2	68,5
5 SAN LORENZO	11.198	10.674	21.872	9.716	11.338	21.054	86,8	106,2	96,3
MANABI	431.610	594.456	1.026.066	247.541	255.356	502.897	57,4	43,0	49,0
1 PORTOVIEJO	134.180	67.389	201.569	83.064	60.398	143.462	61,9	89,6	71,2
2 BOLIVAR	12.069	25.301	37.370	* 26.818	6.815	33.633	222,2	26,9	90,0
3 CHONE	40.958	73.321	114.279	0	8.816	8.816	0,0	12,0	7,7
4 EL CARMEN	22.626	31.816	54.442	0	0	0	0,0	0,0	0,0
5 FLAVIO ALFARO	3.595	20.289	23.884	0	0	0	0,0	0,0	0,0
6 JIJIPAPA	32.230	48.239	80.469	0	9	0	0,0	0,0	0,0
7 JUNIN	3.765	14.110	17.875	0	16.086	86.545	0,0	114,0	484,2
8 MANTA	122.426	7.163	129.589	70.459	8.273	78.732	57,6	115,5	60,8
9 MONTECRISTI	11.267	26.663	37.930	0	0	0	0,0	0,0	0,0
10 PAJAN	5.394	36.439	41.833	10.950	27.764	38.714	203,0	76,2	92,5
11 PICHINCHA	3.303	25.917	29.220	4.869	21.187	26.056	147,4	81,7	89,2
12 ROCAFUERTE	6.911	19.606	26.517	8.040	0	8.040	116,3	0,0	30,3
13 SANTA ANA	6.417	52.960	59.377	13.338	40.101	53.439	207,9	75,7	90,0

PROVINCE - CANTON	TOTAL POPULATION			POPULATION COVERED BY THE PLAN			% OF POP. COVERED BY PLAN		
	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL
14 SUCRE	15.131	90.983	106.114	10.949	41.886	52.835	72,4	46,0	49,8
15 TOSAGUA	6.945	25.132	32.077	* 19.054	9.815	28.869	274,4	39,1	90,0
16 24 DE MAYO	4.393	29.128	33.521	0	14.215	14.215	0,0	48,8	42,4
LOS RIOS	201.999	328.845	530.844	185.063	182.700	367.763	91,6	55,6	69,3
1 BABANDYO	50.249	56.077	106.326	50.908	41.713	92.621	101,3	74,4	87,1
2 BABA	2.135	27.214	29.349	* 11.239	15.175	26.414	526,4	55,8	90,0
3 MONTALVO	7.073	11.784	18.857	0	18.150	18.150	0,0	154,0	96,3
4 PUEBLOVIEJO	4.830	17.537	22.367	0	20.131	20.131	0,0	114,8	90,0
5 QUEVEDO	87.789	111.017	198.806	43.216	28.567	71.783	49,2	25,7	36,1
6 URDANETA	4.247	19.156	23.403	* 14.901	6.162	21.063	350,9	32,2	90,0
7 VENTANAS	23.947	36.025	59.972	28.132	24.529	52.661	117,5	68,1	87,8
8 VINCES	18.426	36.091	54.517	* 36.667	12.759	49.426	199,0	35,4	90,7
9 PALENOQUE	3.303	13.944	17.247	0	15.514	15.514	0,0	11,3	90,0
GUAYAS	1.878.750	584.673	2.463.423	1.008.039	152.330	1.160.369	53,7	26,1	47,1
1 GUAYAQUIL	1.475.118	56.111	1.531.229	870.271	25.269	895.540	59,0	45,0	58,5
2 A BAQUERIZO M	3.616	11.134	14.750	0	0	0	0,0	0,0	0,0
3 BALAO	5.105	5.599	10.704	0	0	0	0,0	0,0	0,0
4 BALZAR	21.468	22.820	44.288	24.601	10.663	35.264	114,6	46,7	79,6
5 COLIMES	3.521	16.256	19.777	* 10.537	5.269	15.806	299,3	32,4	79,9
6 DAULE	24.134	69.850	93.984	* 44.779	40.751	85.130	183,9	58,3	90,6
7 DURAN	81.366	2.982	84.348	0	0	0	0,0	0,0	0,0
8 EL EMPALME	22.831	33.172	56.003	25.850	15.858	41.708	113,2	47,8	74,5
9 EL TRIUNFO	16.125	8.769	24.894	0	0	0	0,0	0,0	0,0
10 MILAGRO	93.010	28.459	121.469	0	0	0	0,0	0,0	0,0
11 NARANJAL	14.004	23.888	37.892	0	0	0	0,0	0,0	0,0
12 NARANJITO	15.773	9.800	25.536	0	0	0	0,0	0,0	0,0
13 PALESTINA	5.164	5.784	10.948	0	8.758	8.758	0,0	151,4	80,0
14 PEDRO CARBO	13.931	16.934	30.865	16.945	11.111	28.056	121,6	65,6	90,9
15 SALINAS	19.602	65.330	84.732	0	0	0	0,0	0,0	0,0

PROVINCE - CANTON	TOTAL POPULATION			POPULATION COVERED BY THE PLAN			% OF POP. COVERED BY THE PLAN		
	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL
16 SAMBORONDON	9.117	24.464	33.581	0	0	0	0,0	0,0	0,0
17 SANTA ELENA	17.232	68.313	85.545	0	0	0	0,0	0,0	0,0
18 SANTA LUCIA	5.254	22.105	27.359	6.001	10.999	17.000	114,2	49,8	62,1
19 URBINA JADO	6.928	36.923	43.851	9.455	23.652	33.107	136,5	64,1	75,5
20 YAGUACHI	9.584	54.171	63.755	0	0	0	0,0	0,0	0,0
21 PLAYAS	16.104	1.609	17.913	0	0	0	0,0	0,0	0,0
EL ORO	290.902	124.171	415.073	192.647	94.772	287.419	66,2	76,3	69,2
1 NACHALA	143.892	15.191	159.083	2	18.064	142.297	86,3	118,9	89,4
2 ARENILLAS	11.548	7.297	18.845	* 13.244	4.753	17.997	114,7	65,1	95,5
3 ATAHUALPA	1.347	4.750	6.097	0	8.218	8.218	0,0	173,0	134,8
4 BALSAS	2.117	1.911	4.028	0	4.028	4.028	0,0	210,8	100,0
5 CHILLA	1.157	1.601	2.758	0	0	0	0,0	0,0	0,0
6 EL GUABO	11.014	18.440	29.454	* 14.029	12.480	26.509	127,4	67,7	90,0
7 HUACUILLAS	26.870	440	27.310	19.786	6.241	26.027	73,6	1418,4	95,3
8 MARCABELLI	2.738	2.060	4.798	0	3.497	0	0	169,8	72,9
9 PASAJE	33.024	18.717	51.738	0	0	0	0,0	0,0	0,0
10 PINAS	10.293	11.594	21.887	11.431	13.075	24.506	111,1	112,8	112,0
11 PORTOVELO	5.699	4.562	10.261	0	10.218	10.218	0,0	224,0	99,6
12 SANTA ROSA	33.106	17.861	50.967	0	0	0	0,0	0,0	0,0
13 ZARUMA	7.266	15.688	22.954	* 9.924	9.790	19.714	136,6	62,4	85,9
14 LAS LAJAS	834	4.059	4.893	0	4.408	4.408	0,0	108,6	90,1
SUCUMBIOS	20.328	57.122	77.450	22.822	41.315	64.143	112,3	72,3	82,8
1 LAGO AGRIO	13.089	29.524	42.613	14.407	22.555	36.962	110,1	76,4	86,7
2 GONZALO PIZARRO	782	3.873	4.655	0	4.544	4.544	0,0	117,3	97,6
3 PUTUMAYO	743	4.027	4.770	0	3.957	3.957	0,0	98,3	83,0
4 SHUSHUFINDI	4.724	13.119	17.843	0	3.317	3.317	0,0	25,3	18,6
5 SUCUMBIOS	285	2.158	2.443	E 8.421	6.942	15.363	E	E	E
6 CASCALES	705	4.421	5.126	0	0	0	0,0	0,0	0,0

PROVINCE - CANTON	TOTAL POPULATION			POPULATION COVERED BY THE PLAN			% OF POP. COVERED BY THE PLAN		
	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL
NAPO	23.712	78.911	102.623	30.596	52.437	83.033	129,0	66,5	80,9
1 TENA	7.943	26.974	34.817	6.978	20.297	27.275	87,9	75,5	78,3
2 AGUARICO	387	2.803	3.190	£ 2.022	5.125	7.147	£	£	£
3 ARCHIDONA	2.550	16.899	19.449	4.622	12.137	16.759	181,3	71,8	86,2
4 EL CHACO	1.699	2.906	4.605	0	0	0	0,0	0,0	0,0
5 JOYA DE LOS SACHAS	2.533	13.698	16.231	£ 5.690	6.995	12.685	£	£	£
6 ORELLANA	7.803	11.869	19.672	* 11.284	7.883	19.167	144,6	66,4	97,4
7 QUIJOS	797	3.862	4.659	0	0	0	0,0	0,0	0,0
PASTAZA	14.802	25.968	40.770	12.179	11.604	23.783	82,3	44,7	58,3
1 PASTAZA	14.124	20.689	34.813	12.179	11.604	23.783	86,2	56,1	68,3
2 MERA	678	5.279	5.957	0	0	0	0,0	0,0	0,0
MORONA SANTIAGO	23.557	72.128	95.685	20.545	31.984	52.529	87,2	44,3	54,9
1 MORONA	8.092	29.768	37.860	3.693	8.169	11.862	45,6	27,4	31,3
2 GUALAQUIZA	4.214	8.862	13.076	£ 6.132	11.027	17.159	£	£	£
3 LIMON INDANZA	2.647	10.148	12.795	0	0	0	0,0	0,0	0,0
4 PALORA	2.402	5.188	7.590	0	0	0	0,0	0,0	0,0
5 SANTIAGO	1.591	7.610	9.201	£ 2.691	6.194	8.885	£	£	£
6 SUCUA	4.601	10.552	15.163	£ 8.029	6.594	14.623	£	£	£
ZAMORA CHINCHIPE	16.391	50.378	66.729	17.168	37.469	54.637	105,0	74,4	81,9
1 ZAMORA	8.076	20.576	28.652	7.037	15.854	22.891	87,1	77,1	79,9
2 CHINCHIPE	1.817	10.487	12.304	£ 4.161	6.056	10.217	£	£	£
3 MANGARITZA	1.211	3.262	4.473	0	3.579	3.579	0,0	109,7	80,0
4 YACUMBI	450	2.988	3.438	0	1.583	1.583	0,0	53,0	46,0
5 YANTZABA	4.797	13.065	17.862	£ 5.970	10.397	16.367	£	£	£

PROJECT AREAS		
PROVINCE	AREAS	TYPE
PICHINCHA	1. CHIMBACALLE	M
	2. GUAMANI	M
	3. LA MAGDALENA	M
	4. CHILLOGALLO	M
	5. NOR-ORIENTE	M
	6. STO-DOMINGO SUR	M
GUAYAS	7. GUASMO SUR	M
	8. TRINITARIA	M
	9. GUASMO NORTE	M
	10. SANTIAGO DE GUAYAQUIL	M
	11. EL EMPALME	U-R
	12. BASTION POPULAR	M
CHIMBORAZO	13. GUAMOTE	R
	14. RIOBAMBA SUR-ESTE	U-R
	15. ALAUSI	R
MANABI	16. CUBA LIBRE	U
	17. ANDRES DE VERA	U
	18. PAJAN	R
LOJA	19. LOJA SUR OCCIDENTAL	U-R
	20. SARAGURO	R
	21. CATAMAYO	U-R
AZUAY	22. YANUNCAY	U-R
	23. SANTA ISABEL	R
CARCHI	24. TULCAN 1	U-R
COTOPAXI	25. SAQUISILI	R
	26. EL CORAZON	R
BOLIVAR	27. SIMIATUG	R
	28. SAN MIGUEL	R
TUNGURAHUA	29. AMBATO	U-R
	30. GUERO	R
ESMERALDAS	31. ESMERALDAS NORTE	U-R
	32. ESMERALDAS SUR	U-R
	33. SAN LORENZO	R
EL ORO	34. MACHALA SUR	U-R
LOS RIOS	35. BABAHOYO NOR-ESTE	U-R
	36. BABAHOYO SUR-ESTE	U-R
IMBABURA	37. OTAVALO	U-R
	38. IBARRA SUR	U-R
CAÑAR	39. CAÑAR	R
SUCUMBIOS	40. NUEVA LOJA	R

M - METROPOLITAN
R - RURAL
U - URBAN

METHODOLOGY FOR CLASSIFYING THE POPULATION IN ECUADOR'S CANTONS ACCORDING TO A TAXONOMY OF CRITICAL POVERTY

1. METHODOLOGY FOR CONSOLIDATING THE RESULTS OF STUDIES ON CRITICAL POVERTY

The taxonomy of critical poverty used to identify the poorest regions in the country is based on the results of three national studies. Each of these studies considered different socio-economic criteria and offered different approaches for categorizing poverty levels. In order to standarize the poverty classification, as much as possible, it was necessary to group together several of the poverty categories used in each study. The three studies were:

1.1 "SUAREZ J., ET AL" STUDY

- Bibliographical Reference:

Suárez, J., et al: "La Situación de Salud en el Ecuador," Ministry of Public Health Press, Quito, 1988.

- Standard Categories:

I	=	17 to 20 poverty indicators
II	=	13 to 15 poverty indicators
III	=	9 to 12 poverty indicators
IV	=	5 to 8 poverty indicators
V	=	1 to 4 poverty indicators
VI	=	0 or no poverty indicators

1.2 "C.E.A.S." STUDY

- Bibliographical Reference:

Breilh, J., et al: "Deterioro de la Vida," Corporación Editora Nacional, Quito, 1990.

- Standard Categories:

I	=	60 to 64 poverty indicators
II	=	40 to 48 poverty indicators
III	=	27 to 36 poverty indicators
IV	=	16 to 24 poverty indicators
V	=	6 to 12 poverty indicators
VI	=	2 to 5 poverty indicators

1.3 MALNUTRITION STUDY

- Bibliographical Reference:

Freire, W., et al: "Diagnóstico Alimentario Nutricional y de Salud del Ecuador," CONADE, Quito, 1989.

- Standard Categories (on the basis of malnutrition indicators):

I	=	10 to 8 points
II	=	7 to 5 points
III	=	4 to 1 points
IV	=	0 points or not shown in the study

1.4 SUMMARY CLASSIFICATION OF CRITICAL POVERTY

- Method:

All standard categories in studies (1), (2), and (4) were summed up. The rating from this summation was later converted into a new summary classification.

- Summary classification of poverty:

I	=	4 to 6 points (maximum priority)
II	=	7 to 9 points (high priority)
III	=	10 to 12 points (medium priority)
IV	=	13 to 15 points (low priority)

2. ANALYSIS AND INTERPRETATION OF CRITICAL POVERTY CATEGORIES

2.1 Table 5.1 shows the standard categories used to classify poverty in each of the provinces' cantons (some of which were grouped with neighbor cantons according to the country's regionalization plan designed for the Health Sector Development Plan). In line with the proposed methodology, these categories were summed up to obtain a rating and construct a summary classification of critical poverty (from I to IV) for each canton, or group of cantons in the country.

2.2 Preliminary population data from the last census of November 1990 was available for each canton or group of cantons.

2.3 All the studies on critical poverty that were used to construct the summary classification assumed, for the purpose of poverty classification, that each canton was homogenous. However, this is not necessarily true as each canton shows both extreme poverty and wealth.

Consequently, it was necessary to turn to other studies such as Carlos Larrea's¹ which draw from the Household Survey conducted by INEM ("Instituto Nacional de Empleo" - National Employment Institute) in November 1988. Based on this study, it is possible to conclude that 54.9% of the population lives under some degree of poverty (from indigence with basic needs unmet to poverty with basic needs met). To obtain the population most likely to live in critical poverty, this percentage was converted into a coefficient and applied to the census population of each canton in the country.

- 2.4 The Health Sector Development Plan's target population was established following these studies on critical poverty and according to the needs of different localities of the country, using the information provided by local managers and technicians of the Provincial Health Directorates.

For each canton, the Plan population was compared to the population living in critical poverty. Results show that in most cases (in 79 out of 129 areas), the Plan population was larger, especially, in those cantons showing higher poverty levels (see Table 5.1).

- 2.5 It was very difficult to identify the indigenous population, due to the lack of reliable and comprehensive studies on this subject, and to overt difficulties in defining the ethnic category "indian" or "native."

Thus, it was necessary to infer the number of people comprising the indigenous population of the country from the limited data known to be reliable and from data on the number of students registered in the bilingual-bicultural courses of the national education system. This was done based on a definition of the indigenous category according to cultural factors related with children education, language preservation, and the permanence of customs and cultural values.

In addition, results of a survey conducted by the "Confederación de Nacionalidades Indígenas de la Amazonia Ecuatoriana" (Confederation of the Indigenous Nationalities of the Ecuadorian Amazon - CONAFENIAE) were obtained. Although this survey focused only on provinces in this region of the country, the results correlated well with those of other studies, and the previously stated conclusion was confirmed.

In sum, the most likely indigenous population from each province in the country was obtained, and its percentage was calculated for the Plan's target population. This varied from 0.93% in Carchi to 83.44% in Morona Santiago. The provinces of Manabí, Los Ríos, Guayas, and Oro were discarded because

¹ Larrea, C.: "Necesidades Básicas, Pobreza y Subempleo en el área urbana del Ecuador," Toronto, March 1990, mimeograph.

they do not have any indigenous population, except for a small "shuar" group in the Guayas province. On the average, the indigenous population represents 8.03% of the total population covered by the Plan.

- 2.6 Table 5.2 shows a national summary of the different categories of critical poverty. The first two categories, likely to correspond to levels of indigence, comprise about 14.5% of the country's population, while 40.57% falls into Categories III and IV, which correspond to poverty in a more general sense. Therefore, 55.08% of the population lives in some degree of poverty.

This data is consistent with other studies carried out in the country, especially with the previously cited INEM Household Survey. The 42.98% of population living in non-poverty conditions, including the middle and upper classes, can be considered an acceptable figure.

- 2.7 The Plan's target population was established in each category of poverty. Table 2 shows that coverage extends from a high of 153.16% in category I to 86.4% in category IV.

This variation is explained by the fact that the population covered by the Plan does not correspond exactly to the geo-political limits of each canton or each parish for each health area selected. In practice, a health area in conditions of extreme poverty includes generally parishes or neighboring localities from other cantons which are likely to show similar poverty conditions.

A good example of this is the case of "Area de Saquisilí" (Province of Cotopaxi) classified as category I (extreme poverty). According to the census, the canton Saquisilí has a population of 15,551 persons, of which an estimated 8,829 live in critical poverty conditions. The Health Service Area of Saquisilí covers 62,973 people of which only a few live in the Saquisilí canton, while the majority comes from the cantons of Latacunga and Pulilí.

Plan coverage of poverty categories II through IV oscillates between 108.91% and 86.40%, confirming the hypothesis stated in the previous paragraph. However, it should be noted that the Plan's target population would include, in every case, a small percentage of people living in non-poverty conditions. The most important conclusion is that 97.8 percent of the population living in poverty conditions will be covered by the Health Sector Development Plan.

3. HEALTH-RELATED CHARACTERISTICS OF ECUADOR'S CANTONS

Table 5.3 has been prepared on the basis of data from the 1988 INEM's Household Survey. It provides health-related information in each of the country's cantons.

TABLE 5.1

**CLASSIFICATION OF THE POPULATION
IN ECUADOR'S CANTONS ACCORDING TO POVERTY CRITERIA**

No.	PROVINCES AND CANTONS	POPULATION	CRITICAL POVERTY SCORE	CRITICAL POVERTY CATEGORY	POP. BELOW CRITICAL POVERTY	POP. IN MOH PLAN	% OF POP. BELOW CRITICAL POVERTY IN MOH PLAN	DIF. PLAN POP. AND POP. BELOW CRITICAL POVERTY	INDIG. POP.	% INDIG. POP. IN RELATION TO TOTAL POP.
	CARCHI									
1	Tulcán (Tulcán 1)	70.314	12	III	39.920	28.716	71,93	11.204		
2	Bolívar	15.171	10	III	8.613	---	0,00	8.613		
3-4	Espejo-Mira	29.220	11	III	15.454	35.19%	227,74	19.748		
5	Montúfar	29.287	10	III	16.627	---	0,00	16.627		
	SUBTOTAL	141.992	43	8,60	80.614	63.910	79,28	16.704	594,00	8,93
	IMBABURA									
6	Ibarra	117.221	10	III	66.550	105.761	158,93	39.221		
	*Ibarra Sur					47.811		47.811		
	*Ibarra Norte					57.960		57.960		
07	Antonio Ante	28.411	10	III	16.130	---	0,00	16.130		
8	Cotacachi	33.271	6	I	18.889	33.318	176,39	14.429		
9	Otavaló	65.151	8	II	36.989	58.853	159,11	21.864		

No.	PROVINCES AND CANTONS	POPULATION	CRITICAL POVERTY SCORE	CRITICAL POVERTY CATEGORY	POP. BELOW CRITICAL POVERTY	POP. IN MOH PLAN	% OF POP BELOW CRITICAL POVERTY IN MOH PLAN	DIF. PLAN POP. AND POP. BELOW CRITICAL POVERTY	INDIG. POP.	% INDIG. POP. IN RELATION TO TOTAL POP.
10	Piasepiro	15.517	7	II	8.810	16.910	191,95	8.100		
11	Urcugui	13.690	11	III	7.772	---	0	7.772		
	SUBTOTAL	273.261	52	8,67	155.140	214.852	138,49	59.712	55.202	25,69
	PICHINCHA									
12	Quito	1.387.687	11	III	787.952	570.878	72,45	217.074		
	*Guamaní					57.430		57.430		
	*Chillogeto					56.625		56.625		
	*Epilachina					31.740		31.740		
	*Mor-oriente					50.270		50.270		
	*Managalito					11.571		11.571		
	*Mor-occidente					56.355		56.355		
	*Los Bancos					34.005		34.005		
	*La Magdalena					35.646		35.646		
	*Pambachupa					72.064		72.064		
	*La Tola					82.341		82.341		
	*Chimbecalle					82.831		82.831		
13	Cayambe	46.530	9	II	26.417	---	0,00	26.417		
14	Mejía	45.452	13	IV	25.805	33.357	129,27	7.552		
15	Pedro Moncayo	15.187	9	II	8.622	---	0,00	8.622		
16	Rumiñahui	48.816	15	IV	27.715	---	0,00	27.715		
17	Sto Domingo Colorado	191.070	12	III	108.477	156.351	144,13	47.874		
	*Sto Domingo Sur					88.550		88.550		
	*Sto Domingo Nor					67.801		67.801		
	SUBTOTAL	1.374.942	68	11,33	984.988	760.586	77,22	224.402	22.288	2,93
	COTOPAXI									
18	Latacunga	128.947	9	II	73.208	36.139	49,36	37.069		
19	La Mana	20.564	12	III	11.675	24.342	208,50	12.667		

No.	PROVINCES AND CANTONS	POPULATION	CRITICAL POVERTY SCORE	CRITICAL POVERTY CATEGORY	POP. BELOW CRITICAL POVERTY	POP. IN MOH PLAN	% OF POP. BELOW CRITICAL POVERTY IN MOH PLAN	DIF PLAN POP. AND POP. BELOW CRITICAL POVERTY	INDIG. POP.	% INDIG. POP. IN RELATION TO TOTAL POP.
20	Pangua	17.329	5	I	9.838	3.049	234,28	13.211		
21	Pujilli	54.901	5	I	31.169	24.932	79,99	6.237		
22	Salcedo	45.944	5	I	26.084	---	0,00	26.884		
23	Sequisilí	15.551	5	I	8.829	62.973	713,26	54.144		
	SUBTOTAL	283.236	41	6,83	160.803	171.435	106,61	10.632	17.695	10,32
	TUNGURAHUA									
24	Ambato	28.176	12	III	123.866	116.130	93,75	7.736		
	* Ambato 4				0	58.942		58.942		
	* Ambato 3				0	57.188		57.188		
	* Santa Rosa	11.010			6.251	24.814	296,98	18.563		
25	Baños	15.464	11	III	8.779	---	0,00	8.779		
26	Cevallos	5.947	15	IV	3.376	---	0,00	3.376		
27	Nocha	6.356	15	IV	3.609	---	0,00	3.609		
28	Patate	10.292	8	II	5.843	---	0,00	5.843		
29	Quero	15.667	9	II	8.895	14.433	162,27	5.538		
30	Pelileo	41.145	9	II	23.359	33.857	144,94	10.498		
31	Pillaro	33.390	9	II	18.957	---	0,00	18.957		
32	Tisaleo	9.076			5.153		0,00	5.153		
	SUBTOTAL	366.523	88	11,00	208.088	189.234	90,94	18.854	16.922	8,94
	BOLIVAR									
33	Guaranda	47.375	7	II	26.896	39.827	148,08	12.931		
	* Simiatug	7.447			4.228	20.669	488,87	16.441		
	* Guarajo	22.539			12.796	19.158	149,72	6.362		
34	Chillanes	20.410	5	I	11.587	17.349	149,72	5.762		
35	Chimbo	26.132	8	II	14.836	---	0,00	14.836		
36	Echeandía	9.056	11	III	5.141	15.588	303,19	10.447		
37	San Miguel	27.827	11	III	15.798	54.201	343,08	38.403		

No.	PROVINCES AND CANTONS	POPULATION	CRITICAL POVERTY SCORE	CRITICAL POVERTY CATEGORY	POP. BELOW CRITICAL POVERTY	POP. IN MOH PLAN	% OF POP. BELOW CRITICAL POVERTY (IN MOH PLAN)	DIF. PLAN POP. AND POP. BELOW CRITICAL POVERTY	INDIG. POP.	% INDIG. POP. IN RELATION TO TOTAL POP.
38	Caluma	9.807			5.568	---	0,00	5.568		
	SUBTOTAL	170.593	42	8,40	96.852	126.965	131,09	30.113	19.061	15,01
	CHIMBORAZO									
39	Riobamba	160.433	10	111	91.083	106.096	116,48	15.813		
	*Riobamba Sur-E				0	72.537		72.537		
	* Riobamba Norte				0	33.559		33.559		
40	Alausi	46.177	6	I	26.216	35.435	135,16	9.219		
41	Colta	48.013	6	I	27.259	52.878	193,99	25.619		
42	Chambo	9.685			5.499	---	0,00	5.499		
43	Chunchi	13.374	7	11	7.593	13.374	176,14	5.781		
44	Guamote	30.426	5	I	17.274	30.426	176,14	13.152		
45	Guano	36.807	7	11	20.897	32.716	156,56	11.819		
46	Paltatunga	9.387	8	11	5.329	---	0,00	5.329		
47	Penipe	6.298	11	111	3.576	---	0,00	3.576		
	SUBTOTAL	360.600	58	7,25	204.725	270.925	132,34	66.200	120.311	44,41
	CAÑAS									
48	Azogues	68.557	7	11	38.922	---	0,00	38.922		
49	Biblian	22.304	9	11	12.663	---	0,00	12.663		
50	Cañar	60.918	8	11	34.585	42.516	122,93	7.931		
	* Suscal	4.723			2.681	24.053	897,03	21.372		
51	La Troncal	32.600	12	111	18.508	---	0,00	18.508		
	SUBTOTAL	189.102	36	9,00	107.360	66.569	62,01	40.791	11.029	16,57
	AZUAY									
52	Cuenca	332.117	12	111	188.555	131.070	69,51	57		
	* Yanuncay				0	48.935		48.935		
	* Machángara				0	46.974		46.974		
	* Bellavista				0	35.161		35.161		

No.	PROVINCES AND CANTONS	POPULATION	CRITICAL POVERTY SCORE	CRITICAL POVERTY CATEGORY	POP. BELOW CRITICAL POVERTY	POP. IN MOH PLAN	% OF POP. BELOW CRITICAL POVERTY IN MOH PLAN	DIF. PLAN POP. AND POP. BELOW CRITICAL POVERTY	INDIG. POP.	% INDIG. POP. IN RELATION TO TOTAL POP.
53-54	Girón-S. Fer.	17.512	5	I	9.942	17.512	176,14	7.570		
55	Gualaquío	45.350	7	II	25.747	34.990	135,90	9.243		
56	Nabón	17.696			10.047	19.279	191,89	9.232		
57	Paute	35.190	7	II	19.979	33.478	167,57	13.499		
58	Pucará				0			0		
	*Ponce Enríquez	6.060			3.440	14.211	413,05	10.771		
59	S. Isabel-Puc.	27.579	7	II	15.658	23.994	153,24	8.336		
60	Sigsig	25.042	6	I	14.217	25.042	176,14	10.825		
	SUBTOTAL	506.546	44	6,29	287.584	299.576	104,17	11.992	13.398	4,47
	LOJA									
61	Loja (Sur-Occ)	145.281	12	III	82.481	55.411	67,18	27.070		
62	Calvas	35.118	12	III	19.938	---	0,00	19.938		
63	Catamayo	23.290	15	IV	13.223	56.349	426,16	43.126		
64-65	Celica-Pindal		9	II	0			0		
66	Puyango	37.699			21.403	43.911	205,16	22.508		
67	Chaguarpamba	9.608	10	III	5.500	---	0,00	5.500		
68	Espíndola	17.735	5	I	10.069	16.848	167,33	6.779		
69	Gonzanena	17.363	5	I	9.858	---	0,00	9.558		
70-71	Macará-Soz.	27.022	11	III	15.341	28.847	188,03	13.506		
72	Paltas	34.172	6	I	19.401	28.348	146,12	8.947		
73	Saraguro	26.944	5	I	15.297	28.158	184,07	12.861		
74	Zapotillo	10.176	8	II	5.777	---	0,00	5.777		
75	Quilanga	5.144			2.920	---	0,00	2.920		
	SUBTOTAL	389.632	98	7,54	221.208	257.872	116,57	36.664	12.144	4,71
	ESMERALDAS									
76	Esmeraldas	172.649	12	III	98.019	115.202	117,53	17.183		
	*Esmeralda Nor.				0	71.596		71.596		

No.	PROVINCES AND CANTONS	POPULATION	CRITICAL POVERTY SCORE	CRITICAL POVERTY CATEGORY	POP. BELOW CRITICAL POVERTY	POP. IN MOH PLAN	% OF POP. BELOW CRITICAL POVERTY IN MOH PLAN	DIF. PLAN POP. AND POP. BELOW CRITICAL POVERTY	INDIG. POP.	% INDIG. POP. IN RELATION TO TOTAL POP.
	* Esmeraldas Sur				0	43.606		43.606		
77	Eloy Alfaro	23.233	9	II	13.190	---	0,00	13.190		
	* Borbón	4.276			2.428	26.134	1076,52	23.706		
78	Muisne	22.554	7	II	12.805	16.881	131,83	4.076		
79	Guinindé	62.606	7	II	35.544	48.711	137,05	13.167		
80	San Lorenzo	21.872	9	II	12.418	18.406	148,23	5.988		
	SUBTOTAL	307.190	44	8,80	174.403	225.334	129,20	50.931	9.629	4,27
	MANABI									
81	Portoviejo	201.569	13	IV	114.438	134.854	117,84	20.416		
	* Andrés de Vera				0	62.950		62.950		
	* San Pablo				0	31.496		31.496		
	* Calderón				0	40.408		40.408		
82	Bolívar	37.370	9	II	21.216	58.535	275,90	37.319		
83	Chone	114.279	9	II	64.880	---	0,00	64.880		
84	El Carmen	54.442	12	III	30.909	---	0,00	30.909		
85	Flavio Alfaro	23.884			13.560	---	0,00	13.560		
86	Jijjapa	80.469	9	II	45.685	---	0,00	45.685		
87	Junín	17.875	10	III	10.148	---	0,00	10.148		
88	Nanta	129.589	14	IV	73.572	75.732	102,94	2.160		
	* Cuba Libre				0	24.493		24.493		
	* Jocay				0	23.729		23.729		
	* San José				0	27.510		27.510		
89	Montecristi	37.930		III	21.534	---	0,00	21.534		
90	Paján	41.833	7	II	23.750	33.466	140,91	9.716		
91	Pichincha	29.220	11	II	16.589	26.056	157,07	9.467		
92	Rocafuerte	26.517	8	II	15.055	42.548	282,62	27.493		
93	Santa Ana	59.377	9	II	33.710	72.902	216,26	39.192		

No.	PROVINCES AND CANTONS	POPULATION	CRITICAL POVERTY SCORE	CRITICAL POVERTY CATEGORY	POP. BELOW CRITICAL POVERTY	POP. IN MOH PLAN	% OF POP. BELOW CRITICAL POVERTY IN MOH PLAN	DIF. PLAN POP. AND POP. BELOW CRITICAL POVERTY	INDIG. POP.	% INDIG. POP. IN RELATION TO TOTAL POP.
94	Sucre	93.948	9	II	53.338	---	0,00	53.338		
	* Pedernales	12.166			6.907	26.935	389,96	20.028		
95	Tosagua	32.077	12	III	18.211	28.869	158,52	10.658		
96	24 de Mayo	33.521	8	II	19.031	---	0,00	19.031		
	SUBTOTAL	1.026.066	140	9,33	582.534	499.897	85,81	82.637		0,00
	LOS RIOS									
97	Babahoyo	106.326	13	IV	60.365	110.761	183,50	50.406		
	*Bahahoyo Nor-E				0	60.613		60.613		
	*Bahahoyo Sur-E				0	50.158		50.158		
98	Baba	29.349	7	II	16.662	26.414	158,52	9.752		
99	Montalvo	18.857	11	III	10.706	---	0,00	10.736		
100	Pueblo Viejo	22.367	8	II	12.699	---	0,00	12.699		
101	Quevedo	198.806	14	IV	112.869	71.703	63,60	41.086		
102	Urdaneta	23.403	11	III	13.287	41.194	310,04	27.907		
103	Ventanas	59.972	10	III	34.048	52.661	154,67	18.613		
104	Vinces	54.517	8	II	30.951	64.940	209,81	33.989		
105	Palenque	17.247			9.792	---	0,00	9.792		
	SUBTOTAL	530.844	82	10,25	301.379	367.763	122,03	66.384		0,00
	GUAYAS									
106	Guayaquil	1.531.229	12	III	869.333	894.348	102,88	25.015		
	*Bastión Popular				0	72.404		72.404		
	* Juan Montalvo				0	37.299		37.299		
	*Mapasigüe Oeste				0	69.230		69.230		
	* Rodrigo Borja				0	34.843		34.843		
	* Centro Norte				0	53.498		53.498		
	* Cristo d'Consuelo				0	85.662		85.662		
	* Febres Cordero				0	78.110		78.110		

No.	PROVINCES AND CANTONS	POPULATION	CRITICAL POVERTY SCORE	CRITICAL POVERTY CATEGORY	POP. BELOW CRITICAL POVERTY	POP. IN MOH PLAN	% OF POP. BELOW CRITICAL POVERTY IN PLAN	DIF. PLAN POP. AND POP. BELOW C. POVERTY	INDIG. POP.	% INDIG. POP. IN RELATION TO TOTAL POP.
	*Mariana Jesús				0	50.343		50.343		
	* El Cisne 2				0	61.340		61.340		
	* St Guayaquil				0	65.141		65.141		
	* Trinitaria				0	55.475		55.475		
	* Guasmo Norte				0	69.138		69.138		
	* Guasmo Sur				0	92.732		92.732		
	* Guasmo Oeste				0	69.133		69.133		
107	A. Baquerizo M	14.750			8.374	---	0,00	8.374		
108	Balao	10.704			6.077	---	0,00	6.077		
109	Balzar	44.288	8	II	25.144	51.070	203,11	25.926		
110	Colinas	19.777			11.228	---	0,00	11.228		
111	Daule	93.984	8	II	53.358	57.929	108,57	4.571		
112	Durán	84.348	15	IV	47.887	---	0,00	47.887		
113	El Empalme	56.003	11	III	31.795	41.708	131,18	9.913		
114	El Triunfo	24.894	13	IV	14.133	---	0,00	14.133		
115	Milagro	121.469	13	IV	68.962	---	0,00	68.962		
116	Naranjal	37.892	12	III	21.513	---	0,00	21.513		
117	Naranjito	25.536	10	III	14.498	---	0,00	14.498		
118	Palestina	10.948			6.216	---	0,00	6.216		
119	Pedro Carbo	30.865	7	II	17.523	48.948	279,33	31.425		
120	Salinas	84.732	12	III	48.105	---	0,00	48.105		
121	Samborondón	33.581	9	II	19.065	---	0,00	19.065		
122	Santa Elena	85.545	10	III	48.567	---	0,00	48.567		
123	Santa Lucía	27.359			15.533	23.259	149,74	7.726		
124	Urbina Jado	43.851	8	II	24.896	33.107	132,98	8.211		
125	Yaguachi	63.755	13	IV	36.196	---	0,00	36.196		
126	Playas	17.913			10.170	---	0,00	10.170		
	SUBTOTAL	2.463.423	ERR	ERR	1.398.572	1.150.369	82,25	248.203	96	0,01

No.	PROVINCES AND CANTONS	POPULATION	CRITICAL POVERTY SCORE	CRITICAL POVERTY CATEGORY	POP. BELOW CRITICAL POVERTY	POP. IN MOH PLAN	% OF POP. BELOW CRITICAL POVERTY IN PLAN	DIF. PLAN POP. AND POP. BELOW C. POVERTY	INDIG. POP.	% INDIG. POP. IN RELATION TO TOTAL POP.
	EL ORO									
127	Machala	159.083	14	IV	90.317	142.297	157,55	51.980		
	* Machala Norte				0	75.369		75.369		
	* Machala Sur				0	66.928		66.928		
128	Arenillas	18.845	12	III	10.699	22.405	209,41	11.706		
129	Atahualpa	6.007	12	III	3.461	---	0,00	3.461		
130	Balsas	4.028			2.287	---	0,00	2.287		
131	Chilla	2.758			1.566	---	0,00	1.566		
132	El Guabo	29.454	13	IV	16.722	26.509	158,53	9.787		
133	Huaquillas	27.310	14	IV	15.505	26.027	167,86	10.522		
134	Marcabelli	4.798	15	IV	2.724	---	0,00	2.724		
135	Pasaje	51.738	13	IV	29.373	---	0,00	29.373		
136	Piñas	21.887	12	III	12.426	35.936	289,20	23.510		
137	Portovelo	10.261	14	IV	5.826	---	0,00	5.826		
138	Santa Rosa	50.967	13	IV	28.936	---	0,00	28.936		
139	Zaruma	22.954	12	III	13.032	34.245	262,78	21.213		
140	Las Lojas	4.893			2.778	---	0,00	2.778		
	SUBTOTAL	415.073	144	13,09	235.652	287.419	121,97	51.767		0,00
	NAPO									
141	Tena	34.817	9	II	19.767	40.017	202,45	20.250		
142	Aguarico	3.190	8	II	1.811	7.147	394,63	5.336		
143	Archidona	19.449	8	II	11.042	---	0,00	11.042		
144	El Chaco	4.605			2.614	---	0,00	2.614		
145	Joya Sachas	16.231			9.215	---	0,00	9.215		
146	Orellana	19.672	8	II	11.168	35.870	321,17	24.702		
147	Quijos	4.659	8	II	2.645	---	0,00	2.645		
	SUBTOTAL	102.623	41	8,20	58.263	83.034	142,52	24.771	41.837	50,39

No.	PROVINCES AND CANTONS	POPULATION	CRITICAL POVERTY SCORE	CRITICAL POVERTY CATEGORY	POP. BELOW CRITICAL POVERTY	POP. IN MOH PLAN	% OF POP. BELOW CRITICAL POVERTY IN MOH PLAN	DIF. PLAN POP. AND POP. BELOW CRITICAL POVERTY	INDIG. POP.	% INDIG. POP. IN RELATION TO TOTAL POP.
	SUCUMBIOS									
148	Lago Agrio	42.613	10	III	24.193	48.782	201,64	24.589		
	* Nueva Loja	13.089			7.431	25.883	348,31	18.452		
	* L. A. Rural	29.524			16.762	22.899	136,61	6.137		
149	Gonzalo Pizarro	4.655			2.643	---	0,00	2.643		
150	Putumayo	4.770	5	I	2.708	---	0,00	2.708		
151	Shushufindi	17.843	6	I	10.130	15.363	151,66	5.233		
152	Sucumbios	2.443	11	III	1.387	---	0,00	1.387		
153	Cascales	5.126			2.910	---	0,00	2.910		
	SUBTOTAL	77.450	32	8,00	43.971	64.145	145,88	20.174	11.656	18,17
	PASTAZA									
154	Pastaza	34.807	13	IV	19.761	30.986	156,80	11.225		
	*Pastaza Infer.				0	30.986		30.986		
155	Nera	5.907	13	IV	3.354	---	0,00	3.354		
	SUBTOTAL	40.714	26	13,00	23.115	30.986	134,05	7.871	16.155	52,14
	MORONA SAN.									
156	Morona	41.795	8	II	18.052	---	0,00	18.052		
	* Taisha	6.064			3.443	14.898	432,74	11.455		
157	Gualaquiza	13.076	9	II	7.424	16.312	219,73	8.888		
158	Limón Indanza	12.795	12	III	7.264	---	0,00	7.264		
159	Palora	7.590	11	III	4.309	---	0,00	4.309		
160	Santiago	9.201	11	III	5.224	10.475	200,53	5.251		
161	Sucua	15.163	11	III	8.609	12.987	150,86	4.378		
	SUBTOTAL	95.685	62	10,33	54.324	54.672	100,64	368	45620	83,44
	ZAM. CHINCH.									
162	Zamora-Yacumbi	32.090	11	III	18.219	17.790	97,65	429		
164	Chinchipe	12.304	8	II	6.985	10.217	146,26	3.232		

No.	PROVINCES AND CANTONS	POPULATION	CRITICAL POVERTY SCORE	CRITICAL POVERTY CATEGORY	POP. BELOW CRITICAL POVERTY	POP. IN MOH PLAN	% OF POP. BELOW CRITICAL POVERTY IN MOH PLAN	DIF. PLAN POP. AND POP. BELOW CRITICAL POVERTY	INDIG. POP.	% INDIG. POP. IN RELATION TO TOTAL POP.
165/6	Nangaritza-Yantzaz	22.335			12.680	27.478	216,70	14.798		
	SUBTOTAL	66.129			37.884	55.485	146,46	17.601	7247	13,06
	GALAPAGOS									
167	San Cristobal	3.585	14	IV	2.035	---	0,00	2.035		
168	Isabela	859	14	IV	488	---	0,00	488		
169	Santa Cruz	5.305	15	IV	3.012	---	0,00	3.012		
	SUBTOTAL	9.749	43	14,33	5.535	0	0,00	5.535		0,00
	ZONAS NO DELIMITADAS	70.635			40.102		0,00	40.102		0,00
	TOTAL REPUBLICA	9.622.608			5.463.094	5.241.028	95,94	222.066	420885	8,30

(*) Estudio de la Confederación de Nacionalidades Indígenas de la Amazonía Ecuatoriana (CONFENIAE), Septiembre 1990.

TABLE 5.2

**CATEGORIZATION OF THE POPULATION IN ECUADOR'S CANTONS
ACCORDING TO POVERTY LEVELS**

CATEGORIES OF POVERTY	POPULATION UNDER THE POVERTY LEVEL	% OF TOTAL COUNTRY POPULATION	POPULATION COVERED BY MOH PLAN	% OF POPULATION COVERED BY MOH PLAN
I	268,767	2.79	411,631	153.16
II	1,127,122	11.71	1,227,541	108.91
III	3,084,263	32.05	2,836,067	91.95
IV	820,203	8.52	708,665	86.40
SUBTOTAL	5,300,355	55.08	5,183,904	97.80
NOT DEFINED	186,932	1.94	70,016	37.46
NO POVERTY	4,135,321	42.98	0	0.00
TOTAL	9,622,608	100.00	5,253,920	54.60

TABLE 5.3

**HEALTH CHARACTERISTICS
OF ECUADOR'S CANTONS**

PROVINCE AND CANTON	% POP. IN URBAN CENTERS	INFANT MORT. RATE x 1,000	MATERNAL MORT. RATE x 100	% MORT. WOMEN W/O MED. CARE x 10,000	% BIRTHS W/O MED. PROF.	% UNRPT. IMR	% SAFE WATER	% SEWERAGE	% LITERACY	% HUMAN RESOUR. X 10,000
ZAMORA CHINCHIPE										
1 ZAMORA	28,2	28	0	22,5	73		63	19		29,1
2 CHINCHIPE	14,8	35	3	12,9	90		53	35		41,4
3 HANGARITZA	27,1									
4 YACUANI	13,1									
5 YANTAZA	26,9									
CAÑAR										
1 AZOGUES	30,8									
2 BIBLIAN	16,2									
3 CAÑAR	16,9	39	3	13,4	78	39	43	28	30	20,6
4 LA TRONCAL	60,5									
EL ORO										
1 MACHALA	90,5	45	1	33,9	24	0	48	30	6	43,4
2 ARENILLAS	61,3									
3 ATAHUALPA	22,1									
4 BALSAS	52,6									
5 CHILLA	42,0									
6 EL GUABO	37,4	60	2	37,7	49	23	57	14	11	8,5
7 HUAQUILLAS	98,4	89	2	31,9	26	24	0	0	9	4,7
8 MARCABELLI	97,1									
9 PASAJE	63,8									
10 PINAS	47,0	10	1	37,8	40	40	59	43	11	23,5

PROVINCE AND CANTON	% POP. IN URBAN CENTERS	INFANT MORT. RATE X 1,000	MATERNAL MORT. RATE X 100	% MORT. WOMEN W/O MED. CARE X 10,000	% BIRTHS W/O MED. PROF.	% UNRPT. IMR	% SAFE WATER	% SEWERAGE	% LITERACY	% HUMAN RESOUR. X 10,000
11 PORTOBELO	55,5									
12 SANTA ROSA	65,0									
13 ZARUMA	31,7	2	6	48,7	54	82	0	0	13	25,5
14 LAS LOJAS	17,0									
MORONA SANTIAGO										
1 MORONA	21,6	71	3	13,3	76		48	29		25,6
2 GUALAQUIZA	32,2									
3 LINON INDIANZA	20,7									
4 PALORA	31,6									
5 SANTIAGO	17,3	49	4	4,8	60		43	2		58,9
6 SUCUA	30,4	20	0	26,8	60		64	44		24,2
PICHINCHA										
1 QUITO	79,0	52	1	37,3	16	0	66	50	8	51,2
2 CAYAMBE										
3 MEJIA										
4 PEDRO MONCAYO	12,0	103	2	69,1	67	0	78	41	34	12,9
5 RUMINAHUI										
6 STO DOMINGO	61,0	45	2	32,7	65	6	48	35	13	17,8
GUAYAS										
1 GUAYAQUIL	97,0	49	1	37,8	11	4	52	36	13	46,2
2 A. BAQUERIZO M.										
3 BALAO										
4 BALZAR	39,0	83	4	46,3	58	0	9	1	31	6,6
5 COCHINES										
6 DAULE	38,0	55	3	49,7	35	0	22	3	28	8,3
7 DURAN		65	0	35,7	31		57	12		9,7
8 EL EMPALME	35,0	55	1	24,2	64	0	62	21	24	12,5

PROVINCE AND CANTON	% POP. IN URBAN CENTERS	INFANT MORT. RATE X 1,000	MATERNAL MORT. RATE X 100	% MORT. WOMEN W/O MED. CARE X 10,000	% BIRTHS W/O MED. PROF.	% UNRPT. IMR	% SAFE WATER	% SEWERAGE	% LITERACY	% HUMAN RESOUR. X 10,000
9 EL TRIUNFO										
10 MILAGRO										
11 NARANJAL										
12 NARANJITO										
13 PALESTINA										
14 PEDRO CARBO		99	0	53,5	71		0	0		6,1
15 SALINAS										
16 SAMBORONDON	31,0	89	6	48,6	51	0	2	0	22	5,6
17 SANTA ELENA	20,0	45	0	27,2	83	30	59	24	15	16,3
18 SANTA LUCIA										
19 URBINA JADO	14,0	61	4	36,1	51	1	0	0	26	8,7
20 YAGUACHI										
21 PLAYAS										
IMBABURA										
1 IBARRA	50,0	50	2	48,5	42	21	77	6	16	25,5
2 ANTONIO ANTE	50,0	65	1	68,6	49	1	83	37	20	25,4
3 COTACACHI	18,0	82	1	68,6	80	18	59	38	38	13,3
4 OTAVALO	32,0	83	3	57,3	79	20	64	43	44	22,0
5 PIMAMPIRO	31,0	77	0	47,5	86	12	62	28	25	13,6
6 URCUQUI		95	0	31,5	73					15,2
MANABI										
1 PORTOVIEJO	67,0	18	1	26,7	41	43	54	32	14	23,1
2 BOLIVAR	30,0			40,6	44	70	46	22	26	18,5
3 CHONE	35,8									
4 EL CARMEN	41,0									
5 ELOY ALFARO										
6 JIJAJAPA										

PROVINCE AND CANTON	% POP. IN URBAN CENTERS	INFANT MORT. RATE X 1,000	MATERNAL MORT. RATE X 100	% MORT. WOMEN W/O MED. CARE X 10,000	% BIRTHS W/O MED. PROF.	% UNRPT. IMR	% SAFE WATER	% SEWERAGE	% LITERACY	% HUMAN RESOUR. X 10,000
7 JANIN										
8 NANTA	97,0	25	2	34,5	34	14	53	17	14	24,0
9 MONTECRISTI	47,0	41	1	37,0	62	27	46	8	24	7,8
10 PAJAN	14,0			25	88	12	8	2	36	10,0
11 PICHINCHA										
12 ROCAFUERTE	26,1	29	2	30	32	41	49	4	15	12,5
13 SANTA ANA	10,8	14	1	3,1	70	74	54	31	34	7,9
14 SUCRE										
15 TOSAGUA										
16 24 DE MAYO	13,1	35	3	12,7	81	29	0	0	34	6,2
CHIMBORAZO										
1 RIOBAMBA	51,0	62	3	62,7	61	21	71	48	25	31,0
2 ALAUSI	11,0	80	3	42,6	86	35	0	0	53	15,4
3 COLTA	4,0	6,7	3	50,0	98	39	48	31	53	12,8
4 CHAMBO										
5 CHUNCHI	23,0	58	5	11,3	76	45	56	44	36	17,8
6 GUANOTE	9,0	26	2	28,1	94	43	50	37	59	15,2
7 GUANO	15,0	80	3	55,0	86	49	78	27	27	10,5
8 PALLATANGA		42	4	12,8	100		0	0		4,7
9 PENIPE		64	5	76,4	71		0	0		22,2
SUCUMBIOS										
1 LAGO AGRIO	30,7									
2 GONZALO PIZARRO										
3 PUTUMAYO	15,6									
4 SHUSHUFIANDI	26,5	52	3	24,2	73		57	5		5,3
5 SUCUMBIOS	11,6	31	6	26,8	49		51	37		15,1
6 CASCALES										

PROVINCE AND CANTON	% POP. IN URBAN CENTERS	INFANT MORT. RATE X 1,000	MATERNAL MORT. RATE X 100	% MORT. WOMEN W/O MED. CARE X 10,000	% BIRTHS W/O MED. PROF.	% UNRPT. IMR	% SAFE WATER	% SEWERAGE	% LITERACY	% HUMAN RESOUR. X 10,000
BOLIVAR										
1 GUARANDA	20,6	72	3	45,4	82	18	58	47	33	20,8
2 CHILLANES	9,8	38	0	10,5	89	33	44	33	33	16,3
3 CHIMBO	13,6	54	3	45,4	84	26	57	37	18	12,0
4 ECHEANDIA	38,4	38	0	75,2	88		0	0		16,8
5 SAN NIGUEL	17,8	54	1	38,6	72	13	57	43	19	13,5
6 CALUMA	30,2									
CARCHI										
1 TULCAN	52,5	51	4	62,1	25	0	69	53	10	20,5
2 BOLIVAR	12,8									
3 ESPEJO	30,1									
4 MIRA	18,3	36	3	51,6	59	16	68	45	22	13,5
5 MONTUFAR	40,7									
TUNGURAGUA										
1 AMBATO	54,3	58	1	54,3	32	16	57	47	17	24,3
2 BAHOS	61,8									
3 CEBALLOS	29,3									
4 MOCHA	15,1									
5 PATATE	15,4									
6 QUERO	10,6	38	0	50,7	51	0	72	39	25	13,4
7 PELILEO	14,4	50	1	86,4	14	0	0	0	24	10,5
8 PILLARO	15,5									
9 TISALEO	8,9									
LOS RIOS										
1 BABANOYO	47,3	52	1	41,7	27	0	54	27	17	19,6
2 BABA	7,3	57	2	22,7	23	1	48	10	33	10,8
3 MONTALVO	37,9									

PROVINCE AND CANTON	% POP. IN URBAN CENTERS	INFANT MORT. RATE X 1,000	MATERNAL MORT. RATE X 100	% MORT. WOMEN W/O MED. CARE X 10,000	% BIRTHS W/O MED. PROF.	% UNRPT. IMR	% SAFE WATER	% SEWERAGE	% LITERACY	% HUMAN RESOUR. X 10,000
4 PUEBLOVIEJO	21,6									
5 QUEVEDO	44,2	63	6	45,8	62	0	42	18	19	6,6
6 URDANETA	18,1									
7 VENTANAS	39,9									
8 VINCES	33,8	91	2	48,5	52	0	41	26	30	7,0
9 PALENQUE	19,2									
AZUAY										
1 CUENCA	57,0	57	1	41,4	63	1	59	42	14	39,1
2 GIRON	8,0	48	7	17,0	86	53	59	43	27	13,6
3 GUALACEO	16,0	85	2	29,2	84	18	60	32	25	14,9
4 NABON										
5 PAUTE	7,0	46	1	15,0	83	27	59	37	25	14,2
6 PUCARA										
7 SAN FERNANDO		29	7	6,5	96		58	29		2,0
8 SANTA ISABEL	7,0	33	1	13,0	88	45	50	36	23	8,9
9 SIGSIG	14,0	55	0	33,9	79	40	0	0	23	25,3
ESMERALDAS										
1 ESMERALDAS	56,8	76	2	35,6	71	0	46	24	14	24,6
2 ELOY ALFARO	15,8	40	2	9,1	88	77	36	4	33	17,0
3 MUJISNE	20,8	23	2	10,0	92	64	32	15	26	19,1
4 QUININDE	25,7	30	3	40,5	86	26	26	16	23	12,9
5 SAN LORENZO	51,2	90	2	28,1	75	39	37	8	29	20,9
LOJA										
1 LOJA	66,2	45	1	39,6	42	0	75	46	9	48,6
2 CALVAS	39,1	33	3	11,2	69	48	49	34	12	12,8
3 CATAMAYO	56,2	31	2	27,1	68	30	68	29	13	10,8
4 CELICA	25,0	18	4	14,0	92	85	59	36	16	13,9

PROVINCE AND CANTON	% POP. IN URBAN CENTERS	INFANT MORT. RATE X 100	MATERNAL MORT. RATE X 100	% MORT. WOMEN W/O MED. CARE X 10,000	% BIRTHS W/O MED. PROF.	% UNRPT. IMR	% SAFE WATER	% SEWERAGE	% LITERACY	% HUMAN RESOUR. X 10,000
5 CHAGUAPAMBA	10,8	52	0	10,7	87		47	7		8,8
6 ESPINOLA	7,7	24	0	1,9	94	54	65	39	21	13,8
7 GONZANAMA	9,7	42	2	10,0	77	26	59	21	17	10,5
8 MACARA	59,7	38	5	32,5	58	36	61	33	11	22,7
9 PALTAS	15,0	29	0	4,0	80	42	42	31	17	9,6
10 PUYANGO	18,6	20	2	8,3	76	50	62	31	17	16,0
11 SARAGURO	10,5	46	0	14,1	94	44	56	10	31	18,4
12 SOZORANGA	10,0	24	0	0,0	97	22	47	0	15	4,9
13 ZAPOTILLO	14,2	22	0	21,9	0	67	0	0	21	10,9
14 PINDAL										
15 QUILANGA										
COTOPAXI										
1 LATACUNGA	30,8	76	2	60,6	71	14	60	45	27	20,8
2 LA MANA	37,0	75	2	25,5	73		57	39		9,1
3 PANGUA	54,0	2	7,5	81,0	62	58	44	27	15,3	
4 FUJILI	9,6	109	4	28,9	90	16	55	39	45	8,7
5 SALCEDO	16,5	78	1	65,1	79	15	59	23	30	14,3
6 SAQUISILI	24,3	107	2	102,5	89	23	0	0	40	21,9
NAPO										
1 TENA	22,8	27	1	14,0	88		53	1		35,5
2 AGUARICO	12,1									
3 ARCHIDONA	13,1									
4 EL CHACO	36,9									
5 JOYA DE LOS SACHAS	15,6									
6 ORELLANA	39,7	46	1	20,2	92		0	0		13,6
7 QUIJOS	17,1	80	4	18,7	71		64	0		22,1

PROVINCE AND CANTON	% POP. IN URBAN CENTERS	INFANT MORT. RATE X 1,000	MATERNAL MORT. RATE X 100	% MORT. WOMEN W/O MED. CARE X 10,000	% BIRTHS W/O MED. PROF.	% UNRPT. IMR	% SAFE WATER	% SEWERAGE	% LITERACY	% HUMAN RESOUR. X 10,000
PASTAZA										
1 PASTAZA	40,6	34	0	24,0	28		78	56		40,9
2 NERA	11,5	27	0	33,3	72		74	35		180,7

PRIORITY HEALTH CARE INTERVENTIONS

1. **Targeting:** The project will support the provision of basic health services to the country's poorest communities. In the project health service areas, families will be ranked according to their epidemiological profile, and health care interventions will be identified to meet the basic health needs of the most vulnerable population groups, particularly mothers and children. In addition to services provided in response to patient demand at the health service areas' facilities or during home visits, health personnel will take advantage of each encounter to provide other preventive and promotive health care services. For example, if a two-year old child is brought to a health facility suffering from acute diarrhea, the attending staff will check his/her vaccination records and whether the child's growth is monitored regularly. If accompanied by his/her mother, the staff will also check if she regularly controls her blood pressure, has received a tetanus shot, and has been checked for cervical cancer. If any of these services are needed, the staff will take immediate action or make arrangements for intervention in the immediate future.

2. **Priority health problems:** On the basis of the analysis of the country's health statistics, the following problems were identified to be of particular concern:

- *Low coverage of prenatal care, childbirth care, and postpartum care;
- *Modest coverage of women of childbearing age who use some type of contraceptive method, with a high proportion using contraceptives known to be ineffective.
- *High prevalence of acute child malnutrition (low weight-for-age), mostly in children under three years of age.
- *Limited participation in growth monitoring by children under three years of age.
- *Low coverage of children under one year with complete immunization (3 doses of DPT, 3 doses of antipolio vaccine, anti measles vaccine, and BCG vaccine), as well as of childbearing women for tetanus.
- *High child mortality rates caused by acute diarrheal diseases.

- *High child mortality rates caused by acute respiratory infection.
- *High prevalence of parasitic infections in children under five years of age.
- *High mortality rates due to tuberculosis.
- *Increase in the incidence of malaria in recent years.
- *Presence of cholera tending towards endemicity.
- *High mortality rates due to cervical cancer.
- *Lack of a program to prevent and control hypertension, the principal risk factor associated with the largest number of deaths in the country.

3. Interventions: All norms and procedures to control priority health problems in the project areas, as well as those related to the provision of other services, were reviewed and updated during project preparation. The following priority health care interventions will be supported under the project:

Prenatal, childbirth, and postpartum care: Emphasis will be given to detecting pregnancy within the first three months of gestation through home visits and the use of community health workers. The health team will monitor pregnant women, according to epidemiological risk criteria, through: (i) home visits; (ii) visits to health facilities; and (iii) coordination with midwives working at the community level who will receive training on the basic norms of infection prevention and the signs of complications requiring immediate referral to health facilities. The capacity of the health personnel to handle child deliveries in the project's health facilities will be strengthened. Postpartum controls will be provided by health teams preferably during house visits.

Family Planning: Counselling services on family planning will be established in all health subcenters, centers, and first-level hospitals. Married women or sexually active women who do not use any contraceptive method will be identified through house and health facility visits. Education on the subject will be provided either during home visits or counselling sessions at health facilities. Activities will concentrate on women in reproductive ages, particularly on those with multiple deliveries and who gave birth more than once in a two-year period. Some contraceptive methods (condoms, oral contraceptives) will be provided during home visits following the assessment of the situation by a health worker. All contraceptive methods will be provided in the health centers and subcenters.

Breastfeeding, nutrition education, and food supplements: Breastfeeding will be encouraged as the sole food to be provided during the first four to six months of life. Outreach programs (such as mass communication campaigns, community group action, and activities of community volunteers) will be launched to educate mothers on infant feeding and weaning, and on other nutritional needs of the child. Nutritional supplements and micronutrients will be provided to pregnant and lactating women and to children under three years of age who are at risk of malnutrition.

Child growth monitoring: Periodic check-ups, especially growth monitoring for children under 3 years of age and women, will be done routinely as part of the delivery of integrated primary health care services, and through mother clubs or volunteers who will monitor growth for a group of children at the community with the help of a health worker. Mothers will be taught to interpret a growth curve, as well as to make timely decisions accordingly (i.e., to turn to the health team promptly when there is any deviation from the expected growth pattern of the child).

Vaccinations: EPI (Immunization Program) standards will be followed for vaccinations with DPT, BCG, oral antipolio, and antimeasles in children under 5 years of age. Specific emphasis will be given to infants. Tetanus will be offered to women of reproductive age. Children and women of childbearing age not vaccinated during vaccination days will be identified by community health workers during home and health facilities visits. Immunizations will be given in the health centers and subcenters, as well as, during home visits in rural areas.

Prevention and control of acute diarrheal diseases: In selected rural areas, basic sanitation services will be provided. During home visits, with the support of health workers and community groups, families will be trained on adequate hygiene practices. Additionally, oral rehydration units at the community and health facility level will be organized. Health workers will be trained on how to treat a child suffering from acute diarrhea, either at home or at a health center depending on the degree of severity. The promotion of breastfeeding practices will also contribute to a decrease in the number acute diarrheal cases. Frequent home visits to families with children suffering from acute diarrhea and mass communication campaigns on oral rehydration will also contribute to a reduction acute diarrhea.

Prevention and control of cholera: Preventive and curative activities to contain the spread of cholera will be initiated in the project areas, and epidemiological surveillance will be strengthened.

Antiparasitic treatment of children under seven years of age: Every three years coprologic tests will be conducted in a sample of preschool children within each health area to study the prevalence of intestinal parasites. Based on test results,

preschoolers may be treated twice a year. Other family members would receive treatment on request or if parasite infection symptoms are observed.

Prevention and control of acute respiratory infections in children: Deaths from acute respiratory infections in children under 5 years of age will be reduced by educating mothers and other family members to recognize symptoms which require a home visit from a member of the health team or immediate treatment in a health facility. Health personnel will be trained to manage children with acute respiratory infections according to case severity and to treat them either at home or in a health facility.

Prevention and control of hypertension: Early detection will be sought by taking the blood pressure of all persons over 15 years of age, during home and health facilities visits regardless of the reason for which the consultation was made. Outpatient care will be provided in health centers and subcenters. Families with history of hypertension or people with other related epidemiological risk factors will be visited and controlled more frequently than others. Emphasis will be given to changing risk related behavior, such as promoting weight control, exercise, diet, and smoking reduction. In this way, a significant percentage of persons suffering from hypertension will be controlled in the local health facilities.

Early detection and control of cervical cancer: The goal is to control cervical cancer in women between 25 and 50 years of age. During home visits, health personnel will identify women who need cytology examinations. Cytology examinations will be done at all the subcenters, centers and at first-level hospitals. To this end, laboratories in the principal urban centers will be strengthened. Biopsies will be done in the hospitals and the health centers, as well as, in the subcenters, in remote locations. Both physicians and nurses will undergo intensive training on medical technologies with regard to cervical cancer, such as cytotechnology and cytopathology.

Prevention and control of tuberculosis: Prevention and control of tuberculosis will begin with improving the ability of family members and health personnel to actively detect respiratory symptoms of the disease. Families found to have symptoms of tuberculosis or the disease will be visited by a member of the health team. Sputum samples of those who have symptoms will be taken for examination. Cultivation of the samples will be done in the health centers and in first-level hospitals, as well as, in the subcenters in remote areas. The provincial laboratories will have the capacity to do Lowenstein cultivations and classifications. Treatment for the disease will be ambulatory in nature and will be provided to all who require it.

Malaria control: To increase the effectiveness of malaria-related activities, the integration of these activities with routine activities in health facilities located in malaria-prone regions will be supported.

ORGANIZATION AND TYPE OF LOCAL HEALTH SERVICE AREAS

DEFINITION OF A HEALTH SERVICE AREA

1. Health service areas (HSA) are well-defined geographic regions within which health care delivery facilities of different levels of complexity would interact with one another both functionally and administratively for the provision of ambulatory and first level hospital care to well defined groups of families or population groups at the local level. The underlying goal of this organizational arrangement is to increase the coverage and effectiveness not only of each facility, but also of each HSA as a whole, by making optimum use of existing resources to deal with health problems of their target population groups and by improving local managerial and administrative capabilities.

2. The successful implantation and operation of the HSA depend upon: (i) providing each facility in the HSA with staff, equipment, and supplies needed to carry out its assigned functions; (ii) setting up administrative arrangements in the HSA headquarters, with premises in the highest level facility in the HSA, to ensure the proper interaction and functioning of the health services throughout the HSA; and (iii) establishing training programs to increase the knowledge and skill of staff in the HSA's facilities. The success of the HSA also depends on the development of mechanisms through which the internal organization and functions of the MOH at the central level can be brought into line with the demands of a decentralized system.

CRITERIA FOR ORGANIZING HEALTH SERVICE AREAS

3. Prior to organizing HSA, it was necessary during project preparation to: (a) define the capacity needed by the HSA to resolve health problems at the local level; (b) establish the level of efficiency at which the HSA should operate to better utilize its resources; (c) undertake an inventory of existing infrastructure, equipment, and personnel; and (d) analyze the geographic, socio-economic, and health characteristics of the country's regions. On the basis of the above information, the following criteria was used to establish HSA: (a) location (urban or rural); (b) functional level; and (c) existence of specific ethnic groups, particularly indigenous ones.

4. Geographical limits for each HSA, total population to be served, number and type of health facilities, and location of administrative headquarters for HSA management were determined based on technical criteria. This was done with the active participation of the staff in the Provincial Health Departments and in some canton-level hospitals. First, it was necessary to differentiate service delivery modules

by the location of the HSA: (a) urban HSA correspond to the marginal sectors of large cities and to the less developed boroughs in medium and small cities; and (b) rural HSA comprise the main city of the canton, parish, precinct, etc. where population concentration is more dispersed.

5. Second, how well HSA functioned was used as a major factor for delimiting HAS. This was determined by examining: (a) the compatibility of the population size with the size of the area; (b) the capacity of the area to provide adequate health service coverage; (c) the size of the territory and availability of transportation; (d) number of existing health facilities; and (e) management and supervisory capacity, as well as logistical support in the areas. Another determinant was the proximity of the areas to economically active centers that determine the flow of neighboring populations, as well as the direction and frequency of transportation. This was particularly important in deciding whether to include one or more rural subcenters in an HSA, even when they are closer to the canton-level hospital of another area.

6. The use of functional criteria helped reveal important operating differences that influenced the determination of HSA size. In urban areas the size of the territory and therefore the availability of transportation did not constitute a problem because of the high population density and the existing transportation network. Thus, it was decided that each urban health area could most efficiently provide coverage for persons within a 9 to 10 block area. To obtain greater efficiency in the service/population ratio, redundant facilities were eliminated or merged. In the rural areas the population is much more dispersed. The organization of existing MOH service networks in rural areas --the canton-level hospital located in the main city, the subcenters and the scarce health posts located in all canton-level parishes-- were the key elements in determining the size of rural HSA.

7. In some cases rural HAS were split into two HAS within the same canton. This occurred in cases where the HSA was located in areas with intervening topographical features (rivers, mountains, streams); bad communication networks; scarce and expensive public transportation; high population density; and a large number of health facilities. In other cases, part of a rural area (one or several parishes) was assigned to neighboring HAS under the jurisdiction of another canton. The HSA of less extensive cantons --typically sparsely populated with a reduced number of health units-- were merged with other neighboring areas for administrative purposes. Then the HSA that had the highest level of health care facilities and was located closest to the respective Provincial Health Department was designated as the seat of the HSA. This was done solely for logistical reasons; patient referral functions within each canton were not changed because of existing communication and local transportation networks.

8. Finally, the existence of ethnic and cultural groups, who have their own views and customs with regard to health and illness, and other local area characteristics (such as climate, ecology, type of predominant occupation, morbidity, mortality, etc.) were considered.

TYPES OF HEALTH SERVICE AREAS

9. Four types of HSA modules were defined following the above criteria. These are: the rural module; the small urban module; the intermediate urban module; and the metropolitan module.

RURAL HEALTH SERVICE AREA MODULE

Coverage

Total population covered:	30,000-50,000 inhabitants.
Total number of health units:	5-6 subcenters and 1 canton hospital with 15-25 beds.
Coverage per subcenter:	3,000-8,000 inhabitants.
Coverage of the canton hospital:	9,000-12,000 persons receiving basic care; the entire area population receiving hospital care.
Seat of the Area Management:	Canton hospital.

These general parameters were applicable to the majority of existing canton-level health service networks. Therefore, the HSA jurisdiction generally corresponds to the jurisdiction of the respective canton.

Rural Health Subcenters. The rural health subcenters located in the main village of the parish are outpatient units offering basic services. They are responsible for delivering comprehensive care to the population living within the parish area (when the number of inhabitants does not exceed 8,000 and when none of its dispersed localities has better access to other subcenters). In a typical parish with a population of 6,000 persons (2,000 in the main village and 4,000 dispersed in small localities), those persons in the main village of the parish would be served by the health teams in and outside the subcenter^{1/}. Health assistants (one for every 160 families) would serve the dispersed population through home visits within a 2 km. radius. In addition, the subcenter team (doctor-nurse) would serve this population periodically (one or

^{1/} At present, the coverage of most rural subcenters is limited to the population clustered in the main village of the parish. One physician (on one-year rural service) and one auxiliary nurse comprise the staff; only a few rural subcenters have other professionals available under rural service, such as dentists, nurses, and obstetricians.

more times a week) through consultations and controls requested by the patient or from referrals made by health assistants.

Responsibilities of the Rural Health Subcenter. The rural health subcenter will provide the following services:

- (a) Interventions directed at promoting health, disease prevention, and early detection of pathologies (cervical cancer, hypertension, tuberculosis, acute diarrheal diseases, etc.);
- (b) Outpatient care of prevailing morbidity, with access to basic pharmaceuticals and support to basic lab tests;
- (c) Prenatal care, child delivery, and postpartum care;
- (d) Comprehensive growth and development monitoring of children, including surveillance of cognitive development, improvement of nutritional status of children under 3 years of age, and provision of food supplements;
- (e) Family planning services;
- (f) Basic odontological care, especially for pregnant women, and preschool and school children.

Canton-level Hospitals. These facilities provide outpatient services and hospitalization for cases of medium complexity. Most canton hospitals have 15 to 25 beds and are located either in smaller urban conglomerates called "cabeceras cantonales" or in the principal city of the canton. In these facilities are located the HSA Management Units; therefore, their technical and administrative staff are directly responsible for carrying out and supporting all the area facilities. They provide basic care to 9,000-12,000 persons living in the most depressed areas of the urban locality and follow up care to the rest of the area inhabitants (between 30,000 and 50,000 persons), who have been referred to them by lower-level health care facilities or on patient demand.

Health Intervention Responsibilities of the Canton Hospitals. The services provided by the canton hospitals corresponds directly with the objectives of reducing infant and maternal mortality, as well as of decreasing premature mortality from preventable causes. These hospitals also provide the following services:

- (a) Outpatient treatment of general morbidity for both cases of basic and medium complexity; health promotion and protection; lab tests of medium complexity; and a public pharmacy;

- (b) Family planning services;
- (c) Hospitalization for acute clinical cases; and
- (d) Twenty-four hour service for normal and complicated deliveries (cesarean sections); perinatal care; surgical emergencies of medium complexity; low complexity abdominal surgery and fractures; and medical emergencies (clinical and psychiatric).

METROPOLITAN HEALTH SERVICE AREA MODULE

Coverage of the Metropolitan HSA. The metropolitan HSA serve the marginal populations of Quito and Guayaquil (approximately 60-70 thousand persons). To allow for the best possible service-to-population ratio Quito was divided into 7 metropolitan HSA and Guayaquil into 11 metropolitan HSA.

Total number of health units:	6-7 urban health subcenters and one metropolitan health center.
Coverage per subcenter:	4,000-9,000 persons.
Coverage per metropolitan health center:	9,000-18,000 persons with basic care, and follow up care for all the area population.
Seat of the Area Management:	Metropolitan Health Center.

Urban Health Subcenters. These units provide basic outpatient care and are located in the depressed areas of the cities.

Coverage. These subcenters are responsible for providing comprehensive health services to the population living within a 30-minute walking distance: between 8 to 9 blocks of level terrain or 5 to 6 blocks of uneven terrain. The volume of people covered by each urban subcenter varies (4,000 to 9,000 persons) according to the population density of the territory under its jurisdiction. The urban health subcenters have less medical responsibilities than the rural subcenters because it is easier for this population to visit a higher level health facility (i.e., closer proximity and greater availability of transportation). For this reason, child deliveries or lab tests are not provided by the subcenters. The scope of their activities are:

- (a) Activities that promote health, disease prevention, and early detection of pathologies (such as cervical cancer, acute diarrheal diseases, hypertension, tuberculosis, etc.);

- (b) Outpatient care of prevailing morbidity, with access to basic services, pharmaceuticals and basic lab support;
- (c) Comprehensive growth monitoring in children, including surveillance of cognitive development; improvement of nutritional status in children 0-3 years of age; and provision of food supplements;
- (d) Control of normal pregnancies and postpartum care;
- (e) Family planning services; and
- (f) Basic odontological care, especially for pregnant women, preschool and school children.

Metropolitan Health Centers. These are units of medium complexity that provide outpatient health care. They will be located in the marginal urban sectors of Quito and Guayaquil. They are seats of the health service areas management units, and thus their technical and administrative staff are responsible for all facilities in the Metropolitan HSA. These centers provide two types of coverage: (a) basic care to approximately 18,000 people living within 10 blocks of the health unit (a 30-minute walk from the most distant home); and (b) complementary care to all the area population (between 63,000 and 70,000 persons) through referrals from the urban subcenters or on patient request.

Health Intervention Responsibilities of the Metropolitan Health Center

- (a) Health promotion and protection.
- (b) Treat general morbidity, of simple and medium complexity, referred by the urban subcenters and on demand (by general practitioners and specialists in internal medicine);
- (c) Treat patients referred by the urban centers and on demand for pediatric and obstetric-gynecological pathologies of medium complexity, mental health problems, and physical rehabilitation;
- (d) Offer on a reduced schedule (hours per week) specialized medical care for ophthalmology, otorhinolaryngology, and other specialties according to local morbidity;
- (e) Offer twenty-four hour service for normal deliveries, clinical emergencies not requiring hospitalization, and surgery not requiring general anesthesia;
- (f) Offer family planning services;

- (g) Perform laboratory tests of medium complexity; and
- (h) Perform imaging diagnosis (X-rays, sonograms)

INTERMEDIATE URBAN HEALTH SERVICE AREA MODULE

Coverage of the Intermediate Urban Health Area. An intermediate urban health area provides services to persons located in poor neighborhoods, or recent settlements, of cities with a population between 70,000 and 120,000 inhabitants (most cities have around 100,000 inhabitants). It is worth noting that HSA near Quito and Guayaquil with low population density, small settlements, or isolated locations (hills, mangrove swamps, without ways and means of transportation), were in some cases combined with intermediate urban health service areas with similar characteristics.

The general parameters of the intermediate urban health service area are:

Total population covered:	25,000 to 40,000 persons.
Total Number of Health Units:	4 to 6 urban subcenters and one urban health center.
Subcenter coverage:	3,000 to 6,000 inhabitants depending on population density.
Health Center coverage:	6,000 and 12,000 persons with basic care; all the area population with complementary care.
Seat of the Area Management:	Health center.

Intermediate Urban Health Subcenter and Center. These health subcenters are similar to those in the metropolitan area, but provide services to fewer persons due to lower population density. The urban health centers are units of intermediate complexity. They are generally located in sites that are far away from the city hospital. They are the seat of health service area management and thus perform administrative and technical support functions for all units under their jurisdiction. The population covered with basic care is defined by the same accessibility criteria (walking distance) as in the metropolitan centers. Through these centers, basic and follow up care are provided to the entire population in the intermediate urban area (between 25,000 and 45,000 persons) referred by the subcenters in the jurisdiction or on patient request.

Health Intervention Responsibilities of the Intermediate Urban Health Center. Like the urban health center, the intermediate urban health center is oriented towards

complementing and supporting the basic units (subcenters) under its jurisdiction and towards rationalizing the demands on the city hospitals (especially, through outpatient consultation). Since it provides less coverage, both basic and follow up care, than the metropolitan center, and because in intermediate cities access to hospitals is generally easier (shorter distances) than in big cities, the medical problems served are more limited and include:

- (a) Controls, following health protection and promotion norms;
- (b) Treatment of general, simple and medium complexity morbidity, referred by the subcenters under its jurisdiction and on demand;
- (c) Treatment of psychiatric and obstetric-gynecology pathologies of intermediate complexity, referred by the subcenters under its jurisdiction and on demand;
- (d) Family planning;
- (e) Clinical laboratory examinations of intermediate complexity;
- (f) Basic X-rays; and
- (g) Emergencies not requiring general anesthesia, available eight hours a day.

SMALL URBAN HEALTH SERVICE AREA MODULE

Coverage of the Small Urban Health Area. This is the network of basic care services formed in cities with a population between 35,000 and 70,000 persons. In addition, follow up services are opened to the dispersed population of the canton or province when the main provincial city is small. To serve this urban population, the HSA is comprised of a hospital and two or three subcenters located in the most depressed urban areas. In most cases, this small urban network is integrated functionally with the existing rural service network (canton and parish), forming a mixed module with units of basic care (subcenters) in the rural parishes and in the city.

The parameters of the small urban module are:

Total population covered:	15,000 to 25,000 inhabitants (in the city).
Total number of health units:	2-3 subcenters; one hospital (canton-level or provincial).

Coverage of the subcenters:	3,000 to 6,000 inhabitants.
Coverage of the health center:	6,000 to 12,000 persons with basic care; all the urban area population with follow-up care (in addition to the rural area population when a mixed health care area).
Seat to the Area Management:	Hospital.

Units of the Small Urban Area. The small urban health subcenter is similar to the intermediate urban health subcenter, in the same way the hospital is similar to the canton-level hospital of the rural health area.

COMPOSITION OF BASIC HEALTH TEAMS

RURAL AREA

INTRAMURAL	EXTRAMURAL
1 Physician 1 Nurse Assistant	1 Physician 1 Nurse 5 Community Health Workers

Coverage of 6,000 people

URBAN AREA

INTRAMURAL	EXTRAMURAL
1-2 Physicians 1 Nurse Assistant 1 Physician	4 Nurses or 1 Nurse and 3 Community Health Workers

Coverage of 9,000 people

STAFFING PATTERNS IN RURAL SUBCENTERS ACCORDING TO POPULATION COVERAGE

POPULATION COVERED	NUMBER OF PHYSICIANS (average)	STAFFING NEEDS
3,000 - 3,599	1 - 1.9	1 physician 1 nurse 1 nurse assistant 3 community health workers
3,600 - 4,499	1.2 - 1.49	1 physician 2 nurses 1 nurse assistant 4 community health workers
4,500 - 6,599	1.5 - 2.2	2 physicians 1 nurse 1 nurse assistant 5 community health workers
AVERAGE POPULATION COVERED: 6,000 people (2,000 concentrated and 4,000 dispersed)		2 physicians 1 nurse 1 nurse assistant 5 community health workers (1 per 160 families)

Source: Ecuadorean Ministry of Health

STAFFING PATTERNS IN URBAN SUBCENTERS ACCORDING TO POPULATION COVERAGE

POPULATION COVERED	NUMBER OF PHYSICIANS (average)	STAFFING NEEDS
10,990 - 12,958	3.7 - 4.39	4 physicians 2 nurses 5 community health workers
9,900 - 10,889	3.4 - 3.69	4 physicians 2 nurses 4 community health workers
8,011 - 9,989	2.7 - 3.39	3 physicians 2 nurses 4 community health workers
7,021 - 8010	2.4 - 2.69	2 physicians 2 nurses 3 community health workers
5041 - 7,020	1.7 - 2.39	2 physicians 1 nurse 3 community health workers
4,051 - 5,040	1.4 - 1.69	1 physician 2 nurses 3 community health workers
3,061 - 4,050 2,072 - 3,060	1 - 1.39 0.7 - 0.9	1 physician 1 nurse 2 community health workers
AVERAGE POPULATION COVERED: 9,000 people		<p>ALTERNATIVE A: 3 physicians 1 dentist 1 nurse 4 community health workers</p> <p>ALTERNATIVE B: 3 physicians 1 dentist 5 nurses</p>

RESPONSIBILITIES OF THE HEALTH TEAM BY TYPE OF ACTIVITY

RESPONSIBILITIES

ACTIVITY (*)	PHYSICIAN	NURSE	OBSTET.	DENTIST	AUX.	NEW (1)
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INTRAMURAL

General Morbidity	D	C	-	-	-	-
Emergencies	C	C	C	C	C	C
Stomatology	-	-	-	D	-	-
Health Promotion	C	C	C	C	C	C
Obstetrics (2)	C	SN	D	-	SN	SN
Health Education	C	D	C	C	C	-

EXTRA-MURAL

Household Visits	SN	D	SN	SN	SN	C
General Morbidity	D	C	-	-	SN	SN
Health Promotion	SN	D	SN	SN	SN	C
Stomatology	SN	SN	SN	D	-	C
Health Education	C	D	C	C	C	C

INTRA-MURAL

Comm. Relations	C	C	C	C	C	C
Training (3)	SN	D	SN	SN	SN	C
Health Team Train.	C	D	C	C	C	C
Epidem. Surveill.	D	D	C	C	C	C
Administration	D (4)	C	C	C	C	C
Research Projects	D	C	C	C	C	C

(*) According to MOH norms

(1) New personnel to be trained

(2) Obstetrics/gynecological care, level I (mild) and normal

(3) Community Health Workers

(4) Service Director

MATRIX KEY:

D: Direct responsibility, in charge of organizing the activity

C: Shared responsibility, participates in the activity

SN: Depending on the needs and according to existing norms

REPUBLIC OF ECUADOR
 SECOND SOCIAL DEVELOPMENT PROJECT -- HEALTH AND NUTRITION
 STAFF REDEPLOYMENT AND HIRING TIMETABLE

TOTAL	1993	1994	1995	1996	1997	1998
TOTAL PERSONNEL REQUIRED IN PROJECT AREAS	174	303	499	627	681	616
PERSONNEL TO BE REDEPLOYED: (BY PROVINCE)						
PICHINCHA	30	60	100		100	
GUAYAS	30	60	90		100	80
CHIMBORAZO	10		20			20
MANABI		30	40		60	
LOJA	10	10		10	30	
AZUAY		40		130	170	50
NOT SPECIFIED BY PROVINCE						30
TOTAL	70	200	250	140	460	180
TOTAL NEW HIRING	104	103	249	487	221	436
TOTAL	1300					1600

REPUBLIC OF ECUADOR
SECOND SOCIAL DEVELOPMENT PROJECT -- HEALTH AND NUTRITION
NEW PERSONNEL TO BE HIRED BY TYPE

TYPE	NUMBER	PERCENTAGE
Doctors	250	16%
Nurses	320	20%
Community health workers	550	34%
Obstetricians	40	3%
Dentists	86	5%
Auxiliary nurses	100	6%
Administrators	45	3%
Dental hygenists	190	12%
Other personnel	19	1%
TOTAL	1600	100%

TRAINING PROGRAM FOR NEW AND EXISTING STAFF

1. The proposed training program under the project is comprised of three components: basic training; follow-up and support training; and continuing education.

■ **A. Basic Training:** The objective of this component is to train health personnel at the beginning of project implementation on knowledge and skills necessary for the attainment of the project goals. It involves the following activities:

--motivate existing personnel at the central, provincial, and local area levels;

--train new personnel (e.g., community health assistants, dental hygienists, cytotechnologists, laboratory technicians);

--planning, programming, and management courses;

--pharmaceutical management courses;

--social participation activities;

--information systems and epidemiological surveillance training;

--health and nutrition education.

■ **B. Follow-up/Support Training:** This component would help meet the educational needs of health personnel through planned activities that would vary according to professional and occupational areas, as well as to health care organizational levels. These educational activities would reinforce attitudes, impart scientific/technical knowledge, and develop specific skills. It would involve workshops on: planning, programming, and administration; health care methodologies; epidemiology; and community participation.

■ **C. Continuing Education:** This component aims to enhance the scientific knowledge of professional and non-professional staff in order to improve the quality of care. It involves the following activities:

--tape recorded conferences;

--clinical discussion sessions;

--internships/tutorships;

--continuing education courses for professionals;

--conferences with international guests;

- financial support to participate in conferences;
- scholarships to study abroad;
- bibliographical software packages;
- support for public health training at the master level at the Central University's School of Public Health in Quito.

2. The implementation of the training program would be decentralized. To this end, Provincial Health Departments's teams, in conjunction with local health teams, would be in charge of coordinating:

- discussions with training centers on training plans and methodologies, including the design and content of courses, workshops, and seminars;
- the evaluation of training activities for adjusting and/or modifying them as necessary;
- mobilizing required personnel needed for developing training activities in the project areas;
- the evaluation of the impact of the training activities on attitude changes and/or attainment of goals;
- the evaluation of the performance of training centers.

Cost Recovery Scheme for Pharmaceuticals

1. Objectives: The primary objective of the pharmaceutical cost recovery in the project areas would be to supplement Government budgets and other resources, such as the tax on cigarettes and beer, so that sustainable supplies of pharmaceuticals can be provided to residents of these areas, which currently do not receive adequate services. More specifically, the objective is that at least an average 30 percent of the direct and indirect costs incurred by MOH in obtaining, distributing, and storing drugs, and in providing them to patients, be recovered by the project's mid-term review, 35 percent during the May 1996-December 1998 period, and 40 percent by the end of the project.
2. Drugs: Only generic drugs which are listed in the country's basic drug list would be purchased and dispensed in the project's health facilities.
3. Pricing: Consistent with existing Government policy, those drug products included in two of MOH's pharmaceutical programs (MEGRAME --only for children under 5 years of age-- and High Risk Diseases) would be distributed to user free-of-charge; remaining products of the country's basic drug list would be sold under a cost-recovery scheme in which prices for pharmaceuticals would be set at 100 percent of CIF drug cost plus an average operating cost.
4. Proposed Methods: Four methods have been proposed for pilot testing in project areas: (a) Sliding Scale Method, would apply only to hospitalized and emergency patients, and all other non-exempt patients would be required to pay full price. It is assumed that on average 50 percent of costs would be recovered from those patients on the sliding scale. The sliding scale would assign patients to a payment category based on income, and the patient pays the corresponding percentage of full price for drugs. The purpose of the sliding scale would be to protect patients with a very low income, who may genuinely are not able to afford to pay the full cost of drugs. To this end, the ficha familiar (family health card) in each health facility at the local level would be used to record income data. The sliding scale would have the following categories: (i) 100 percent pay, relatively high income; (ii) 75 percent pay, medium income; (iii) 50 percent pay, low income; and (iv) 25 percent pay, very low income. (b) Sliding Scale Method, would apply to all non-exempt patients. Again, it is assumed that 50 percent of costs would be recovered from sliding scale patients. (c) There is no sliding scale, and all non-exempt patients would be expected to pay full price. (d) There is no sliding scale, but a 50 percent discount is provided to 50 percent of the patients who are not eligible for MEGRAME or the High Risk Diseases Program, based on income status.
5. Phasing of Implementation: The proposed pharmaceutical cost recovery scheme would be pilot tested in three local health service areas during the first year of project implementation to determine the changes that are needed before extending it to the rest of the project's local health service areas.
6. Management Responsibilities: Functions and management responsibilities in the pilot pharmaceutical cost recovery scheme would be as follows:

MANAGEMENT RESPONSIBILITIES IN PHARMACEUTICAL COST RECOVERY

Level	Function
M. O. H. Central Administration	<ol style="list-style-type: none">1. Review and approve the program for cost recovery in pilot areas.2. Review and approve the pricing system.3. Provide funds necessary to obtain drugs and supplies from CEMEIM, and to support operating expenses in the pilot areas.4. Complete a contract with CEMEIM to provide drugs and medical supplies to pilot areas.5. Review and approve the estimate of needs from the Areas.6. Supervise pilot project activities in Provinces and Areas.7. Review recommendations to change the Cuadro Nacional de Medicamentos Basicos (CNMB), and make changes as necessary.
CEMEIM	<ol style="list-style-type: none">1. Conduct, as appropriate, local and international tender solicitations to obtain contracts for Project drugs and medical supplies, based on annual estimate of requirements.2. Purchase drugs and supplies on behalf of Project areas.3. Implement unified system of inventory management for "gratuitos y vendibles".4. Deliver drugs and supplies to Areas and individual units in sealed containers.5. Maintain records and prepare reports on Project costs and consumption.
Provincial Level	<ol style="list-style-type: none">1. Review the quantification of needs by the Areas.2. Supervise pilot project activities in Areas within the Province.

MANAGEMENT RESPONSIBILITIES IN PHARMACEUTICAL COST RECOVERY (Cont.)

Level	Function
Area	<ol style="list-style-type: none"> 1. Assist health facilities in Area to develop to estimate needs for drugs and supplies. 2. Consolidate institutional plans into area plan. 3. Supervise all pilot project activities in the Area. 4. Review requests from Area institutions, and prepare orders to CEMEIM on behalf of institutions in Area. 5. Maintain records of orders, receipts, cost recovery, and other pilot project activities in Area. 6. Assure correct delivery of drugs and supplies to institutions in the Area. 7. Coordinate requests for changes to CNMB from health practitioners in Area. 8. Approve requests for drugs not on the CNMB for specific patients. 9. Assist in conducting operations research on pilot project performance.
Hospitals and Health Centers	<ol style="list-style-type: none"> 1. Develop estimate of requirements for drugs and supplies, incorporating requirements of lower levels. 2. Manage inventory in accordance with pilot project procedures. 3. Generate requests for orders for drugs and supplies, for review and consolidation at Area. 4. Assure delivery of drugs and supplies to lower levels. 5. Dispense drugs and supplies to patients. 6. Operate cost recovery program in accordance with pilot project procedures. 7. Request changes to CNMB based on institutional requirements. 8. Cooperate with operations research.

MANAGEMENT RESPONSIBILITIES IN PHARMACEUTICAL COST RECOVERY (Cont.)

Level	Function
Health Subcenters	<ol style="list-style-type: none">1. Develop estimate of requirements for drugs and supplies, incorporating requirements of Boticas.2. Manage inventory in accordance with pilot project procedures.3. Generate requests for orders for drugs and supplies, for review and consolidation at Hospital or Centro de Salud.4. Assure delivery of drugs and supplies to Boticas.5. Dispense drugs and supplies to patients.6. Operate cost recovery program in accordance with pilot project procedures.7. Request changes to CNMB based on institutional requirements.8. Cooperate with operations research.
Community Drug Stores	<ol style="list-style-type: none">1. Develop estimate of requirements for drugs and supplies.2. Manage inventory in accordance with pilot project procedures.3. Generate requests for orders for drugs and supplies, for review and consolidation at Hospital, Centro de Salud, or Subcentro.4. Dispense drugs and supplies to patients.5. Operate cost recovery program in accordance with pilot project procedures.6. Request changes to CNMB based on institutional requirements.7. Cooperate with operations research.

NATIONAL DRUG LIST GENERIC PRODUCTS
CUADRO NACIONAL DE MEDICAMENTOS BASICOS

REVISION 1992

DISTRIBUCION POR GRUPOS FARMOCLINICOS
Y NIVELES DE COMPLEJIDAD

CAPITULO 1ro.

NIVELES DE COMPLEJIDAD PARA EL MANEJO DE MEDICAMENTOS

PRIMER NIVEL: Fármacos para unidades donde se presta atención de salud con personal no médico, supervisado por el personal médico y odontológico. (PUESTOS DE SALUD)

SEGUNDO NIVEL: Fármacos para unidades donde se presta atención ambulatoria de medicina general y odontológica con personal profesional. (CENTROS Y SUBCENTROS DE SALUD)

TERCER NIVEL: Fármacos para unidades donde se presta atención ambulatoria y hospitalización, por lo menos, en cuatro especialidades básicas. (HOSPITALES CANTONALES Y REGIONALES)

CUARTO NIVEL: Fármacos para unidades donde se presta atención ambulatoria y hospitalización con otras especialidades, a más de las cuatro básicas, y para hospitales y servicios especializados. (HOSPITALES DE ESPECIALIDADES)

ABREVIATURAS

CNMB : Cuadro Nacional de Medicamentos Básicos
DCI : Denominación Común Internacional
(e) : Especialidad
(he) : Hospital de Especialidades
(h) : Hospital
amp : Ampolla
cap : Cápsulas
fco : Frasco
fco.amp: Frasco-ampolla (vial)
grag : Grageas
jbe : Jarabe
sol.iny: Solución inyectable
sol.oft: Solución oftálmica
sup : Supositorio
susp : Suspensión
ung. : Unguento

Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4

I SISTEMA NERVIOSO CENTRAL Y PERIFERICO

A. Analgésicos opiáceos

N12202	Dextropropoxifeno	Amp. 75 mg/2ml. Cap. 65 mg.	X	X	X	
N12204	Fentanilo (h)	Amp. 0,05 mg/ml. -10ml.	X	X	X	
N12208	Morfina (h)	Amp. 10 mg/1ml.	X	X	X	
N12207	Petidina (h)	Amp. 100 mg/1ml. Amp. 50 mg/1ml.	X	X	X	
N12210	Tramadol	Amp. 100 mg/2ml. y Amp. 50 mg/1ml.	X	X	X	

B. Analgésicos no opiáceos

N11101	Acetil salicilato de lisina	Amp. 1,8 g/5ml.	X	X	X	
N11103	Acido acetil salicilico	Tab. 100 mg. Tab. 500 mg.	X	X	X	X
N11501	Paracetamol (acetaminofén)	Gotas 60 mg/0.6 ml. Jbe. 120 mg/5 ml. Sup. 250 mg. Tab. 500 mg.	X	X	X	X

C. Anestésicos generales

N21204-1	Droperidol+fentanilo (he)	Fco. Amp - 2.5mg + 0.05mg/ml/10 ml	X	X	X	
N21102	Enflurano (he)	Fco. 240 ml.	X	X	X	
N21106	Halotano (he)	Fco. 250 ml.	X	X	X	
N21206	Ketamina	Fco. amp. 10 mg/ml. - 20 ml. Fco. amp. 50 mg/ml. - 10 ml.	X	X	X	
N21212	Tiopental sódico (he)	Fco. amp. 1 gr.	X	X	X	

D. Anestésicos locales

N22102	Bupivacaina	Sol. 0.5 % con epinefrina al 1:200.000 fco.amp. 20ml.	X	X	X	
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Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4

N22302	Lidocaina	Sol. 0.5 % sin epinefrina fco. amp. 20ml. Jalea 2 % tubos Sol. 5% sin epinefrina - 2 ml. (h) Sol. al 2 % con Epinefrina al 1:200.000 Sol. al 2% sin epinefrina fco. 50ml. Spray sol. 10 % - 80ml. Sol oft. 0.5%	X	X	X	
N22305	Tetracaina		X	X	X	

E. Ansiolíticos

N61104	Bromazepam	Tab. 1.5 y 3 mg.	X	X	X	
N41107	Clobazam	Tab. 10 mg.	X	X	X	
N61112	Diazepam	Amp. 10 mg Jbe. 2 mg/5ml. Tab. 10 mg. Tab. 5 mg.	X	X	X	

F. Antidepresivos

N62201	Amitriptilina	Fco. Amp. 10 mg/ml. - 10ml. (e) Tab. 10 mg. Tab. 25 mg.	X	X	X	
N62215	Trazodona	Amp. 50 mg/5 ml. (e) Tab. 100 mg.	X	X	X	

G. Antimaníaco-depresivos

N63001	Litio carbonato (e)	Tab. 300 mg.				X
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H. Antisicóticos

N64502	Clorpromazina	Amp. 25 mg/5ml. (h) y Tab. 25 mg.	X	X	X	
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Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4
N64105	Haloperidol	Amp. 5 mg/1ml (e) Gotas 0,2 % fco. 15 ml. Tab. 0,5 mg. Tab. 10 mg. Tab. 2 mg.		X	X	X
N64509	Pipotiazina (e)	Amp. 100 mg/4ml y 25 mg/1ml.		X	X	X
N64518	Fioridazina (e)	Tab. 200 mg. y 30 mg.		X	X	X
I. Hipnosedantes						
N61108	Clonazepam	Tab. 2 mg.		X	X	
N33102	Fenobarbital	Amp. 120 mg/2ml. Tab. 100 mg. Tab. 30 mg.		X	X	X
N61129	Nitrazepam	Tab. 5 mg.		X	X	X
J. Antivertiginosos						
N34002	Dimenhidrinato	Tab. 50 mg.		X	X	X
K. Antiepilépticos						
N31801	Acido valproico (sal sódica)	Sol. Oral 200 mg/ml/fcos. de 40ml. Tab. 300 mg. Tab. 500 mg.		X	X	
N31102	Carbamazepina	Susp. 20 mg/ml/120ml. Tab. 200 mg.		X	X	
N31104	Fenitoína	Cap. 100 mg. Fco. Amp. 250 mg/5ml. Susp. 100 mg/5ml.		X	X	X
N31805	Primidona	Tab. 250 mg.		X	X	
L. Antiparkinsonianos						
N32201	Biperideno	Amp. 5 mg/ml. - 2ml.		X	X	

Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4
N32901-1	Levodopa + inhibidor (e)	Tab. 2 mg. Tab. 200 - 250 mg + 25 - 50 mg.		X	X	
M. Antimigraña						
V72004	Ergotamina compuesta	Grag.		X	X	X
N. Miorrelajantes						
N42109	Orfenadrina	Amp. 60 mg/2ml. Tab. 100 mg.		X	X	X
N42307	Pancuronio (he)	Amp. 2 mg/ml. - 2ml.		X	X	
N42203	Suxametonio (he)	Fco. 500 mg/10 ml.		X	X	
N42309	Vecuronio (he)	Amp. 4 ml.		X	X	
II SISTEMA NERVIOSO VEGETATIVO						
A. Adrenérgicos						
V33003	Dopamina (h)	Amp. 200 mg/5 ml.		X	X	
V33001	Epinefrina	Amp. 1 mg/1ml.		X	X	X
V31102	Etiniladrianol	Amp. 10 mg/1 ml.		X	X	X
R11213	Isoprenalina (h)	Amp. 0,2 mg/1ml.				X
B. Betabloqueadores						
V42119	Pindolol	Comp. 10 mg.		X	X	X
V42120	Propranolol	Tab. 40 mg. y 80 mg.		X	X	X
C. Colinérgicos						
V11206	Neostigmina	Amp. 0,5 mg/1ml. y Tab. 15 mg.		X	X	

Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4
V11204	Piridostigmina	Tab. 60 mg.			X	X
D. Anticolinérgicos						
V21002	Atropina	Amp. 1 mg/1ml.			X	X X
III APARATO CARDIOVASCULAR						
A. Antianginosos						
C11203	Isosorbida	Fco. Amp. 1 mg/ml. 100ml. (h) Tab. 10 mg. Tab. 20 mg. Tab. sublinguales 5 mg.			X	X X X
C11111	Nifedipino	Tab. o Cap. 10 mg.			X	X X
C11207	Trinitrato de glicerol	Preparaciones transcutaneas			X	X X
C11119	Verapamilo	Amp. 5 mg/2ml. Grag. 80 mg.			X	X X
B. Antidisríticos						
C12201	Amiodarona (e)	Amp. 150 /3ml. Tab. 200 mg.				X X
C12114	Quinidina (e)	Tab. 200 mg.				X X
C. Glucosidos Cardiotónicos						
C13104	Digoxina	Amp. 0,25 mg/1ml. Gotas 0,75 mg/ml. Tab. 0,25 mg.			X	X X X
C13106	Lanatosido c	Amp. 0,4 mg/2ml.			X	X X
D. Antihipertensivos						
C22103	Clonidina	Amp. 0,15 mg/ml. y Tab. 0,15 mg.			X	X X

Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4
C22208	Enalapril	Tab. 20 mg. Tab. 5 mg.			X	X X X
C22305	Hidralaxina	Amp. 20 mg/5ml. Tab. 50 mg.			X	X X
C22101	Metildopa	Tab. 250 mg. Tab. 500 mg.			X	X X X
C22309	Nitroprusiato sódico (h)	Amp. 50 mg/5ml.				X
V41207	Prazosina	Tab. 1 mg.			X	X X
IV APARATO RESPIRATORIO						
A. Antiasmáticos						
R11301	Aminofilina	Amp. 25 mg/ml. Tab. 350 mg.			X	X X X
H21202	Beclometasona	Inhalador 10 mg.			X	X X
R12006	Ketotifeno (e)	Jbe. 1 mg/5ml. Tab. 1 mg.			X	X X
R11222	Salbutamol	Amp. 0,5 mg/ml. Inhalador 20 mg. Jbe. 2 mg/5ml. Tab. 4 mg.			X	X X X
B. Antitusígenos						
R32002	Codeína	Tab. 10 mg.			X	X X X
R32004	Dextrometorfano	Gotas 15 mg/ml. Fco. 20 ml. Jbe. 15 mg/5ml.			X	X X X
V APARATO GASTROINTESTINAL						
A. Antiulcerosos						
D112103	Algeltrato	Fco. 300 - 320 mg/5ml.			X	X

Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4
D11002	Cimetidina	Amp. 200 mg/2ml. (h) Tab. 200 mg. Tab. 400 mg.		X	X	X
D19005-1	Malgaldrato	Gel. - Fco. 300 +/- 100 ml.	X	X	X	X
B. Antieméticos						
D51008	Metoclopramida	Amp. 10 mg/2ml. Gotas 4mg/ml. Tab. 10 mg.	X	X	X	X
D51012	Tietilperazina	Amp. 6.5 mg/1ml.	X	X	X	X
C. Antiespasmódicos						
V21005	Butilscopolamina	Amp. 20 mg. Grag. 10 mg.	X	X	X	X
V21017	Pramiverina	Amp. 2,25 mg/2ml. Tab. 2 mg.	X	X	X	X
D. Antihemorroidales						
C23903-1	Corticoide + anestésico local	Pomada Sup.	X	X	X	X
E. Laxantes						
D63002	Bisacodilo	Grag. 5 mg. Sup. 10mg.	X	X	X	X
D62010	Petrolato compuesto	Emulsión Fco.	X	X	X	X
VI APARATO RENAL						
A. Analgésicos urinarios						
G21002	Fenazopiridina	Grag. 200 mg.	X	X	X	X

Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4
B. Antisépticos urinarios						
G22007	Nitrofurantoina	Tab. 100 mg.	X	X	X	X
C. Diuréticos						
G31207	Clortalidona	Tab. 100 mg.	X	X	X	X
C31303	Espironolactona	Tab. 100 mg. Tab. 25 mg.	X	X	X	X
C31104	Furosemida	Amp. 20 mg/2ml. Tab. 40 mg.	X	X	X	X
C31803	Manitol (h)	Sol. 15 - 20 %, fco 500 ml	X	X	X	X
VII APARATO GENITAL FEMENINO						
A. Inductores de la ovulación						
H34203	Clomifeno (e)	Tab. 100 mg. Tab. 50 mg.	X	X	X	X
H41002	Gonadotropina coriónica (e)	Fco. Amp. 5.000 UI.	X	X	X	X
H41002	Gonadotropina menopáusica (e) (menotropina)	Amp. 75 UI.	X	X	X	X
B. Lactoinhibidores						
H35002	Bromocriptina (e)	Tab. 2,5 mg.	X	X	X	X
C. Contractores uterinos						
G12305	Metilergonovina	Amp. 0,2 mg/1ml. y Grag. 0.125 mg.	X	X	X	X
G12102	Oxitocina (h)	Amp. 10 UI/ml.	X	X	X	X

Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4
D. Utero inhibidores						
D11209	Fenoterol	Amp. 0.5 mg/10 ml. y Comp. 2.5 mg.	X	X	X	
E. Miscelaneos						
D64012	Magnesio sulfato	Sol. 20 - 25 % Amp. 10 ml.	X	X		
VIII MEDICACION PARA AFECCIONES DE LA PIEL						
A. Antiinfecciosos-antiinflamatorios						
P13101-1	Corticoides + antimicrobiano	Crema Tubos	X	X	X	
		Gotas Oftálmicas	X	X	X	
		Loción Fco.	X	X	X	
		Ung. Tubos	X	X	X	
P13202-1	Corticoides + antimicótico	Crema Tubos	X	X	X	
		Loción Fco.	X	X	X	
		Ung. Tubos	X	X	X	
		Crema Tubos	X	X	X	
P13802-1	Corticoides + clioquinol	Ung. Tubos	X	X	X	
		Crema Tubos	X	X	X	
P12103	Corticoides no fluorado	Ung. Tubos	X	X	X	
P12110	Fluocinonida	Crema Tubos	X	X	X	
		Crema 0,5 mg/g. Tubo 15 g	X	X	X	
P11116	Nitrofurural	Sol. 0,5mg/ml. Fco.15 ml.	X	X	X	
		Sol. al 0,2 % Fco. 120 ml.	X	X	X	
			X	X	X	
B. Queratoplásticos						
P26003	Alquitran de hulla	Sol. tópica, 7,5%	X	X	X	
C. Escabicidas						
P24002	Benzoato de bencilo	Loción al 30% Fco. 120 ml.	X	X	X	X

Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4
IX MEDICACION HORMONAL						
A. Andrógenos						
H12001	Danazol (e)	Cap 200 mg.				X
H11106	Enantato de testosterona	Amp. 250 mg/1 ml.				X X
H11105	Undecanoato de testosterona	Cap. 40 mg.				X X
B. Contraceptivos orales						
H39003-1	Estrógeno + progestágeno	Tab. (Dosis)	X	X	X	
C. Estrógenos						
H33112	Estrógenos conjugados naturales	Crema Vaginal 0.0625%	X	X	X	
		Tab. 1,25 mg.	X	X	X	
H33108	Valerato de estradiol	Amp. 10 mg/1 ml.				X X
		Grag. 1 mg.	X	X	X	
			X	X	X	
D. Glucocorticoides						
H21212	Acetato de metilprednisolona	Fco. Amp. 40 mg/1ml. y 80 mg/1ml.				X X
H21203	Betametasona	Amp. 6mg/ml. - 2 ml.				X X
H21205	Dexametasona	Amp. 4mg/ml/2 ml.				X X
H21215	Prednisona	Tab. 5 mg.	X	X	X	
		Tab. 50 mg. (e)	X	X	X	
H21102	Succinato sódico de hidrocortisona	Fco.amp. 100 mg.	X	X	X	
H21218	Triamcinolona	Tab. 8 mg.	X	X	X	
E. Hormonas hipotálamo - hipofisarias						
H43001	Inyectable de vasopresina	Amp. 10 UI./0.5ml				X

Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4
F. Antidiabéticos						
H3202	Glibenclamida	Tab. 5 mg.	X	X	X	
H33005	Insulina isofánica	Fco. Amp. 40 UI/ml. - 10 ml.	X	X	X	
H33002	Insulina zinc cristalina	Fco. Amp. 40 UI/ml. - 10 ml.	X	X	X	
G. Progestágenos						
H36102	Caproato de hidroxiprogesterona	Amp. 250 mg/ml.	X	X		
H36214	Noretisterona	Tab. 5 mg. y 10 mg.	X	X		
H. Hormonas tiroideas y antitiroideas						
H72004	Levotiroxina sódica (e)	Tab. 0,1 mg.			X	
H72005	Propiltiouracilo (e)	Tab. 50 mg.			X	
H71003	Tiamazol	Tab. 5 mg.			X	
H72007	Tiroglobulina (e)	Tab. 65 mg.			X	
X FARMACOS PARA AFECCIONES DE LA SANGRE						
A. Antiagregantes plaquetarios						
S23002	Dipiridamol	Grag. 75 mg.	X	X		
B. Antianémicos						
S11001	Acido fólico (e)	Tab. 1 mg.			X	X
S14009	Hierro (sal ferrosa)	Gotas de más de 20 mg. Fe elemental	X	X	X	
S14005	Hierro dextrans	Grag. de más de 50 mg. Fe elemental	X	X	X	
		Amp. 100 mg/ml.			X	X

Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4
C. Anticoagulantes						
S22002	Heparina (h)	Fco. Amp. 5.000 UI/ml/5ml.	X	X		
S21003	Warfarina sódica	Tab. 5 mg.	X	X		
D. Hemostáticos						
S42001	Acido aminocaproico (he)	Fco. Amp. 250 mg/ml. - 20 ml.			X	
E. Sucedaneos del plasma						
S52001	Albumina humana (H)	Sol. Iny. 20-25 %			X	
S52001	Albumina humana (h)	Sol. Iny. 20-25 %			X	
S52003	Dextrán 40 sol. 10% en cloruro de sodio al 0,9%	Sol. Iny. Fco. 500 ml.	X	X		
S52003	Dextrán 40 sol. al 10% en glucosa al 5%	Sol. Iny. Fco. 500 ml..	X	X		
F. Trombolíticos						
S41002	Estreptoquinasa (h)	Fco. Amp. 250.000 UI.			X	
XI FARMACOS PARA TRATAR LA DISFUNCION POR AUTACOIDES						
A. Antihistamínicos						
V71206	Difenhidramina	Amp. 50 mg/ml. Cap. 50 mg. Jbe. 10 mg/5 ml.	X	X	X	
V71407	Terfenadina	Jbe. 30 mg/5ml - Fco. 120 ml. Tab. 60 mg.	X	X	X	

Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4
B. Antiinflamatorios no esteroideos						
M11410	Diclofenaco	Amp. 75 mg/3ml. Sup. 100 mg. Sup. 25 mg. Tab. 25 mg. Tab. 50 mg.	X	X	X	
M11303	Indometacina	Cap. 25 mg. Sup. 100 mg.	X	X	X	
M11427	Naproxeno	Cap. / Tab. 500 mg. Sup. 500 mg.	X	X	X	
XII TRASTORNOS METABOLICOS						
A. Antigotosos						
M12001	Alopurinol	Tab. 100 mg. Tab. 300 mg.	X	X	X	
M11002	Colchicina	Tab. 0,5 mg.	X	X	X	
B. Hipolipemiantes						
M33002	Colestiramina	Sobres 9g.		X	X	
M31007	Gemfibrozilo	Cap. 300 mg.		X	X	
C. Fluidos y electrolitos						
M28101	Agua destilada para inyección Aminoácidos 5-8.5% y electrolitos (h)	Amp. 2ml, 5ml y 10ml. Sol. Fco. 500 ml.	X	X	X	

Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4
M22305	Calcio gluconato	Sol. 10% Amp. 10 ml.			X	X
M23005	Dextrosa al 5 % sol. salina al 0.9%	Fco. 1000 ml.	X	X	X	
M23004	Glucosa en agua	Sol. Iny. 10% Fco. 1000 ml. Sol. Iny. 5% Fco. 1.000 ml. Sol. Iny. 50% Fco. 500 ml.	X	X	X	
M22111	Potasio cloruro, sol. (2 meq/ml.)	Amp. 10ml. y 20ml.			X	X
D29001-1	Sales de rehidratación oral	Sol. Oral 11.7% Polvo/dil. en 1 lt. ClNa 3.3 g.- Citrato trisódico dihidratado 2.9 g. ClK 1.3 g. glucosa 20 g.	X	X	X	X
M22105	Sodio bicarbonato 7.5%	Amp. 50 ml.			X	X
M22113	Sodio cloruro (3.5meq. Na - 3.5meq. Cl/ml)	Amp. de 10 ml.			X	X
M22113	Sodio cloruro 0.9%	Sol. Fco. 1.000 ml.	X	X	X	
M22200-1	Solución buttler	Amp. 10 ml.			X	X
M22205-1	Solución darrow	Amp. 10 ml.			X	X
M22211-1	Solución ringer lactato	Fco. 1000 ml.	X	X	X	

XIII ANTIINFECCIOSOS

A. Antimicrobianos						
A11001	Amikacina	Amp. 100 mg/2 ml. Amp. 500 mg/2 ml.			X	X
A15002	Ampicilina	Caps/Tab. 250 mg. Caps/Tab. 500 mg. Comp. 1 g. Fco. Amp. 1.000 mg. Fco. amp. 500 mg. Susp. 250 mg/5 ml.	X	X	X	X

Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4
A15103	Bencilpenicilina (h) (penicilina g. cristalina)	Fco. Amp. 1'000.000 UI.		X	X	
A15104	Benzatina bencil penic. (penicilina g benzat)	Fco. Amp. 5'000.000 UI. Fco. Amp. 1'200.000 UI.		X	X	X
A12102	Cefalexina	Fco. Amp. 600.000 UI. Cap. 500 mg. Susp. 250 mg/5ml.		X	X	X
A12105	Cefapirina	Fco. Amp. 500 mg. y 1g.		X	X	
A12304	Cefotaxima (h)	Fco. Amp. 1g. y 500 mg.		X	X	
A12305	Ceftazidina (h)	Fco. Amp. 500mg. y 1 g.		X	X	
A24101	Ciprofloxacino	Tab. 250 mg.		X	X	X
A15102	Clemizol penicilina (penicilina g clemizol)	Fco. Amp. 1'000.000 UI.		X	X	X
A14101	Ciindamicina	Amp. 600 mg/4ml.		X	X	
A14104	Cloranfenicol	Cap. 250 mg. Cap. 500 mg. Fco. amp. 1g. Gotas Oft. 0.25 - 0.5%		X	X	X
A15402	Dicloxacilina	Jbe. 125 mg/5ml. Ung. oftálmico 1 % Cap. 500 mg. Fco. amp. 250 mg. Susp. 62,5 mg/5ml.		X	X	X
A14203	Eritromicina	Gotas 100 mg/ml. Susp. 200 mg/5ml.		X	X	X
A15101	Fenoximetilpenicilina	Tab. 250 mg. y 500 mg. Susp. 300.000 UI/5ml.		X	X	X
A11004	Gentamicina	Tab. 1 - 1'2 millones UI. Amp. 20 mg/2ml. Amp. 80 mg/2ml.		X	X	X
A24103	Norfloxacino	Crema, tubos 15 g. Tab. 400 mg.		X	X	X

Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4
A25903-1	Sulfametoxazol + trimetoprima (cotrimoxazol)	Amp. 80 mg+400mg/3ml. (h) Susp. 40 mg+200mg/5ml. Tab. 80 mg + 400 mg. Cap. 250 mg. y 500 mg.		X	X	
A13212	Tetraciclina			X	X	X
B. Antituberculosos						
A22101	Estreptomicina	Amp. 1 g.		X	X	X
A22201	Etambutol	Tab. 400 mg.		X	X	X
A22102	Isoniazida	Tab. 100 mg.		X	X	X
A22103	Pirazinamida	Tab. 500 mg.		X	X	X
A22104	Rifampicina	Cap. 300 mg. Jbe. 100 mg/5ml.		X	X	X
C. Antileproicos						
A21003	Clofazimina (e)	Cap. 100 mg.				X
A21004	Dapsona (e)	Tab. 100 mg.				X
D. Antivirales						
A42001	Aciclovir	Crema dérmica 5% tubo Fco. Amp 250 mg/10ml. Pomada Oft. 3% Tab o Cáps. 200 mg.		X	X	X

XIV ANTIPARASITARIOS

A. Antiamebianos

A53108	Metronidazol	Fco. Amp. 500 mg/100 ml. (h)				X
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Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4
		Ovulos 500 mg	X	X	X	
		Susp. 125 mg/3ml.	X	X	X	
		Tab. 250 mg.	X	X	X	
A53113	Teclozán	Tab. 100 mg - 500 mg y Susp 30 mg/3 ml	X	X	X	
		- Fco 60 ml.				
B. Antimaláricos						
A52102	Cloroquina	Amp. 150 mg/3ml. y Tab. 250 mg.	X	X	X	
A52304	Diclorhidrato de quinina	Amp. 300 mg/ml.	X	X	X	
A52105	Mefloquina	Tab. 250 mg.	X	X	X	
A52105	Primaquina	Tab. 250 mg.	X	X	X	
A52901-1	Sulfadoxina+pirimetamina	Tab. 500 mg+25 mg.	X	X	X	
A52304	Sulfato de quinina	Tab. 300 - 650 mg.	X	X	X	
C. Antimicóticos						
A31001	Amfotericina b (h)	Fco. Amp. 50 mg.				X
P11209	Clotrimazol	Crema dermatológica 1 % tubo 20 g.	X	X	X	
		Crema vaginal 2 % tubo 20 g.	X	X	X	
		Sol. 1 % fco 30 ml.	X	X	X	
		Tab. vag. 200 mg.	X	X	X	
A31004	Griseofulvina	Jbe. 125 mg/5ml.	X	X	X	
		Tab. 500 mg.	X	X	X	
A32005	Ketoconazol	Tab. 200 mg.	X	X	X	
P11221	Nistatina	Crema 100.000 UI/g/tubo 30g.	X	X	X	
		Susp. 100.000 UI/ml.	X	X	X	
		Tab. vaginales 100.000 UI.	X	X	X	
D. Antiparagonimiásicos						
A51302	Bitionol	Tab. 200 mg.				X X
E. Antihelmínticos						
A51201	Albendazol	Tab. 200 mg. y Susp. 20 mg/ml. fco. 20 ml				X X

Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4
A51209	Embonato de pirantel	Susp. 50 mg/ml. fco. 15 ml.	X	X	X	
		Tab. 250 mg.	X	X	X	
A51207	Mebendazol	Cap. o tab. 100 mg.	X	X	X	
		Susp. 20 mg/ml. fco. 30 ml.	X	X	X	
A51104	Niclosamida	Tab. 500 mg.	X	X	X	
A51210	Piperazina	Jbe 20 %, Fco. 60 ml.	X	X	X	
A51106	Prazicuantel	Tab. 600 mg.				X

F. Antileishmaniásicos-antitripanosomiásicos

A53201	Antimoniato de meglumina	Amp. 300 mg/ml. - 5 ml.				X X
A53305	Nifurtimox	Tab. 120 mg.				X X

G. Antitoxoplasma

A52204	Pirimetamina	Tab. 25 mg.				X X
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XV MEDICAMENTOS PARA TRASTORNOS DE LA NUTRICION

A. Vitaminas y minerales

M42301	Acido ascórbico (vit. c)	Amp. 500 mg/3 ml.	X	X	X	
		Gotas, 200 mg/ml.	X	X	X	
		Tab. 1 g.	X	X	X	
M42404	Calcitriol (vit. d) (e)	Cap. 0,5 mcg				X X
S12002	Cianocobalamina (vit. b12)	Amp. 1000 mcg.				X X
M42901-1	Complejo B (comp. min. VIT.B1-B6-B12)	Amp.	X	X	X	
		Gotas	X	X	X	
		Tab. o Grag.	X	X	X	
S33004	Menadiona (vit. k)	Amp. 10 mg/1ml.	X	X	X	
M41201-1	Multivitaminas con o sin minerales	Gotas	X	X	X	

Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4
		Jbe.	X	X	X	
		Tab. o cap.	X	X	X	
M42203	Piridoxina (vit. b6)	Amp. 300 mg.	X	X	X	
		Tab. 100 mg.	X	X	X	
M42108	Retinol (vit. a.)	Amp. 300.000 UI/ml.	X	X	X	
		Comp. 50.000 UI.	X	X	X	
		Gotas 150.000 U.I./ml fco. 7.5 ml.	X	X	X	
N42207	Tiamina (vit. b1)	Amp. 100 mg/ml/10 ml.	X	X	X	
		Tab. 100 mg.	X	X	X	

XVI MEDICAMENTOS PARA USO OFTALMICO Y OTORRINOLARINGOLOGICO

A. Antiglaucoma

O11201	Acetazolamida (e)	Tab. 250 mg.	X	X		
Q21001	Azatioprina (e)	Amp. 100 mg.	X	X		
O11306	Pilocarpina (e)	Sol. Oft. al 2% y al 4% 15 ml.	X	X		
V42125	Timolol (e)	Sol. Oftálmica 0.5% - 5 ml.	X	X		
		Sol. Oftálmica al 0,25 % - 5ml.	X	X		

B. Midriáticos

O14003	Tropicamida (e)	Sol. Oft. al 1 % / 5 ml.	X	X		
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C. Antiinflamatorios y/o antiifecciosos

F13101-1	Corticoide + antibiótico	Colirio	X	X	X	
		Gotas óticas	X	X	X	
O29001-1	Fenazona + benzocaina	Gotas óticas	X	X	X	
H21214	Prednisolona	Sol Oftálmica 1%/10ml.	X	X	X	
A25100	Sulfacetamina sódica	Sol. Oftálmica 10-15% / 15ml.	X	X	X	
A11011	Tobramicina	Sol Oftálmica 0.3%/5ml.	X	X		

Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4

D. Vasoconstrictores de uso tópico

V31104	Fenilefrina	Sol. Oft. 0.12% / 15ml.	X	X	X	
O22009	Oximetazolina	Sol. Nasal 0,05 % / 15 ml.	X	X	X	
O22014	Tetrisolina	Sol. oftálmica al 0,05 %	X	X	X	

XVII ANTINEOPLASICOS E INMUNOSUPRESORES

Q24201	Azatioprina (e)	Tab. 50 mg.	X	X		
Q15202	Bleomicina (e)	Amp. 15 UI.	X	X		
Q11102	Busulfano (e)	Tab. 2 mg.	X	X		
Q11302	Ciclofosfamida (e)	Amp. 500 mg. y Tab. 50 mg.	X	X		
Q21003	Ciclosporina	Amp. 50 mg/ml (he)	X	X		
		Sol Oral 100 mg/ml (e)	X	X		
Q14203	Cisplatino (e)	Amp. 10 mg.	X	X		
Q12202	Citarabina (e)	Amp. 100 mg.	X	X		
Q11303	Clorambucilo (e)	Tab. 2 mg.	X	X		
Q15203	Dactinomicina	Amp. 0,5 mg.	X	X		
Q15205	Doxorrubicina (e)	Amp. 10 mg.	X	X		
		Amp. 50 mg.	X	X		
Q15102	Etoposido (e)	Amp. 100 mg.	X	X		
Q12205	Fluoruracilo (e)	Amp. 50 mg/ml. - 5ml	X	X		
F11403	Lomustina (e)	Cap. 40 mg.	X	X		
Q12304	Mercaptopurina (e)	Tab. 50 mg.	X	X		
Q12103	Metotrexato (e)	Amp. 50 mg/2ml.	X	X		
		Tab. 2,5 mg.	X	X		
Q14305	Fluocarbazina (e)	Cap. 50 mg.	X	X		
H31004	Tamoxifeno (e)	Tab. 10 mg.	X	X		
Q15109	Vinblastina (e)	Amp. 10 mg.	X	X		

Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4
Q15107	Vincristina (e)	Amp. 1mg. Amp. 5 mg.			X	X
XVIII ANTIDOTOS						
I21202	Flumazenilo	Amp. 0.1 mg/ml.			X	X
I21203	Folinate cálcico	Amp. 3 mg/1 ml. Tab. 5 mg.			X	X
N12402	Naloxona	Amp. 0,4 mg/1 ml.			X	X
I23005	Penicilamina	Tab. 250 mg.			X	X
V11302	Pralidoxima	Amp. 1g/20ml.			X	X
I21101	Sulfato de protamina	Amp. 50 mg/5ml.			X	X

XIX PREPARACIONES INMUNOLOGICAS

A. Antitoxinas, toxoides, inmunoglobulinas

Q24201	Antitoxina diftérica	Amp. 10.000 UI./5 ml.			X	X
Q24202	Antitoxina tetánica humana	Amp. 250 UI. Amp. 500 UI.			X	X
Q23106	Inmunoglobulina anti d (e)	Sol. Iny. 250 mcg/2ml.			X	X
Q23104	Inmunoglobulina antirrábica	Fco. 2 ml.			X	X
Q23107	Inmunoglobulina humana normal (e)	Sol. 16 % Amp. 2 ml.				X
Q23210	Suero antibotrópico polivalente	Sol. 16 % Amp. 5 ml. Amp. 20 ml.			X	X
Q24201	Toxoides diftérico	Amp.			X	X
Q23203-1	Toxoides diftérico - tetánico + vacuna pertusis	Amp.			X	X
Q23202-1	Toxoides diftérico tetánico	Amp. 0.5 ml.			X	X
Q23211	Toxoides tetánico adsorbido	Amp. 0.5 ml. (1 dosis)			X	X

Código	Denominación Común Internacional (DCI)	Presentación	Niveles			
			1	2	3	4

B. Vacunas

Q24414	Vacuna antiamarilica	Sol. Iny. (liofilizada)			X	X
Q24403	Vacuna antihepatitis b	Amp. 20 mg/ml - 3 ml.			X	X
Q24418	Vacuna antiinfluenza	Amp.			X	X
Q24406	Vacuna antipoliomielitica trivalente tipo sabin	1'000.000 virus 1 100.000 virus 2 500.000 virus 3			X	X
Q24416	Vacuna antirrábica	Sol. Iny.			X	X
Q24408	Vacuna antisarampionosa	Sol. Iny.			X	X
Q24413	Vacuna antitífica	Amp. 0.5 ml.			X	X
Q24412	Vacuna antirubeola	Fco. 1 dosis			X	X
Q24409	Vacuna bcg	Líquida Liofilizada			X	X

NUTRITION

1. Nutrition interventions to be financed under the project would be an integral part of the basic primary health care package to be provided in health facilities of project areas. The integration of health and nutrition interventions for groups at highest risk is considered to be a cost effective approach for addressing Ecuador's twin problems of poor health and malnutrition among children and pregnant and lactating mothers. The aim of the nutrition component would be to improve the overall nutritional status of pregnant and breast-feeding women, and children under the age of three, by supporting:

(a) nutrition education and promotion; (b) growth monitoring and counselling to those in need; and (c) provision of food supplementation and micronutrients

2. Nutrition Education and Promotion. The objective of this activity would be to improve nutritional practices among the general population, particularly changing behaviors with respect to breast-feeding and infant feeding, dietary quality, and hygiene. To this end, the project would first support training for health personnel so that they would become effective disseminators of nutritional messages. A local professional team previously trained in lactation management in an international center would be in charge of this activity. Once trained, health workers would provide nutritional counselling as part of routine health care to be offered at local health service area facilities and at the household level. The project would finance: 36 workshops for health workers, 24 in the second year of the project and 4 annually in the remaining years of project implementation; and 72 additional follow-up workshops to reinforce the first set of workshops, 24 annually beginning in the second year of project implementation. Second, the project would support the development of nutrition-related messages and materials, including mass media campaigns. A professional social marketing firm in consultation with the MOH advisory group on infant feeding would be in charge of nutrition education strategy development and implementation; the experience acquired by MOH in implementing a cholera-related education campaign would be taken into account in designing the campaign. Included among the themes of the campaign would be information on breast-feeding and infant feeding, dietary quality, and hygiene. To support these two activities, special educational materials would be developed by MOH for distribution to the general public.

3. Under this strategy, particular emphasis would be placed on the dissemination of information on appropriate breast-feeding practices to both health personnel and the general population. Although breast-feeding practices in Ecuador are better than in other similar Latin American countries, the general consensus within MOH is that the practice is declining among women within urban areas and in the middle- to high-income groups. The two most important studies on this area are the 1986 Demographic and Health Survey (DHS) and the study supported by Manoff International in 1988. While the DHS study found a high prevalence of mother breast-feeding at one year of age (about 85% of the children), the Manoff study, which is based on a national sample of 132 children, found that less than half of children between 3 and 6 months of age are exclusively breast-fed. The two main factors which negatively affect breast-feeding practices in the country are inadequate hospital practices (e.g., lack of, or inappropriate counseling by health personnel) and the incorporation of women in work activities outside the household. By law, working mothers in urban areas have an eight-week post-partum leave of absence followed by a seven month

period at work when they are supposed to have two hours daily to feed their child. However, this last rule is generally not observed.

4. In order to promote breast-feeding among lactating women, health personnel would be specially trained during the implementation of the training activities indicated on para. 2, and the nutrition-related media campaigns targeted to the general population would include messages on appropriate breast-feeding practices. Additionally, breast-feeding practices of mothers with children aged one, three, and six months would be monitored as part of regular nutritional surveillance in local health facilities.

5. The duration of maternal breast-feeding will also be monitored as part of routine activities in the health service areas' facilities. To this end, information on exclusive breast-feeding at one, four, and six months of age of the child will be recorded. In order to be classified as exclusive breast-fed the child must not have been fed other liquids or solids of any nature (obviously this criteria will be overlooked in cases of acute dehydration, the only occasion when the child may receive other liquids while considered to be exclusively breast-fed). There is international consensus that exclusive breast-feeding during the first six months of life has unquestionable health benefits for both the mother and the child. The proposed monitoring would help identify additional factors that influence breast-feeding practices in Ecuador, particularly among the poor.

6. Growth Monitoring. Growth monitoring, when used to target counselling and other support, is one of the key interventions for improving the health of children. Likewise, monitoring the nutritional status of pregnant and lactating mothers is an essential intervention for identifying beneficiaries of food supplementation programs, and reducing infant mortality. The project, therefore, would focus on strengthening the capability of MOH personnel for growth monitoring and counselling to these target populations. Health personnel would be trained in this skill during the workshops listed above, and be required to routinely monitor children and women as part of the delivery of integrated primary health care services. The project would finance the procurement of scales and measuring tapes, as well as the design and production of growth cards for children and pregnant women. WHO growth monitoring norms would be used to detect malnutrition among children under 3 years of age (defined by weight gain or lack thereof), and the Rosso-Mardones norm would be used to identify malnutrition among pregnant women (i.e., women with weight-for-height under 95% of standard weight at the beginning of the pregnancy and less than 120% of standard weight at the end of the pregnancy are classified as underweight or malnourished). In addition, the project would ensure that the collection, analysis and use of nutrition-related information be compatible with the requirements of the Nutritional Surveillance System (SISVAN), currently being implemented by CONADE with UNICEF support for nationwide monitoring and evaluation of nutritional status (i.e., two standard deviations of weight-for-age would be used as the cutoff to define malnutrition).

7. Relationship between PAAMI and the proposed Food Supplementation Schemes. Ecuador has a history of confronting malnutrition through vertical food supplementation programs. However, these programs, along with the efforts of the NGOs, cover only 20 percent of the target population. Worse still, most of them have a limited nutritional impact on the most vulnerable groups because of deficient administration, the absence of a clear targeting policy, and barriers

to access by the poorest segments of the population. The most important program has been the mother /child food program (PAAMI) under MOH. This program aims to reduce infant malnutrition and improve infant feeding practices. At risk groups are selected based on pregnancy or breastfeeding status of mothers and age of child (6-23 months). Malnourished children between 2 and 5 years of age are evaluated with respect to the third percentile of weight-for-age of the reference standards recommended by WHO. The products distributed under this program are leche-avena, a milk, oats and soy flour mixture and rice. There is a monthly distribution of leche-avena: 2 kg. for children, 3 kg. if malnourished, and 1 kg. for women; and 5 kg. of rice per women. The estimated daily provision of calories is 237 per child (354 if malnourished) and 1936 per women; protein is 13.7 g. per child (20.5 g. if malnourished) and 50.8 g. per women, during 365 days per year. The program also includes growth and development monitoring, nutrition education, immunizations, and ORT. The program's beneficiaries are infants and children, pregnant and lactating women, and malnourished children receiving health services in 20 provinces. Because of financial and management deficiencies, in 1990 PAAMI's coverage was of only 14,888 children, 23,107 malnourished children, and 28,050 women, for a total of 66,045 beneficiaries. In 1989, the food costs/beneficiary were estimated at US\$48 and the overall costs/beneficiary at US\$62. A modern plant owned by MOH produces the above mentioned mixture according to the availability of food commodities. The plant, however, has been operating at an extremely low level of utilization. The operation of PAAMI has been hindered by serious logistical problems in the production and distribution of leche-avena, irregular implementation of program's activities, and poor targeting of beneficiaries. With the creation in 1989 of the National Nutrition Fund (FONNIN), a fund for infant nutrition financed by earmarked taxes, the MOH has assumed the responsibility for purchasing local foods, building storage facilities, and acquiring trucks for transportation.

8. The project would support the establishment of a pilot food supplementation scheme for all children between 6 and 36 months of age and pregnant and lactating women residing in project areas. In supporting this activity, the overall objective would be to evaluate the cost-effectiveness of food supplementation on health services utilization by the poorer segments of the population, who are most at risk of malnutrition, in those facilities where food distribution would take place. To this end, the project would support the undertaking of an evaluation study beginning the third year of project implementation. If the pilot experience is successful, the proposed food supplementation scheme would continue to operate in projects areas and eventually would be replicated in the entire country. Under this scheme, each beneficiary would receive on average 1 kg. of a low cost food product (a mix of powdered milk and corn meal) per month according to a programmed schedule of visits to local health facilities (the estimated cost per beneficiary per year is estimated to be about US\$9.6). During these visits, participants in the food supplementation scheme would receive other services, such as immunizations, early detection and treatment of diseases, and health and nutrition education.

9. In project areas, a targeted food supplementation scheme would be established to substitute for PAAMI in project areas, with the idea of expanding it to the rest of the country. Under this targeted scheme food products would be distributed to those children between the ages of 6 and 36 months and pregnant and lactating women identified as malnourished through routine growth monitoring and evaluation activities in health facilities until they overcome the problem. Once recovered, beneficiaries would graduate from this scheme. It is expected

that this scheme, in project areas, would benefit 20 percent of total pregnant and lactating mothers, as well as 25 percent of total children six to eleven months of age and 30 percent of children one to three years of age, representing approximately 80 percent of pregnant and lactating women, as well as 75 percent of children 6 to 11 months old, and 70 percent of children one to three years of age who are already malnourished. The distribution of these products, like those of the pilot scheme, would take place at local health facilities. The food products involved, which would be distributed six times per year, include: (a) for malnourished pregnant and lactating women, 4 kg. of rice, 2 kg. of beans, 2 kg. of powdered milk and corn meal mix, and 1 liter of oil (the cost per beneficiary per year is estimated to be about US\$33); and (b) for malnourished children under 3 years of age, 3 kg. of powdered milk and corn meal mix, and 1 liter of oil (the cost per beneficiary per year is estimated to be about US\$18.60). This mix of food products is justified by its balanced contribution of nutrients. In addition, therapeutic feeding of malnourished infants under 6 months of age would be included in the basic maternal and child care program. The project would support a study to evaluate the impact of the targeted scheme on the nutritional status of women and children and on health service utilization, as well as the possibility of adjusting the size and/or changing the mix of food products included in the packages, starting on the third year of project implementation.

10. The existing food production plant could play an important role in producing inputs for these schemes if its operation performance improves with measures such as those recommended in the pre-feasibility study prepared by the Government (see para. 20). A registry would be set up by the MOH's Nutrition Division in each facility for monitoring program beneficiaries and for stock control. Effectiveness of the two schemes in achieving their objectives in the project health areas would be closely monitored and studied consistently with the methodologies of the evaluation activities described below.

11. In addition, the project would fund the establishment of a program for the distribution at local health facilities of micronutrients to pregnant women and children between the ages of 6 and 36 months. Feasibility studies would be conducted to determine whether food commodities can be fortified with the necessary micronutrients and to determine whether alternative food stuffs should be included in the food supplementation schemes. It is expected that the studies would be undertaken during the first months of project implementation. If fortification is deemed infeasible, iron, folic acid and vitamin C tablets would be distributed under the project. To monitor anemia status in project areas, the measurement of hematocrit levels in all pregnant women and children under two years of age would be undertaken as part of regular activities at local health facilities. The measurement would take place during the first pre-natal consultation, and it would be repeated before delivery in cases where anemia has been diagnosed. For children under two years of age, one measurement would be undertaken during the second year of life. The proposed project would not support goiter-related interventions since MOH's efforts in this area are already fully supported by the Government of Belgium, nor vitamin A-related interventions because vitamin A deficiency is not a widespread problem in Ecuador.

12. Overall, the procurement of food products and micronutrients would be done, with the assistance of a procurement agent, through contracts with private firms.

13. Issues Related to the Distribution of Food Supplements in Project Areas. The quantity of food supplied under the targeted scheme would take into account the fact that the whole family is nutritionally deficient, and therefore would be large enough to be consumed by the entire family. However, the powdered milk and corn meal mix would be assigned for the exclusive consumption of malnourished beneficiaries. To enhance the likelihood of this in the beneficiaries' household, it would be emphasized in educational activities with the mothers and the community. The caloric needs of this population group were calculated on the basis of a program in Chile which had a substantial impact on birth weight. Under the Chilean program poor women defined as underweight, who had on average two children per family, were given half the amount of calories which the targeted scheme would supply. Given that the average number of children per women in rural areas is 5.5, it is expected that twice the Chilean amount of calories would be sufficient.

14. The possibility that the food distributed by the targeted scheme might be sold or exchanged for other goods and not consumed by the beneficiaries was examined. According to national authorities, in the 14 years of PAAMI history this has not been a common occurrence. Furthermore, formal evaluations conducted with international support, as well as informal evaluations carried out by health teams during home visits, have categorically concluded that distributed food is mainly consumed by beneficiaries.

15. Another possible problem is that beneficiaries of the targeted scheme may contaminate the foods due to a lack of access to safe water and latrines, particularly in rural areas. However, this problem would be alleviated by the inclusion of a basic sanitation and safe water component in the project, as well as by health and nutrition education campaigns.

16. As to the possibility that the food delivery by the targeted scheme would negatively affect breast-feeding practices, it must be noted that none of the foods distributed to breast-feeding mothers is tolerated by a child under six months of age. Thus, breast-feeding would not be discouraged.

17. Evaluation Studies of the Food Supplementation Schemes. The evaluation of the targeted food supplementation scheme would be undertaken beginning in the second year of project implementation by which time it should be smoothly operating. In order to simplify and reduce the costs of the study it would focus only on pregnant women. The study would compare maternal weight changes during pregnancy, and birth weight of the newborns, among beneficiaries and non-beneficiaries. To achieve results with significant differences the cohorts would include 500 women each. Study participants would have similar characteristics. For example, they must have a weight/for height that would classify them as underweight according to the Rosso-Mardones curve; be in the same age group; be non smokers; and not have any of the pregnancy conditions or complications that could affect fetal growth. Data will be gathered from socio-economic surveys, as well as from three home surveys during which nutritional-related information would be collected. The third home visit should take place around child birth to allow for collection of information on weight at birth in the case of women who did not have an institutional delivery. Chronic acceptability of the food products to be distributed under this scheme would also be assessed during the home visits. Evaluation of the data by computer will include the use of multivariate analysis to make adjustments for possible

differences between the groups. The cost of the evaluation study will be approximately US\$141,000.

18. The project would also support a study to evaluate the cost-effectiveness of the pilot scheme on health services utilization and its impact on health and nutritional status of beneficiary groups. This study would start at the third year of project implementation, in order to allow enough time to observe possible changes on health services utilization. This study would be based on data generated by a national LSMS survey to be carried out during project implementation (see Annex 10-1). The estimated cost for this study is US \$40,000.

19. Reforms in the Management and Operation of the MOH's Food Production Plant. Recently, proposals have been put forward for increasing the involvement of the private sector in the management and operation of the MOH's food production plant. One proposed option is to transform the plant into a mixed enterprise. Another option is to make the plant a privately owned enterprise. On the basis of these proposals, during project implementation the Government would undertake measures to involve the private sector in operating the food production plant.

BASIC SANITATION AND SAFE WATER *Second Social Development Project, Ecuador*

PRINCIPLES GOVERNING THE BASIC SANITATION COMPONENT

The water and sanitation sector in Ecuador has been characterized by poor organization and implementation capacity coupled with inadequate financing to meet effective demand in rural areas. In order to address these problems, the Basic Sanitation and Safe Water component of the Second Social Development Project proposes to decentralize many of the key activities to the provincial level and encourage a high degree of community participation. Furthermore, the cost-effectiveness and affordability of investment will be increased by providing low-cost technologies which will also serve to facilitate community-level operation and maintenance functions. Accordingly, the design of this component will be governed by the following principles:

Decentralized Execution: The funds for the execution of this component will flow from the Project Coordination Unit directly to the entities at the Provincial level which will be responsible for implementation (except to the extent a procurement agent is involved).

Application of Technologies: Until now, only one technological model has been applied in Ecuador for rural water supply: various types of water capture structures (spring captures, bored wells), a pipe to bring the water to a storage tank, a treatment system, a distribution network, and individual plot or house connections. This model, because of its design characteristics, technology, construction methods, accessories, equipment, and other inputs, has proven to be too expensive for the majority of rural communities, in terms of both construction cost per capita and costs of operation, maintenance, and repairs. In this project, a variety of technological solutions will be used for water supply and sanitation. The selection of the appropriate solution for each community will be made on the basis of the following criteria:

- Technical feasibility.
- Investment cost and the capacity of the users to contribute at least 30% of this cost.
- Costs of operation, maintenance, and depreciation, and the capacity of the users to cover 100% of these costs through monthly tariffs and/or other contributions.
- Active participation of the users in the evaluation of the technological options and in the final selection.

In this component, a wide variety of options which provide different levels of service will be applied, in accordance with the

capacity and willingness to pay of the users. Details on the various levels of service and design parameters appear in Annex 9.1.

Cost Recovery: For water supply solutions, the users will be expected to contribute at least 30% of the investment cost in the form of cash, labor, and/or local materials. Based on preliminary cost estimations and available data on incomes, this is considered to be a reasonable figure. In all the communities in which the users have a capacity to pay in cash, an effort will be made to obtain a contribution in this form, in order to promote a greater sense of responsibility for the facilities on the part of the users. The users in communities that elect water supply systems with plot or house connections will be required to contribute 30% of the cost of a system with public communal standpipes plus pay, in cash, the full cost of the house connection with meter (perhaps spread out in a payment schedule to make it affordable). It will be necessary to assess whether these payments could be channeled into the establishment of local rotating funds for future investments in the expansion of service coverage (this may require a change in the existing Regulation on Local Committees (Juntas) for Administration of Water Supply Systems). For latrines, the contribution of the users will be a minimum of 50% of the total cost. In general, the project would finance the slab, the bowl, tubing, and, where needed, the materials to line the pit(s), while the user would provide the digging of the pit(s) and the enclosure.

Selection of Communities and Effective Demand: Annex 9.2 presents the selection criteria for communities which will be included in the project. Communities will only pre-qualify if they are within the areas and phasing covered by the Health component and have populations of between 250 and 2,000 inhabitants. A ranked short list will then be compiled by applying a series of five criteria. In order of priority, these are: selecting a representative range of rural communities; selecting communities by size (in favor of smaller populations); selecting communities according to their health priorities; verifying key criteria in the field (including reasonable access to a suitable water source); and an evaluation of effective demand for water and sanitation services. The last of these selection criteria will determine if water and sanitation are true priorities for the community and, if so, what the affordable service level is.

Community Participation in the Planning and Selection of Technologies: Experience in many countries shows that the active participation of the community in the planning of the project and in the selection of the technology is necessary to guarantee that the users take responsibility for the maintenance of the facilities. The project should be structured to assure that this early community participation process, with true decision-making involvement of the community, is carried out.

Organization of the Community: The existing Law and Regulation governing the community-level Committees (Juntas) for

Administration of Water Supply systems authorizes IEOS to form and support Juntas in rural communities.

Operation and Maintenance: One of the highest priorities of this component will be to improve the various factors which are necessary to guarantee the sustainability of the services. The active participation of the community in the pre-construction phase has already been mentioned. In addition, emphasis will be given to the following points:

- **Support to the community organization:** The performance of the Juntas is currently very deficient. This is due in large part to inadequate formation and training at the outset, as well as lack of follow-up support, on the part of IEOS. The project will establish new modes and procedures for assuring the satisfactory performance of the community administrative organizations.
- **Tariffs:** According to a recent evaluation study of 197 water systems constructed by IEOS (S. Rivadeneira, 1992), the prevailing tariffs cover a maximum of 20% of the real costs of operation, maintenance, and depreciation in the systems that are more than five years old and 60% of these costs in the systems that are less than five years old. This situation is due to various factors: the maintenance of a paternalistic relationship between IEOS and the users; the application of technologies that are too expensive; a lack of effective promotion, orientation, and training; and a lack of sustained follow-up support. One of the biggest challenges facing the project is the imposition of a tariff regime that will guarantee 100% coverage of the recurrent costs and depreciation. This can be achieved through the utilization of technological solutions compatible with the income levels of the users and an effective process of participatory promotion.

Health Education: The provision of water and sanitation facilities will be accompanied in all cases by a series of educational activities directed to the users and designed to assure the effective use of the facilities and achieve changes in behavior related to domestic water use and excreta disposal. The health education activities will be initiated during the promotion period before construction and will continue after the facilities are installed.

Socio-Cultural Variations: The need to take into account socio-cultural variations among the regions of the country is recognized. These variations have substantial influence on issues such as community participation, the organization of the users, forms of payment and other contributions for services, and modalities of promotion and education.

Role of Women: In recognition of the fact that women are usually the principal beneficiaries of improvements in domestic water

supply services and have a predominant influence on family hygiene, the project will develop methods to assure the active participation of women in planning, organization, implementation, operation, and evaluation of basic sanitation services.

STRATEGY AND PROGRAMS

The basic sanitation component of the project is directed to the rural population. Although its general goal is to increase the coverage and improve the quality of rural water and sanitation services, its main objective is to improve the institutional capacity for provision of basic sanitation services within the framework of an integrated concept emphasizing the sustainability and the effective use of facilities. The implementation program of this component will follow, to the extent possible, that of the larger health project.

This component is conceived as a pilot project. The basic strategy will be to test various implementation models for the provision of basic sanitation services in six provinces.

The implementation period of the component is divided into two stages. The first stage, lasting three years, will be devoted to testing four implementation models. Annex 9.3 presents a summary of these models. At the end of the first stage, an evaluation will be carried out of the experience, which will provide a basis for a reformulation of the decentralized implementation mechanism for the subsector. The conclusions will be applied to (1) the continuation of the component within this project for one more year (second stage) and (2) the preparation of a new rural water and sanitation project at a large scale which could be financed in part through another World Bank loan.

The details of the organizational structure and of the implementation models are presented in section 5 below.

The basic sanitation component consists of nine programs:

1. Construction of New Water Supply Systems

New water supply systems will be constructed for a total of approximately 138,400 people during the four years of the component. The following levels of service will be applied:

- (a) Communities of 250 to 1,000 inhabitants: Improved wells, handpumps, and simple gravity systems with communal standpipes.
- (b) Communities of 1,000 to 2,000 inhabitants: Gravity systems, wells with submersible pumps, and in some cases systems abstracting water by pump from surface sources; all these with distribution networks connected to communal taps or yard/house connections.

For the estimation of overall investment costs and the preparation of designs, seven technological options have been established representing a wide range of levels of service, with construction costs per capita that vary from US\$ 16 to US\$ 84 (see Annex 9.4).

Design parameters appropriate for the different levels of service have been established (Annex 9.1) and prototype designs for each technological option have been prepared.

2. Upgrading of Existing Water Systems

According to the previously cited study of water systems constructed by IEOS, approximately 40% of the systems built in the previous five years have suffered a serious breakdown in more than three of their seven components. This program will finance upgrading of water systems for an estimated 33,600 persons, at an average cost of around US\$20 per capita. The principal target of this component will be those systems in which a modest investment can produce a substantial increase in the quality of service, in terms of the capture of water from the source, the distribution, or the quality of the water itself.

All communities wishing to participate in the upgrading program will have to accept, as a condition of inclusion, the imposition of a new tariff structure sufficient to cover 100% of the costs of operation, maintenance, and depreciation. This implies that the upgrading program will require the same degree of up-front community promotion and organization as the program for new water supplies.

Before implementing this program, various prototype designs will be prepared, with their respective costs.

3. Latrines

The project will support the construction of latrines for the families that will participate in program 1 (new water supplies). It is estimated that about 27,500 latrines will be built, at an average cost of US\$12 per capita (US\$60 per family). Prototype designs and costs have been prepared for VIP (ventilated improved pit) and manual discharge water seal latrines, with provisions for different types of soil conditions.

4. Operation and Maintenance

As indicated previously, the total costs of operation, maintenance, and replacement of equipment of the water systems will be covered by the tariffs paid by the users.

The project will finance the establishment of Provincial Maintenance Centers ("Talleres") in each of the six provinces covered. Each Center will be provided initially with a stock of replacement parts for the various types of water supply facilities. The Centers will sell the parts to the community water committees on a non-profit basis. The Centers will also provide repair

services for major problems on a cost recovery basis. Cost estimation for this program is based on the initial provision to each center of a stock of parts equal to one year of depreciation of the capital invested by the project (assuming that the useful life of water and sanitation facilities is 20 years on average), plus about \$12,000 to build the structure for each Center. The Centers will be managed by contractors and will be subject to annual evaluations and audits.

The community water committees will receive intensive training and technical assistance during the promotion and construction phases. Each committee will have an internal regulation approved by the users. Before the start of implementation, a plan will be devised for establishing in each committee the capacity for managing routine maintenance and repairs. This plan will be carried out by the provincial promotion, technical support, and training teams.

Each community water committee will have to sign an agreement with the provincial executing agency committing itself to fixing and maintaining adequate tariffs. The financial management of the committees will be monitored by a special team within the provincial executing agency. The committees will receive sustained technical assistance in all aspects of financial management and maintenance.

5. Coordination and Execution

Because there has been very limited experience in Ecuador with alternative organizational schemes for providing rural water and sanitation services, a variety of decentralized, provincial-level institutional arrangements will be tested during the first stage of implementation (three years) of the component. This gives the component its character as a pilot project. Implementation activities will be assigned to various governmental, non-governmental, regional, or community organizations. The chart attached as Annex 9.3 summarizes the distribution of functions within each of the four proposed models. These range from a high level of involvement and responsibility for the Provincial Directorates of IEOS to a diminishment of their conventional role in favor of the Provincial Council, NGOs, and the community. On completion of the pilot period, the application of the four models will be rigorously evaluated and a synthesis of the experience will be formulated for future implementation. The new "model" would be used in the remaining year of this component and would serve as the basis for preparing a new rural water and sanitation project on a large scale.

In Model 1, the staff of the IEOS Provincial Directorate directly executes the majority of the tasks, except studies, construction, and auditing, which are contracted out to private enterprise. This model will be applied in the provinces of Azuay and Pichincha. In Model 2, the Provincial Directorate of IEOS coordinates but does not execute directly. Most tasks are subcontracted to NGOs, private enterprise, and other local entities. Model 2 will be applied in the province of Loja. Model 3 is similar to Model 2,

with the difference that a global subcontract is made with an NGO for the implementation of an integrated program. This model will be tested in Chimborazo. In Model 4, the responsible entity is the Provincial Council or another regional governmental entity; IEOS provides technical assistance; execution of specific tasks is through subcontracts. Model 4 will be applied in the province of Manabí, with the *Centro de Rehabilitación de Manabí* as the implementing agency, and in Guayas, where the *Provincial Health Directorate* will take this role.

Annex 9.5 presents the coordination and execution arrangements for the basic sanitation component.

The component will be headed by a Coordinator who will be part of the Project Coordinating Unit of the Health Project. The Coordinator of Basic Sanitation will be supported by the administrative personnel of the Coordination Unit. The Coordinator will be able to contract a purchasing agent for procurement of equipment or services as well as consultants for project works and supervision or support in coordination at the local level.

Parallel to the above, an institutional study of the entire rural water and sanitation sector will be carried out, focusing on IEOS. This will prepare specific recommendations to the government oriented to significantly transforming public sector management in this subsector, away from direct implementation and toward efficient and effective coordination, supervision, facilitation, and accountability.

Contracting in the basic sanitation component will be effected directly at the provincial level, except for multi-provincial or large-scale activities above the threshold for use of comparison of price quotations by a procurement method, which will be handled by the Project Coordinating Unit with the assistance of a procurement agent. Disbursements will be made directly by the PCU to the responsible entities at the provincial level (except to the extent a procurement agent is involved). It will be necessary to prepare manuals for financial administration and contracting for this component, consistent with procedures established for the Health Project as a whole.

An Advisory Committee for Basic Sanitation will be established, composed of officials of IEOS, representatives of the Ministries of Health, Social Welfare, and Government, and a representative of CONADE. This Committee will meet periodically to review the results of the component's implementation and provide recommendations on the utilization of the experience for the development of new policies, strategies, and institutional arrangements.

The Coordinator of Basic Sanitation will be supported by a technical assistance team composed of international and national professionals.

6. Technical Assistance and Training

The technical assistance program will be composed of a long-term resident senior adviser in basic sanitation for an initial period of three years (with the possibility of continuation); international experts with short or medium term assignments; and national consultants. The technical assistance team will work at the central and provincial levels, in accordance with a work plan to be developed at the start of the project. The experts and consultants will provide support in the development of policies, strategies, operating procedures, and materials in the areas of institutional strengthening, design standards, technologies, community promotion, health education, community organization, operation and maintenance, and sustainability of services. The estimated budget for the technical assistance program is US\$1.45 million during four years.

The training program will have the following objectives:

- (a) Provide initial training for the staff of the provincial executing agencies in all aspects of the component. Special emphasis will be given to training field staff in the utilization of participatory methods of promotion, organization, health education, monitoring, and evaluation.
- (b) Carry out various types of continuous training, according to a training plan which will be developed at the start of the project. This plan will include the utilization of specialized organizations in the country for both formal and on-the-job training ("horizontal cooperation"), the implementation of courses and workshops, and the attendance by national personnel at courses and conferences abroad.

It is estimated that the total cost of the training program will be US\$720,000 over the five years of the component.

7. Studies

Three studies will be carried out, all initiated at the start of the project and completed within a six-month period:

Institutional Restructuring of the Rural Water and Sanitation Subsector: The objective of this study is to present, to the new government that will take office in the latter part of 1992, recommendations on transforming the public sector's role and performance in the subsector. The study will focus on an institutional restructuring scheme oriented to taking the public sector out of most direct implementation and strengthening its role in efficient and effective coordination, supervision, and facilitation of the provision of services. The study will be initiated at the beginning of the project and will be carried out in six months. It will use not only technical analysis methods, but also a highly

participatory process of consultation with various groups involved in the subsector (seminars, workshops, etc.). It will be a condition of the project contract that this study be executed, that the government take its results into account and that the government take appropriate actions to implement its recommendations. (Maximum estimated budget \$100,000).

National Inventory of Basic Sanitation: The project will finance the preparation of a national inventory of rural communities and basic sanitation services in the six provinces covered in the component. The objective will be to obtain a complete data base on rural sanitation services, covering types of facilities, number of persons served, state of the facilities, quality of services, functioning of the Juntas, etc. It is understood that USAID and KfW will finance the inventory in the other provinces. It will be necessary for the government to coordinate among IEOS, USAID, and KfW to fix the terms of reference, the financing plan, and management plan of the inventory. It is foreseen that the inventory can be completed during the first year of the project, so as to permit the results to be used to assist in work planning for the basic sanitation component. (Estimated budget \$350,000).

Cost Recovery from Users: This consists of (1) a general study, based on a survey, of income levels and capacity/willingness to pay on the part of rural inhabitants for water and sanitation services and (2) the preparation of a simple methodology to be used by promoters in the field for evaluating willingness/ capacity to pay at the community level. (Maximum estimated budget \$100,000).

8. Equipment and Materials

For the execution of this component it will be necessary to acquire the following equipment: two four-wheel drive vehicles for each province (total of 12, \$312,000); six motorcycles for each province (total of 36, \$94,000); one computer with printer for each province plus one for the central office (total of seven, \$14,000); additional office equipment, e.g. photocopy machines, telephones, etc. (\$10,000 per province); and minor technical equipment (total of \$20,000). The estimated total is \$500,000.

9. Monitoring and Evaluation

A series of quantifiable milestones will be built into the project's work plan. These will enable frequent and meaningful assessments to be conducted of the progress of the component. Since this experience will serve as a model for other rural projects and for scaling up, it is considered essential that good records be kept, both at the provincial and central levels. Computers will be supplied to each implementation unit in order to facilitate information storage and analysis. These will be equipped with data bases capable of tracking project statistics including demographic, health, and education data for each community. The technical assistance team will use these data to

synthesize and distill the lessons learned from each province. Based on this analysis the team will also disseminate successful approaches and develop a preferred strategy for general application in the second stage of the project. A mid-term review will also be carried out to evaluate the success of the various alternatives and determine the procedures under which the activities will continue.

COORDINATION WITH OTHER PROJECTS

It will be necessary to develop a coordination and collaboration plan with the WASHED project of USAID. This project has been working to strengthen the capacity of IEOS in rural basic sanitation since mid 1990, and it still has at least two years of execution left. WASHED, working in eight provinces, has tried to improve Model 1 within the typology described above. The new Bank-supported component should take advantage of the lessons of experience of USAID. The interim evaluation of WASHED expected in April 1992 will provide an opportunity to modify the latter project so as to maximize the impact of a joint effort with the Bank-supported project. This component proposes to work in three of the provinces covered by WASHED.

In addition, it will be beneficial to study the potential to coordinate with the PROANDES project of UNICEF. PROANDES started in 1990, has a budget of US\$5 million, and covers six provinces. About \$2 million of the budget is devoted to water and sanitation.

IMPLEMENTATION PROGRAM AND COST SUMMARY

Annex 9.6 presents the implementation schedule for the basic sanitation component, with the number of communities and persons to be served each year, by province. Annex 9.7 presents the annual costs of each program within the component.

TECHNICAL OPTIONS FOR WATER AND SANITATION PROJECTS *Second Social Development Project, Ecuador*

Concept

In order to address the needs of the lower-income dispersed rural communities appropriate levels of water and sanitation services are to be provided. Communities with populations between 250 and 2,000 inhabitants will qualify for inclusion in the project. Prioritization of the qualifying communities will be ascertained by a census study which will provide an index based on a series of health, demographic, demand and 'willingness-to-contribute' factors. However, projects will only be undertaken where sufficient demand for water and sanitation services is demonstrated by the community.

Design Parameters

The design population for each water project is to be the estimated population of the community 10 years from the expected completion date. In the absence of actual population growth rates an average annual rate of 1.8% is to be applied to the current rural population. Peak flow rates are to be based on a consumption level of 30 l/s for public standpipes and 80 l/s for house connections. Distribution networks are to be sized on the basis of 100% house-connections and storage tanks must provide 24 hours of flow capacity. Selected sources must be capable of supplying water at a sustained daily rate at least equal to half of the maximum daily demand.

Considering the low-cost solutions employed, the design period for each water and sanitation project will be 10 years. Where more conventional designs are employed the design period may be doubled to 20 years. However, the useful life of all electrical equipment is limited to 5 years.

Service Levels

Following education and orientation by project promoters each community is to be given a choice of service levels for their water systems. The basic level of service will comprise a public standpipe to serve a maximum of 20 families each. However, if users request house connections they should be charged the full incremental cost of installing the 13mm branch pipe and a flow meter (*el derecho de conección*). This payment could be reduced by users providing the materials and labor for excavations.

Various prototype designs will be available to the communities, these are all to be tested and optimized before the commencement of the project:

- (a) Communities with design populations between 250 and 1,000 inhabitants will utilize one of the following systems:
- (i) Protected wells with handpumps
 - (ii) Simple gravity systems with public standpipes
 - (iii) Enhancements to either of these systems according to the community's capacity
- (b) Communities with design populations over 1,000 inhabitants will utilize one of the following systems:
- (i) Deep wells with submersible pumps
 - (ii) Gravity systems with public standpipes and/or house connections
 - (iii) Pumped systems from streams and rivers with simple treatment works (especially for iron removal) - although wherever possible, this option will be avoided in favor of systems that utilize water sources that do not require treatment.

Each community is to provide a minimum of 30% of the total investment costs of the installed water system. They will be expected to contribute this proportion in a combination of unskilled labor (in supervised "mingas"), local materials and cash.

Water Treatment

Water systems that utilize "safe" sources (such as spring-capture and deep-wells) are unlikely to need treatment. However, every water source must be thoroughly examined for biological and mineral contaminants before excluding treatment. Furthermore, these sources will need particular attention with continuous and regular monitoring to ensure that the water quality is not deteriorating.

Where there is any doubt about the current (or future) quality of the water source, chlorination facilities will be provided. However, present methods for automatic chlorine-dosing are generally too expensive or inappropriate for application in rural areas. Therefore, efforts will be made to ensure that installed chlorinators are effective, sustainable and appropriate to the community's requirements. Regular follow-up by promoters will also be necessary to ensure that the community's Junta is instructed in the importance and correct usage of the chlorinator.

Other treatment processes are to be avoided wherever possible since these invariably demand high levels of operation and maintenance costs. But if deemed necessary these processes should follow the principles of low-cost, low-maintenance technologies. Iron-salts are particularly problematic in the shallow aquifers of the coastal region and these must be removed to produce an acceptable water quality. Accordingly, simple aerator cascades and settling tanks will be installed to promote precipitation of the oxidized salts.

Latrines

The "Ventilated Improved Pit (VIP) Latrine" is to be used as the general country model. Variations in materials will be permitted and encouraged to suit the availability of local resources. For instance, the pour-flush model may be substituted to provide a water-seal, but this may only be appropriate where there is an adequate and continuous water supply.

Before the installation of latrines, each community must first participate in an organized program of hygiene and sanitation education with health-care promoters. The community should then be involved in all stages of the selection of technologies, location of latrines and their construction. Each family will be expected to contribute a minimum of 50% toward the cost of their latrine. In practice, this is expected to be all of the labor costs for digging the pit(s) and assembling the structure.

The design of the VIP latrine may need to be adapted in areas where local conditions are not favorable to a simple soakaway pit. For instance, the presence of a high water table may require that a sealed pit be provided and a means for safely draining away the effluent. This precaution is particularly important where there is danger of contaminating the water source. However, each case will have to be determined individually and the solutions proposed should follow the principles of low-cost, low-maintenance technologies.

Costs

An average of US\$ 25 per capita is to be applied to low-cost water systems for calculations of investment costs. This figure may rise to US\$ 50 per capita for larger, more conventional systems. However, it is planned that approximately four times as many low-cost systems will be constructed than high-cost systems. Latrines are to be costed at an average of US\$ 60 per unit.

In accordance with the preceding parameters, a set of standard designs, and their associated costs, will be developed for the basic rural water systems and latrines.

CRITERIA AND PROCEDURES FOR SELECTION OF COMMUNITIES

Second Social Development Project, Ecuador

The selection of rural communities for inclusion in the Basic Sanitation component will adhere to a strict set of qualifying criteria. Each community considered will need to meet the following threshold criteria before an appropriate water project can be evaluated:

- (i) Only areas covered by the Health component of the project are to be considered
- (ii) Phasing of the water supply projects should match, as closely as is practical, that of the Health projects
- (iii) Only communities of between 250 and 2,000 inhabitants are to be considered. Although, smaller and more-dispersed communities may be included at a later stage

This is expected to yield about 700 candidate communities in the six provinces of focus. A selection process must then be applied to each of these communities in order to generate a short-list in order of preference and urgency. This process must eliminate communities where the local conditions are unfavorable and provide a ranking for communities which meet minimum implementation criteria. The following five criteria demand that key social and physical characteristics be examined in order to provide the means for prioritizing the projects:

1. A Representative Range of Communities: Since this component is characterized as a pilot study it will be important to obtain a representative sample of rural communities. A preliminary selection will be made to include a wide range of communities in terms of size and socio-economic levels, using available information to develop indicators of income, potential growth and accessibility.
2. Size of the Community: Within the threshold population range, two service levels can be identified. The majority of rural communities fall into the range of 250 to 1,000 inhabitants, they are generally disperse and seldom developed. Consequently, the project will favor this lower range of populations in a ratio of about four to one, as compared to the upper range of 1,000 to 2,000 inhabitants.
3. Community Health: Each area of activity in the six provinces has already been prioritized by the Health Project in terms of their high incidence of health problems, particularly gastro-enteric diseases such as diarrhea and cholera. An examination of local conditions, in terms of the incidence of water-related diseases, will allow a more detailed ranking of the qualifying communities in order of urgency.

4. **Field Verification:** Visits will be made to the communities selected in Criterion 3 to verify the population size and the socio-economic level. In addition, this visit will be used to confirm that the community does not have an existing water supply system and to determine that there is a reasonably accessible and suitable water source available (in order to eliminate non-typical situations which would have to be treated as special cases in a future program). See Box 1 below for practical limits applied to water source accessibility.
5. **Demand:** During the Field Verification visit or in a subsequent visit, a participatory assessment will be carried out of the demand for water and sanitation services, refer to Box 2 for . This process will comprise four steps:
- (i) A representative group of people from the community will be gathered and a brief explanation given to them of the objectives of the project and the need to consult with them on the possibility of including their community in it.
 - (ii) If there exists an interest in proceeding further, the group will be assisted in carrying out a "self-diagnosis" to determine if water and sanitation are high priorities within the community as compared to other perceived needs.
 - (iii) If the previous step confirms that water and sanitation are considered to be high priorities, an analysis of incomes and ability and willingness to pay will be carried out. Before starting this process, however, an explanation will be given to the community on the conditions governing the project, especially regarding cost recovery and the requirement that they form a community organization to administer and manage the water supply facilities.
 - (iv) The community's willingness to pay will finally be double-checked against the affordability and appropriateness of the seven technical options proposed (see Annex 9-4).

BOX 1: WATER SOURCE ACCESSIBILITY

In general, the following physical limits will be applied when selecting communities for water supply projects:

- | | |
|--------------------------|---|
| GRAVITY SUPPLIES: | Water sources are to be within 1.5 kilometres of the center of the community |
| PUMPED SUPPLIES: | Boreholes to be drilled to a maximum depth of 60 metres
Pressure pipelines are not to exceed 1 kilometre length
Elevated tanks are not to exceed 20 metres height |

BOX 2: EVALUATION OF DEMAND

Methodology: For the second and third steps outlined above, participatory methods will be used based on the concept of "focal groups". The collection of the necessary information takes place through a process of guided discussion (similar to a workshop) with the members of the community group. Accordingly, a trained "facilitator" will conduct an interactive group process consisting of a series of structured activities and materials. The groups should be generally representative of the population of the community in terms of age and sex. It is very important to ensure that women are well represented.

For the "community self diagnosis", methodologies exist that can be adapted and applied to this situation. With respect to the determination of incomes, a series of questions should be posed which will guide the discussion towards this topic. The objective is to determine, above all, the monthly incomes in cash, the variations of such incomes from month to month during the year, and the degree of homogeneity or heterogeneity of incomes within the community. A marked heterogeneity in incomes will make the implementation of a cost recovery system more difficult.

For the analysis of ability and willingness to pay, it will be necessary to prepare a series of posters showing each of the technical options for water and sanitation, with their respective payment requirements per family: initial contribution (30% of investment cost) and monthly tariff for operation, maintenance, and replacement of parts. The procedure to be followed with the group is: (1) select the level of service that appears most appropriate as a starting point, (2) show the corresponding poster and ask whether the group members are willing to contribute the indicated amounts for that option, (3) respond to questions and guide the discussion on capacity and willingness to pay for the first option, (4) if the consensus of the group on the first option is negative, determine if they prefer a less costly option or a higher level of service with higher costs, and show the next corresponding poster, initiating a new round of discussions, (5) repeat the number of times necessary until it is established that there is an agreement within the group on the willingness to pay for one of the options, or that there is no agreement on any of the options.

Personnel: To carry out this process successfully, it is desirable to have two people: a facilitator trained in the management of participatory group sessions and an engineer or technician who can answer technical questions.

Follow-Up: After the initial meeting, a collection of materials should be left with the community which the people can discuss among themselves. These should include:

- Copies of the posters of the technical options.
- Information on the project in general.
- Information on the "rules of the game" regarding cost recovery and community management of water systems.
- Information on what are the next steps the community should take to formalize its participation in the project - typically, forming a *Junta de Administración* and establishing mechanisms for the community's contribution to the project costs.

PROVINCIAL LEVEL IMPLEMENTATION MODELS FOR RURAL WATER AND SANITATION
Second Social Development Project, Ecuador

MODEL	RESPONSIBLE AND COORDINATING ENTITY	PROMOTION AND SELECTION OF COMMUNITIES	INITIAL SANITARY EDUCATION	FORMATION OF COMMUNITY ORGANIZATIONS	STUDIES AND DESIGNS	CONSTRUCTION OF THE WORKS	SUPERVISION OF THE WORKS	AUDIT OF THE WORKS	CONTINUOUS SUPPORT FOR ADMINISTRATION AND O&M	CONTINUOUS SANITARY EDUCATION
1	IEOS	IEOS	IEOS MOH MOE	IEOS	PRIVATE Co. NGO IEOS	PRIVATE Co. and COMMUNITY	IEOS	PRIVATE Co.	IEOS	MOH MOE NGO
2	IEOS	NGO	NGO MOH MOE	NGO	PRIVATE Co. NGO IEOS	PRIVATE Co. and COMMUNITY	IEOS	PRIVATE Co.	IEOS (NGO Assistance)	MOH MOE NGO
3	IEOS	NGO						PRIVATE Co.	IEOS (NGO Assistance)	MOH MOE NGO
4	PROVINCIAL COUNCILS OR REGIONAL GOVERNMENT BODIES	NGO	NGO Local Groups MOH MOE	NGO	PRIVATE Co. (IEOS for Technical Assistance)	PRIVATE Co. and COMMUNITY	IEOS	PRIVATE Co.	IEOS (NGO Assistance)	MOH MOE NGO
	IFOS: Technical Support and Follow-Up									

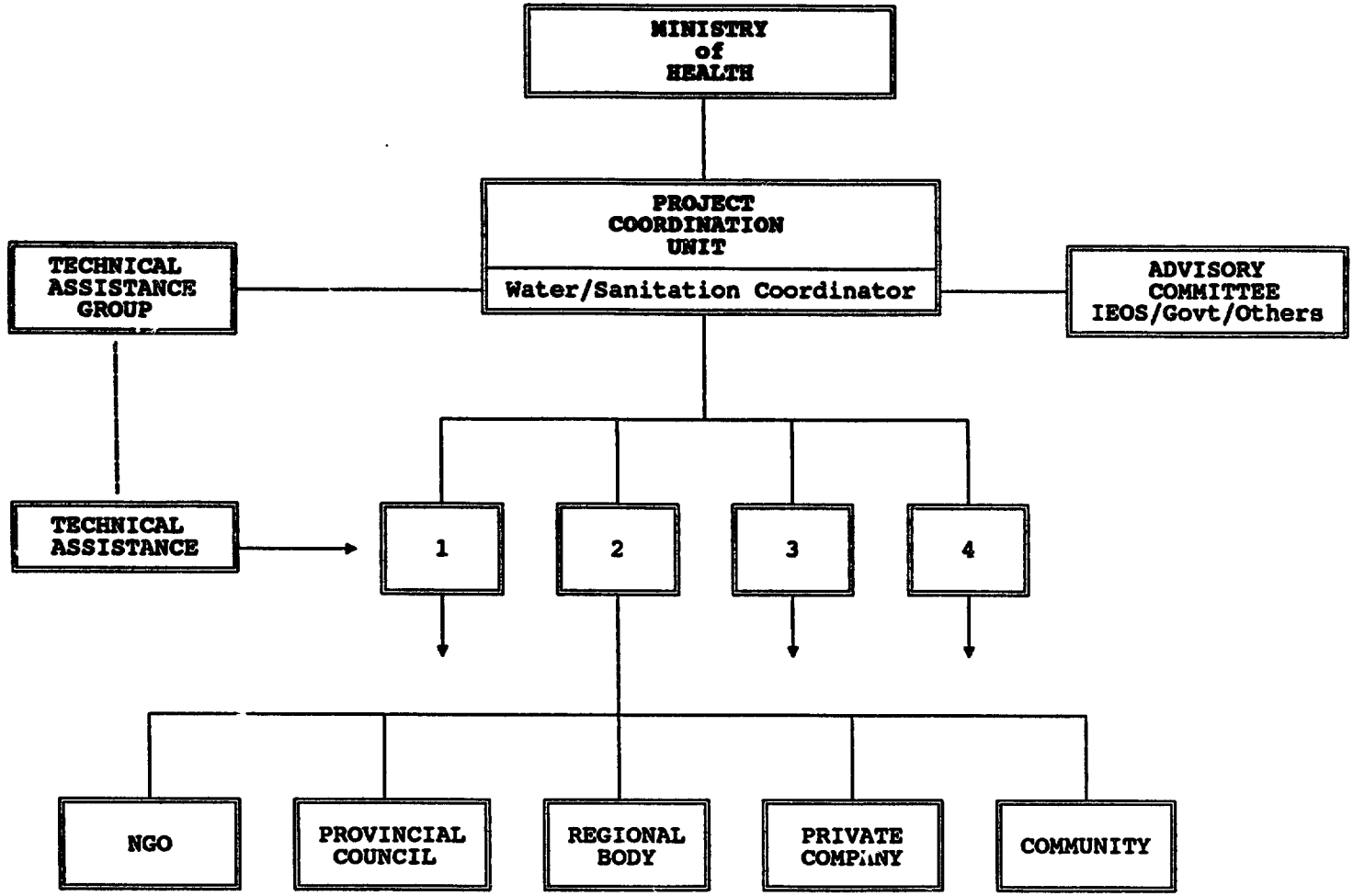
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SERVICE LEVELS AND COSTS FOR THE BASIC SANITATION COMPONENT
Second Social Development Project, Ecuador

TECHNOLOGICAL OPTION (with Costs per Capita in US\$)		POPULATION of the COMMUNITY								
		250 - 500			500 - 1,000			1,000 - 2,000		
		Const- ruction	O y M	Replac- ment	Const- ruction	O y M	Replac- ment	Const- ruction	O y M	Replac- ment
A	HANDPUMPS (1 pump/10 houses)	16	0.03	0.003						
B	COMMUNAL UNIT Gravity System	35	0.09	0.009	35	0.09	0.009			
C	COMMUNAL UNIT Pumped System	41	0.10	0.010	41	0.10	0.010			
D	PUBLIC STANDPIPES Gravity System	37	0.08	0.008	37	0.08	0.008	37	0.08	0.008
E	PUBLIC STANDPIPES Pumped System				42	0.15	0.015	42	0.15	0.015
F	HOUSE CONNECTIONS Gravity System				60	0.40	0.04	60	0.40	0.04
G	HOUSE CONNECTIONS Pumped System							84	0.60	0.06

DECENTRALIZED STRUCTURE OF THE RURAL SANITATION AND SAFE WATER COMPONENT

Second Social Development Project, Ecuador



GENERAL
SYNTHESIS
AND
DISSEMINATION
FUNCTIONS

PROVINCIAL
DIRECTORATE
OF IEOS

LOCALLY-
CONTRACTED
RESOURCES

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CHRONOGRAM FOR THE BASIC SANITATION COMPONENT
Second Social Development Project, Ecuador

PROVINCE		NEW WATER SYSTEMS and LATRINES / YEAR				
		1	2	3	4	Total
1	AZUAY	6	10	6	7	29
2	CHIMBORAZO	7	13	5	5	30
3	MANABI	7	11	9	9	36
4	GUAYAS	-	7	10	9	26
5	LOJA	-	6	9	9	24
6	PICHINCHA	-	6	7	7	20

UPGRADED WATER SYSTEMS / YEAR				
1	2	3	4	Total
2	3	3	1	9
1	2	2	1	6
1	2	2	1	6
1	2	2	2	7
2	2	3	1	8
1	2	2	1	6

Total No. of Projects	20	53	46	46	165
Population Served	17,600	44,000	38,400	38,400	138,400

8	13	14	7	42
6,400	10,400	11,200	5,600	33,600

PROGRAM		COSTS / YEAR (1992 US\$ x 1,000)				
		1	2	3	4	Total
1	NEW WATER SUPPLY SYSTEMS	749.60	1,337.40	1,446.40	1,446.40	4,980.00
2	UPGRADING WATER SYSTEMS	128.00	208.00	224.00	112.00	672.00
3	LATRINES	211.20	528.00	460.80	460.80	1,660.80
TOTAL COSTS		1,088.80	2,073.60	2,131.20	2,019.20	7,312.80

ANNUAL COSTS OF THE BASIC SANITATION COMPONENT
Second Social Development Project, Ecuador

PROGRAM		YEAR				TOTALS	
		1	2	3	4	Line	Program
1	CONSTRUCTION OF NEW WATER SUPPLY SYSTEMS	750	1,338	1,446	1,446	4,980	4,980
2	UPGRADING OF EXISTING WATER SYSTEMS	128	208	224	112	672	672
3	LATRINES	211	528	461	461	1,661	1,661
4	OPERATION AND MAINTENANCE	37	103	108	72	320	320
5	COORDINATION, EXECUTION AND SUPERVISION	79	152	141	146	518	518
6	TECHNICAL ASSISTANCE TRAINING	300	500	400	250	1,450	2,170
		100	300	200	120	720	
7	STUDIES						
	Design Studies	52	94	101	101	348	898
	Institutional Restructuring of RWSS Sector	200	-	-	-	350	
	National RWSS Inventory	100	-	-	-	100	
Cost Recovery from Users	100	-	-	-	100		
8	EQUIPMENT AND MATERIALS	350	150	-	-	500	500
9	MONITORING AND EVALUATION	-	20	40	40	100	100
TOTAL COSTS (1992 US\$ x 1,000)		2,407	3,393	3,121	2,748	11,819	11,819

SECTORAL POLICY AND INSTITUTIONAL STRENGTHENING

OBJECTIVES

1. This component aims at: (a) strengthening decision-making processes by improving management and resource allocation capacity within the Ministry of Public Health (MOH) and its decentralized units at the national, provincial, and local levels and by contributing to intrasectoral coordination, particularly between MOH and IESS; and (b) strengthening MOH's capacity to assume, in the medium term, responsibilities related to project activities so as to ensure their sustainability in the medium- and long-term. The component's activities are grouped in three major areas: (i) decentralization, (ii) staff development, and (iii) studies, and monitoring and evaluation.

DESCRIPTION

2. The most important aspect of the health care model proposed under the project involves a shift of emphasis from curative health care (at present, hospitals absorb nearly 80% of the budget) to preventive health care. Moreover, decisions could increasingly be made at the local level and resources allocated based on results. Implanting programs with emphasis on family/community coverage would require important institutional changes for the MOH. To provide a basis for the required changes, the project would finance: (i) technical assistance activities for developing and promoting basic organizational reforms, including definition of operational functions and the design of systems that would strengthen capacity at the local, provincial, and national levels, (ii) staff training, (iii) provision of computing equipment and software; and (iv) studies.

Developing Institutional Bases for Decentralization

3. Activities related to strengthening the institutions at the local, provincial and national levels have been grouped as follows: (i) definition of decentralized organizational arrangements; (ii) establishment of a budget programming system; and (iii) development of a management information system.

4. The definition of decentralized organizational arrangements involves changes in the organizational/functional structure and in operating mechanisms, norms, and procedures of the MOH, the Provincial Health Departments, and the local operating units. Implementation of these changes would be done at the central and provincial levels and at the metropolitan hospitals, health centers and subcenters, and health posts in several steps:

- (a) Assessment of the situation at each level (MOH, Provincial Health Departments, and local operating unit)
- (b) Design of administrative reforms
- (c) Adoption of a legal framework
- (d) Development of administrative and operational instruments and standardized procedures and norms

5. The MOH has defined short-, medium- and long-term plans for a phased decentralization process. In the short-term the MOH would, at the central level: (i) strengthen the General Directorate of Health whose main role would be to coordinate the work of the technical directorates within the MOH at the central level as well as that of the provincial directorates; and (ii) create a National Directorate of Basic Health Services as a normative unit that would provide support to the Provincial Directorates in the establishment and organization of local health service area networks. At the provincial level, the MOH would create functional groups to support and supervise the local health service areas; and at the local level, the MOH would establish the local health service areas.

6. The project would support the operationalization of the decentralization plan and the process by which the initial steps would be implemented. The process includes consultations with, and support gathering from, representatives from the central, provincial and local levels of the MOH, universities, health professional associations and unions. The consultations would solicit the views of key officials at the local health area, provincial and central levels and provide information and orientation on the changes that would take place with regard to decentralization of functions. The main objective is to ensure that those who would be affected by changes understand the benefits of decentralization and are aware of the increased responsibilities at local levels.

7. The development of operational and administrative procedures and instruments would take place during the first two years of project implementation and would be reviewed periodically throughout the project execution period to ensure their adequacy and relevance. All the above activities would be supported by the project through financing of about 50 person-months of local and international technical assistance, preparation of manuals, printing and distribution.

8. The establishment of a budget programming system seeks to improve the capacity at the central, provincial and local levels to do budget programming and preparation and accounting-financial budget monitoring to encourage use of the budget as a planning, management, and control tool. At present, resource allocation is based on a set of inert criteria--mechanically adjusting to the availability of funds from the treasury or to an overall budgetary ceiling for each item, activity, local operating units, Provincial Health Department, MOH, and the overall health sector. Within the proposed project, initial activities for the establishment of a budget programming system include the preparation of manuals, instruments and guidelines for their use, all of them based on the practical experience learned by staff of the project preparation unit. Purchase of office equipment and monitoring and supervision of system implementation would begin once the initial activities have been completed.

9. These activities are intended to: (a) ensure that budget preparation flows from the local operating and administrative units to the Provincial Health Departments and the MOH, rather than the other way around; (b) introduce the use of the technical criteria necessary for the equitable and efficient allocation of resources among provinces, areas, and activities; and (c) allow for periodic monitoring of the budget movements, accounting records and transfers

from the treasury, to optimize resource utilization and to make resource allocation flexible. The project would support the establishment of a budget programming system through:

- (a) **Technical Assistance.** The project would provide about 30 person-months of international technical assistance and 8 person-years of local technical assistance to the budget and finance network within MOH, the provincial directorates and the health areas. Assistance would be provided for the design of improved processes and systems, on-the-job training to staff in charge of budget planning, preparation and analysis, and development of seminars and workshops on budgeting and financial management.
- (b) **Office Equipment.** The project would finance the purchase of the necessary office equipment, as well as computers and specialized software for the provincial directorates and local health areas.

10. The development of a management information system as a support mechanism for institutional strengthening would be included in the project. Since the sector is likely to continue facing fiscal restrictions and a simultaneous need to expand service coverage, improve its quality and focus on high-risk sectors of the population, it is necessary to improve the quality of the decision-making process on health issues at the national, provincial, and local levels. This subcomponent aims at reaching this objective through coordinated actions in the areas of: (a) information and technology, (b) cost analysis, and (c) planning and programming at the local, provincial and national levels.

- (a) **Information and Technology.** The focus is on the review and systematization of procedures and mechanisms for capturing, consolidation, delivery, analysis, dissemination, and use of health statistics. It seeks to streamline the flow of information to users. It emphasizes methods of analysis and precise ways of disseminating and utilizing the indicators to make decisions at the local operating units, local administrative units, Provincial Health Departments, MOH, and sectoral levels.

The basic health data collection form has been developed. The proposed project would finance printing, and distribution of this instrument that would constitute the basis for development of a systematic health data collection mechanism to be used, after consolidation and analysis, for decision making at all levels (local, provincial, and national). The proposed project would also finance about 15 person-months of technical assistance, purchase of computer equipment and hiring of qualified staff.

- (b) **Cost Analysis.** During preparation of the proposed project, the MOH began carrying out detailed cost analyses for priority areas to be covered during the first two years of project implementation. In addition, a computerized cost accounting system is being field tested in the Pichincha Provincial Directorate. It is expected that, under the proposed project, a suitable cost analysis system

would be established for the evaluation, control, decision-making, and allocation of funds based on changing priorities.

The proposed project would finance about 10 person-months of technical assistance, and travel and per diem costs related to periodic monitoring and supervision of these activities.

- (c) **Planning and Programming.** The main objective is to carry out an inventory of health sector resources at the central, provincial and local levels to enable the MOH to determine priorities with regard to human, physical, and financial resource allocation. In addition, the project would support the design a microplanning model to be used regularly by the local administrative units, to serve as the basis for its operations and as input to the planning process and achieve the required coordination between budget planning and programming.

To implement the above activities, the project would finance about 10 person-months of national and international consulting services as well as the costs of doing the inventory of health sector resources.

Staff Development

11. Reorienting health service delivery to a system based on prevention, decentralization, participation, managerial orientation, and efficiency requires changes in the distribution, attitudes, knowledge, and skills of sector workers. Therefore, this subcomponent has the following objectives: (a) to utilize as much as possible the human resources already linked to the sector to facilitate implementation of project activities; (b) to upgrade the skills of financial, managerial and administrative personnel in charge of basic health care services; and (c) to develop human resources that would contribute to strengthening the institutions in the medium-term. The required steps to develop specialized training programs would be:

1. Analysis of training needs based on the requirements of a decentralized organizational structure, a new budget programming system, and a revised management information system
2. Development of administrative and operating manuals and training materials
3. Training of managerial, financial and administrative staff at all levels
4. Evaluation of the training outcomes

12. In addition, seminars, workshops and training would be conducted for staff of MOH, the Ministry of Finance, CONADE and the Contraloria to ensure coordination between these institutions for the successful implementation of the project and for the adequate functioning of the budget, cost, planning, and evaluation systems of MOH and of the overall health sector.

13. The proposed project would finance: (i) technical assistance to support the MOH in carrying out the above activities; (ii) development, printing and distribution of training materials and administrative and operating manuals; (iii) travel and per diem costs for

instructors and trainees, and monitoring and supervision activities, as well as training and conference room rental when required; (iv) short-term visits abroad and short-term scholarships for managerial and key financial and administrative staff; (v) courses, seminars and workshops, as well as short-term university level courses for about 750 staff at the central, provincial and local levels; (vi) short-term visits abroad would also be financed for key staff in charge of budget planning and programming.

Studies

14. This subcomponent aims at supporting and enhancing the institutional improvements being sought for the delivery of MOH health services by financing studies and activities devoted to: (a) improved interinstitutional coordination; (b) cost recovery and affordability of basic health services, and payment systems; and (d) rehabilitation of the hospital system with special attention to financing issues.

15. Improved Intrasectoral Coordination: This study would analyze mechanisms for coordinating the function and operation of the MOH and the Medical Program of the IESS in the production, financing, and delivery of health care services, particularly in underserved regions, with the goal of eliminating costly and unnecessary duplication of resources, personnel, and services. As different experiences demonstrate in other countries, substantial savings and expansion of coverage to unprotected populations result from the implementation and consolidation of coordinated health systems. Recommendations of the study would focus on areas where MOH and IESS can make specific agreements for joint actions and other types of collaboration.

16. Cost Recovery/Payment Systems: While cost recovery would be used in specific project activities, there is little knowledge on how cost recovery mechanisms could be introduced in the delivery of other services under the project. This study, on the basis of LSMS information, would assess the impact that alternative fee schedules for different services would have upon the use of these services by different social/income groups, and the impact on sector finances. Results of the study would then be used to strengthen recommendations regarding the fees to be used. In addition, proposed studies would assess different payment mechanisms that could be introduced for providing incentives to providers for improving quality of care, particularly in underserved areas, limiting cost escalation, excessive allocation of resources to curative care, and use of inappropriate medical technology.

17. Rehabilitation of the Hospital System: Although effectiveness of the hospital system is poor, a comprehensive diagnostic of the situation, including physical, human, financial and managerial resources does not exist, either for single hospitals or for the system as a whole. The project would finance the set of studies required to fill this gap and to make recommendations as to how a deep crisis could be prevented.

Impact Evaluation

18. In addition, impact evaluation studies of sector programs would be supported, as described in Annex 10.1.

IMPACT EVALUATION

Objectives and Methodology

1. The monitoring of health and nutrition indicators will be done through the normal activities of the health personnel in the health service areas' facilities. After the health personnel register the information concerning their specific activities the data will be aggregated for the different health service areas until reaching the national level. This aggregate will be analyzed at regular intervals making it possible to monitor trends over time. The analysis of the data may indicate the need for urgent decision-making and policy changes. However, it will not be possible to draw conclusions about the impact of given interventions from the collected data because monitoring itself does not control for many external or independent variables which may influence the impact of interventions. To evaluate the impact of interventions utilizing monitoring data it will be necessary to develop a study which controls for the possible effect of variables external to the project.
2. The control of external variables can be achieved through prior experimental pilot studies which are not possible for ethical reasons, once the decision has been made to implement a project on a large scale. In projects such as the one proposed in Ecuador it will be necessary to make a before and after comparison utilizing some type of multivariate analysis that enables adjustments to be made for the effects of independent variables that may vary by year of comparison. One reason to adjust for certain external variables is the expected expansion of project activities in the poorest populations.
3. A statistical method often used for such a purpose is the model of logistical regression because it allows for categorization of dependent variables (e.g., presence or absence of a certain health risk). One use of logistical regression models is to select risk factors with independent effect, which could be used later on to identify in a simple manner the families in greatest need.
4. The information gathered on dependent and independent variables during the first year of the project will be the baseline data for the evaluation of impact. This data will later be compared with those of the intervention period. Essentially the indicators monitored during the first year of the project will constitute the "before" data since the whole of the intervention would be in preparation or only in partial implementation. The information gathered during the third or fourth year of the project would be that of the intervention. The data monitored and reported at these two points in time would be used to conduct the before and after comparison of project impact.
5. For the impact evaluation of the project in Ecuador three types of external variables will be included in the model: (i) characteristics of the individual; (ii) socioeconomic characteristics of the family; and (iii) data relative to specific interventions. Information will be gathered from two sources: (i) household survey; and (ii) information gathered from health workers on the characteristics of the interventions and on environmental sanitation in the health service areas.

6. The impact evaluation studies will be contracted out due to the need to evaluate the project with independent investigators and the study's implicit complexity. It will be necessary to accurately define the terms of reference for this contract, including further details on the statistical model and the variables which will be utilized.

Impact Indicators

7. Due to the complexity of undertaking a study on impact evaluation through multivariate analysis, particularly in a project the size of the one in Ecuador, the number of dependent variables analyzed should be kept to a minimum. These variables ought to be able to be obtained in a simple and low cost manner. For that reason, only the following brief listing of variables is proposed.

Infant Mortality

8. There are two limitations with utilizing infant mortality rates as a dependent variable. The first is that there may be a lack of reliable data. According to recent estimates, Ecuador has an infant mortality rate of 44 per thousand live births, a figure relatively high in the Latin American context. However, it has been argued that this MOH estimate is low due to underregistration in rural areas. One solution to this problem is to undertake a thorough review of the history of pregnancy specifically structured to reveal unreported deaths when the birth intervals are very long. The second limitation is the need to have large sample frames (between 9 and 10 thousand families surveyed) in order to have representative results at national level (including mountain-coastal and urban-rural areas) and to reduce the possibility of error in detecting reliable changes. This is due to the relatively low incidence of death by comparison with other health risks.

Mother-Child Anthropometric Indicators

9. Improvement in the nutritional status of children under three years of age is an important goal of the project, and is one of the most reliable indicators of health status and standard of living. It is proposed that anthropometric indicators be chosen because they are positive health indicators. Recent tradition has been that positive health and well-being indicators replace traditionally used negative indicators, such as morbidity and mortality. Specialized international organizations (PAHO, UNICEF, FAO) have followed this idea and used anthropometry to satisfy this need. This is because effective program coverage and implementation should result in homogenous values across population subgroups, independent of their socioeconomic differences. The evaluation in Ecuador should conform to this criteria and utilize anthropometric indicator values.

10. The influence of maternal nutritional status on birthweight and on maternal and child morbidity and mortality is well known. Improvements in the nutritional status of children under 3 years is an important goal of the project, being one of the best indicators of health status and quality of life. Nutritional status may be measured from the beginning of pregnancy up to the age of three by the following three indicators: (i) maternal weight for height in relation to the gestational age during pregnancy; (ii) birth weight in combination

with the gestational age at time of birth; and (iii) weight for age in the first three years of life. Indicators (i) and (iii) can be easily measured at home. They have the additional advantage that they will also be measured at the health services. The second indicator is impossible to register it in a home visit. Therefore, only indicators (i) and (iii) should be included in the evaluation.

11. An additional advantage of using these indicators in the impact evaluation is the greater prevalence of low weight cases than other indicators such as mortality or morbidity. Thus, the sample size when utilizing these indicators need not be so large.

Health Service Coverage of: Pregnancy Control, Adequate Childbirth Care (includes midwives) and Growth Monitoring in Children under Five Years of Age

12. These indicators consist with the priorities established by the project and do not require any justification.

Certain Causes of Illness in Children under One Year of Age

13. It is very important to study the changes in certain morbidities which the project's package of interventions, including inter alia health education, environmental sanitation and immunizations, may prevent. A tentative proposal is to analyze changes in diarrhea incidence, acute respiratory diseases and preventable infectious diseases. However, there is the possibility of self-reporting errors when the data are collected through household surveys. For example, there may be recall bias on the mother's part or she may be unable to describe the symptoms and signs of the disease. In an effort to eliminate some of the possible bias the study should focus only on the incidence of diarrheas and respiratory diseases in the most recent three months.

Sample Size

14. The size of the sample is a subject of primary importance. Since the statistical analysis will be multivariate, the fundamental criterion is that the sample size should be large enough to permit measuring the effect of the different independent variables on the dependent variable. Thus, the type of impact, or dependent variable, greatly influences the sample size decision. Infant mortality, which has a low incidence rate, would require a sample size of eight to nine thousand families in order to observe reliable changes. In the case of anthropometric indicators, which are relatively more prevalent, it has been estimated with the help of specialists, that a sample of only one to three thousand households is quite sufficient.

15. The size of the sample needed to evaluate the impact of the Ecuador project has influenced the possibility of collaborating with other ongoing studies. One such possibility would be to incorporate the impact evaluation into the Living Standards Measurement Survey (LSMS), which is set to evaluate the impact of the vocational training component under the ongoing World Bank-supported project in the educational sector. The LSMS has the advantage of properly measuring the standard of living. However, the sample size of the LSMS does not permit studying the changes in infant mortality in a reliable manner. Other

possibilities for collaboration (including demographic surveys developed by UNFPA and the DHS survey planned by AID) were dismissed due to the fact that their samples also will not be sufficient to measure infant mortality and are focused on other subjects with too many questions already in the instruments.

Proposal

16. Under the project two types of studies based on different surveys would be carried out:

(a) Impact Evaluation Study of Anthropometric and Coverage Indicators as Part of the LSMS Survey.

17. This study will take advantage of the LSMS survey which has already been planned and approved. The LSMS survey will be performed at two points in time, consisting of a two-stage sampling (a before and after approach). In the LSMS survey the selective sampling procedure will identify on the first home visit, when the LSMS variables are recorded, the presence of pregnant women and children under 3 years. The surveyed homes will then be selected for a second visit at a time when it will be best to record these indicators. On the second visit other indicators will also be recorded, such as morbidity in the first year of life. This survey is planned to reach almost four thousand households and would thus be a large enough sample size to analyze anthropometric indicators.

(b) Impact Evaluation Study of Infant Mortality and other Indicators

18. For the reasons already stated, this study will be carried out without any assistance from surveys organized by other institutions. In the preparatory study it would be necessary to explore the following issues: (i) survey techniques to best ensure reliability of the infant mortality indicator; (ii) incorporation of variables to measure the standard of living and other variables from the causal model; and (iii) incorporation of the anthropometric and other indicators in the same home visit with duly trained interviewers.

Feasibility Study and Definition of the Terms of Reference for the Impact Evaluations

19. An international consultant with wide experience on the subject will be hired to define the following aspects: (i) the causal model and the variables; (ii) the feasibility of the respective studies, including reliability analysis in measuring changes of the proposed indicators, and their costs; (iii) the necessary analytical methodology; and (iv) the terms of reference to contract these studies with consulting firms.

Cost-effective studies

20. The findings of the impact evaluation studies will help the Ministry of Health improve its services. This is particularly important in view of the long-term nature of the proposed health sector development plan. To this end, knowledge on the cost-effectiveness of the different interventions will be useful. Studies on the cost-effectiveness of the interventions

could be performed after completing the impact evaluation. It is proposed that these studies be designed during the project preparation stage of follow up operations, although they could also be carried out at the end of the project implementation period.

PROJECT ACTION PLAN

Annex 11

Page 1 of 3

OBJECTIVES	ACTIONS	TIMETABLE	STATUS/REMARKS
I. POLICY/INSTITUTIONAL REFORMS			
A. REORGANIZATION OF THE HEALTH CARE DELIVERY SYSTEM	A.1 Furnish the Bank a Ministerial Decree establishing the local service areas as the new administrative level of the public health system.	A.1 No later than May 15, 1992	A.1 Completed
	A.2 Furnish the Bank the annual programs and timetables of new and redeployed staff needed to operate the project health facilities.	A.2 No later than June 5, 1992	A.2 Completed
B. COST RECOVERY ARRANGEMENTS	B.1 Furnish the Bank for its review the design of and an implementation plan for establishing a cost recovery scheme for pharmaceuticals in project areas.	B.1 No later than July 31, 1992	B.1 Completed
	B.2 Furnish the Bank for its review the design of and an implementation plan for establishing a cost recovery scheme for basic sanitation and safe water services.	B.2 No later than May 1, 1992	B.2 Draft proposal received
	B.3 Start pilot testing the cost recovery scheme for pharmaceuticals in select project areas during the first two years of project implementation.	B.3 No later than April 1, 1993	
II. STUDIES	C.1 Study on alternative procurement and distribution methods for drugs and other medical supplies. Terms of Reference: Contract: Start: Completion:	 May 1, 1992 September 1, 1992 November 1, 1992 July 15, 1993	 TOR received and approved
	C.2 Study on the impact of the Government's price control policies for pharmaceuticals. Terms of Reference: Contract: Start: Completion:	 May 1, 1992 September 1, 1992 November 1, 1992 July 15, 1993	 TOR received and approved
	C.3 Evaluation of the pilot food supplementation scheme for all children between 6 and 36 months of age and pregnant and lactating women in project areas.		

PROJECT ACTION PLAN (Continued)

Annex 11

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OBJECTIVES	ACTIONS	TIMETABLE	STATUS/REMARKS
	Terms of Reference:	June 1, 1992	:TOR received
	Contract:	December 1, 1994	
	Start:	January 1, 1994	
	Completion:	August 1, 1995	
:C.4	Evaluation of the food supplementation scheme for malnourished children between 6 and 36 months of age and pregnant and lactating women in project areas.		
	Terms of Reference:	June 1, 1992	:TOR received
	Contract:	October 1, 1993	
	Start:	January 1, 1994	
	Completion:	December 1, 1995	
:C.5	Evaluation of the micronutrient supplementation.		
	Terms of Reference:	June 1, 1992	:TOR received and agreed
	Contract:	March 15, 1993	
	Start:	April 15, 1993	
	Completion:	June 15, 1993	
:C.6	Evaluation of the rural water and sanitation sector institutional study.		
	Terms of Reference:	May 1, 1992	:TOR received
	Contract:	January 1, 1993	
	Start:	June 1, 1993	
	Completion:	December 1, 1993	
:C.7	Evaluation of the models used for the provincial trials under the basic sanitation and safe water component.		
	Terms of Reference:	August 1, 1994	:Outline and objectives agreed
	Contract:	November 1, 1994	
	Start:	January 1, 1995	
	Completion:	June 1, 1995	
:C.8	Study on user fees-for-services and the role of cost recovery and alternative payment mechanisms in sectoral finance and resource allocation.		
	Terms of Reference:	June 1, 1992	:TOR received
	Contract:	July 1, 1993	
	Start:	September 1, 1993	
	Completion:	December 31, 1994	

PROJECT ACTION PLAN (Continued)

Annex 11

Page 3 of 3

OBJECTIVES	ACTIONS	TIMETABLE	STATUS/REMARKS
	:C.9 Study on the rehabilitation of the hospital system and the respective financial plan.		
	Terms of Reference:	June 1, 1992	:TOR received
	Contract:	February 1, 1993	
	Start:	April 1, 1993	
	Completion:	December 1, 1993	
	Study on inter-institutional coordination between the MOH and IESS.		
	Terms of Reference:	May 1, 1992	:TOR received
	Contract:	January 15, 1993	
	Start:	March 1, 1993	
	Completion:	December 15, 1993	
	:C.11 Impact Evaluation Program		
	Program Terms of Reference:	April 15, 1992	:Received and Approved
	Single Studies Terms of Reference:	June 30, 1993	:Various studies to be undertaken
	Contract:	December 31, 1993	
	Start:	March 1, 1994	
	Completion:	December 31, 1995	
:III. DEVELOPMENT OF THE INSTITUTIONAL BASES FOR DECENTRALIZATION:	:D.1 Submission to the Bank of a timetable for developing and establishing a management information system.	:D.1 No later than March 30, 1993	:Should start thereafter

Project Management and Implementation Arrangements

Project Organization: Roles and Responsibilities of MOH's Central Administration, Provincial Health Directorates, and Local Health Service Areas in Project Implementation

1. The project would be undertaken within the legal and organizational framework of Ecuador's MOH. The project organization, therefore, would have three levels:

A. MOH's Central Administration. Overall responsibility for project management is vested in the office of the Minister of Public Health who would receive support for general policy setting and institutional coordination from a Committee of Directors from the MOH's Central Administration. Day-to-day implementation of the project would be carried out by the various technical entities within the MOH, as well as CEMEIM and IEOS, and activities would be coordinated through the Project Coordinating Unit (PCU). The PCU would be staffed by a Coordinator, who would report directly to the Minister, and national and international consultants. The PCU would serve as the linkage between the project and other MOH units in charge of implementation of project activities, as well as with the Directorate of Basic Health Care Services, Provincial Health Departments and MOHs autonomous agencies, such as CEMEIM and IEOS. The PCU would employ an administrator that would manage and coordinate procurement, consultant contracting, accounting and financial aspects of the project and technical specialists who would work in the areas of basic health care and nutrition, safe water and sanitation, infrastructure, and institutional strengthening.

B. MOH's Provincial Level. This level represented by the Provincial Health Departments, or the alternative provincial institution in the case of the basic sanitation and safe water component, would be responsible for assisting in executing the project in their respective Provinces' local health service areas or communities. More specifically, provincial institutions would assist in the implementation of the primary health care program at local health service areas' facilities; in the hiring and redeployment of personnel; in the design and development of training programs; in the distribution of pharmaceuticals and other medical supplies; in the implementation of nutritional-related activities, the sanitation component, and institutional strengthening activities. Additionally, provincial institutions would (except to the extent a procurement agent is involved) be in charge of: civil works; distribution of equipment; financial resource allocation to local health areas according to pertinent budgets; and supervision and evaluation of technical and administrative activities undertaken at the local health service areas or communities. Provincial institutions would prepare periodic reports on the status of project implementation to be sent to the MOH's Central Administration.

C. Local Health Service Areas Directorates (Jefaturas de Area), or Community Organizations in the case of the basic sanitation and safe water component, would be in charge of managing and supervising the physical, human, financial, and technological resources assigned to an area or community for the production and delivery of basic health care services, nutrition-related

interventions, basic sanitation and safe water, and institutional strengthening in project areas.

Implementation Procedures

2. Project implementation procedures are described below (additional details are included in Annexes 4-10, and in the Documents Available in the Project File).

Basic Health Care Component

3. Improvement of Health Facilities. The selection of health facilities for construction, improvement, rehabilitation and repair during the first two years of project implementation in six provinces was done through careful analysis based on a survey and site inspections to verify the results of the survey. The same detailed planning would be carried out during the first two years of project implementation to select health facilities that would be constructed or improved during the following years of project execution. The PCU technical specialist would coordinate with the procurement agent to ensure that civil work design, construction and supervision are implemented in accordance with agreed plans and schedules.

4. Purchasing of equipment for the health facilities would be done at the central level by the PCU, with support from procurement agents. It is expected that the distribution and installation of specialized equipment would be included as part of the supplier contract.

5. Health Network Staffing. Responsibility for policy setting and decision-making related to staffing of the basic health care services rests with the Planning and Personnel Directorates of MOH. Implementation responsibility for hiring and redeployment of health care personnel rests with the Provincial Health Departments and the Local Health Service Areas. Responsibility for overall management of health personnel training program rests with the Personnel Directorate of MOH. An NGO would be contracted to administer the program and MOH would enter into formal agreements with local universities to deliver the training and to train MOH trainers in specific areas. Training materials would be developed by MOH and the universities with specialized technical assistance.

6. Pharmaceuticals and Other Medical Supplies. In the first two years of project implementation, CEMRIM would be in charge of procuring and distributing pharmaceuticals and other medical supplies needed in project areas on the basis of requests made by local health facilities and Provincial Health Services. Unless agreed otherwise, procurement would be done through international competitive bidding procedures acceptable to the Bank. Supplies would be distributed through CEMRIM's existing warehouses and transportation networks. Local health facilities, upon receipt of supplies, would check to be sure that the shipment matches what was ordered and certify that pharmaceuticals received have an adequate shelf life. After fulfilling these procedures, the facilities would then issue a payment voucher which CEMRIM would use to claim reimbursement from the PCU. The PCU would reimburse up to 70 percent of the voucher's value covering expenditures for all generic products included in the country's basic drug list; the Government would be responsible for the remaining amount as part of its project's counterpart

obligations. User charges, to be collected under a cost recovery scheme to be established during the first two years of project implementation, would help the Government recover 30 percent of project drug costs by the project's mid-term review.

7. During the project's mid-term review, CEMEIM's performance would be assessed along with recommendations of a study to be conducted over the first two years of project implementation on alternative procurement and distribution mechanisms in the project areas. On the basis of the assessment, a decision would be made on the procurement and distribution mechanisms to be employed during the remainder of the project.

Nutrition Component

8. Implementation responsibility for the nutrition component of the project falls with the Directorate of Nutrition of MOH and the Local Health Service Areas. Individual health facilities would be responsible for dispensing nutrients and food, in accordance with set criteria, as an integral part of the basic health care package they would provide. Procurement and distribution of food products and micronutrients would be done, with the assistance of a procurement agent, through contracts with private firms.

9. Responsibility for training of staff in the area of nutrition falls with the Personnel Directorate of MOH and local universities. Community training would be done by health workers as part of the routine health care they provide.

10. Public campaigns and special educational materials would be planned and prepared with the assistance of specialists contracted through the PCU.

Basic Sanitation Component

11. The basic sanitation component would be directed by a consultant for basic sanitation and safe water working in the PCU. An Advisory Committee would be established to assist in setting policies, strategies and institutional arrangements. Committee members would include IEOS officials, representatives from the MOH, Ministries of Social Welfare and the Interior and a representative of CONADE. This committee would meet periodically to review implementation aspects and make recommendations for improvement.

12. The PCU would be responsible for contracting purchasing agents for procurement of equipment, vehicles and services as well as contracting consultants for project supervision or support in coordination with the local level institutions. Contracting for works would be done directly at the provincial level, except for a few multi-provincial or large-scale activities, which would be handled at the central level by the PCU. Each province would have a responsible executing agency that is expected to be the provincial directorate of IEOS in a majority of cases, in one or two cases the executing agency would be the Provincial Council or another local governmental entity.

13. The component includes community promotion, organization and health education activities that would be carried out by extension workers from IEOS or by NGOs. Community administration committees would be formed and its members trained to collect tariffs and perform routine maintenance and minor

repairs. The PCU would contract technical assistance services to develop training programs and provide training to trainers, staff, community workers and community organizations in various aspects dealing with project execution.

14. Since this is a pilot project, four different models of institutional arrangements would be tried during the first three years of the program. The results would be evaluated after the trial period and recommendations of the study would be implemented for the remaining program activities. In the first model, the staff of the IEOS provincial directorate would be in charge of program execution with the exception of construction, studies, and auditing that would be done through contracts with private firms. In the second model, the staff of IEOS provincial directorate would coordinate the activities without having any responsibility for their direct execution, instead IEOS would contract NGOs, private enterprises and other local entities to execute all program activities. In the third model, IEOS provincial directorate would contract an NGO to implement an integrated program where the NGO would subcontract specific activities, if necessary. Finally, in the fourth model, the entities responsible for program execution would be the Provincial Council or other local government entity. In the latter case, IEOS would provide technical assistance and specific activities would be contracted with private firms.

Policy and Institutional Strengthening Component

15. Responsibility for implementation of this component rests with the Planning and Budgeting Directorates at the central level, the Provincial Health Departments and the Local Health Service Areas. The implementation would be coordinated by the PCU with specialized technical assistance. National and international consultants would be contracted to support strategic planning, high level staff training, and support systems development and implementation.

16. Studies would be done through contracts with consultants and/or specialized institutions, contracted with the assistance of a procurement agent.

Reporting Requirements

17. The Planning Directorate and the PCU Coordinator would be responsible for the preparation of periodic reports to inform the Minister of Public Health about the physical and financial progress of all project activities. Each report will also provide an analysis of past and projected activities. The PCU would submit to the Bank bi-annually project progress reports in a format to be agreed between MOH and the Bank.

OBJECTIVES AND FUNCTIONS OF THE PROJECT COORDINATION UNIT (PCU)

A Project Coordination Unit (PCU) would be established to assist in managing project implementation. The PCU will be under the direct supervision of the Minister of Health since MOH, through its provincial and local units, will be ultimately responsible for the implementation of the proposed project.

The functions of the PCU are:

- (a) Serve as the MOH counterpart before the World Bank for all purposes of the project, and before other organizations that provide technical and financial collaboration under the terms of reference approved by the World Bank.
- (b) Oversee the proper utilization of the funds committed for the execution of the project. In performing this function, it would assist the Provincial Health Directorates and Local Health Service Areas in the management of such funds.
- (c) Assist and supervise the implementation of activities included in each of the project's components, ensuring that it proceeds according to the criteria agreed with the World Bank.
- (d) Prepare the terms of reference, hire under terms and conditions satisfactory to the World Bank, and supervise consultants who would carry out technical assistance activities.
- (e) Prepare, with the support of procurement agents, bidding contracts for approved activities. Manage, with the support of a technical assistance management agent, the selection and appointment of consultants for studies and technical assistance. Ensure that the bidding competitions for works, equipment, services, and studies are carried out in accordance with the rules and procedures agreed on with the World Bank for such purpose.
- (f) Ensure that the execution of works, services, and studies be in line with the requirements specified for project activities in each component.
- (g) Evaluate, in an ongoing basis, the progress of project implementation, concerning financial resources spent, technical goals achieved, and impact on improving access to basic health services, the health status of the targeted population, and increased efficiency in the production and delivery of health care services.

- (h) Coordinate the implementation of various project activities with the technical departments of the MOH and other sectoral agencies that would be involved in project implementation, particularly:
1. Implementation of basic health care activities with the National Directorate of Basic Health Care Services, Provincial Health Departments, and Local Health Service Areas.
 2. Staff search and selection, as well as redeployment with the National Directorates of Planning and Personnel, Provincial Health Departments, and Local Health Service Areas.
 3. Training programs at various levels of expertise with the Directorate of Personnel, the School of Public Health, the Universities of Quito, Guayaquil, and Cuenca, the Provincial Directorates of Health, and the Local Health Service Areas.
 4. The pharmaceutical and other medical supplies programs, with the CEMEIM and the National Institute of Health.
 5. The nutritional component, with the National Division of Nutrition, and the Local Health Service Areas.
 6. The basic sanitation component, with the Provincial Directorates of Health, Provincial Directorates of the IEOS, and selected NGOs.
 7. Institutional strengthening activities with the Directorates of Planning and Budgeting at the central level, the Provincial Health Departments, and the Local Health Service Areas.
- (i) Require periodic reports from the agencies involved in project implementation on the implementation and financial status of project activities.
 - (j) Prepare progress reports and any special reports requested by the World Bank.
 - (k) Liaise with other Government agencies, particularly with the Ministry of Finance and CONADE, on matters related to the project, particularly financial matters.
 - (l) Liaise with other MOH, government, bilateral, and multilateral agencies to ensure proper coordination of project activities with other sectoral projects/activities.

INTERNAL ORGANIZATION OF THE PCU

The PCU would be headed by a Project Coordinator, and comprised of two branches: the Technical-Operational Branch and the Administrative-Financial Branch.

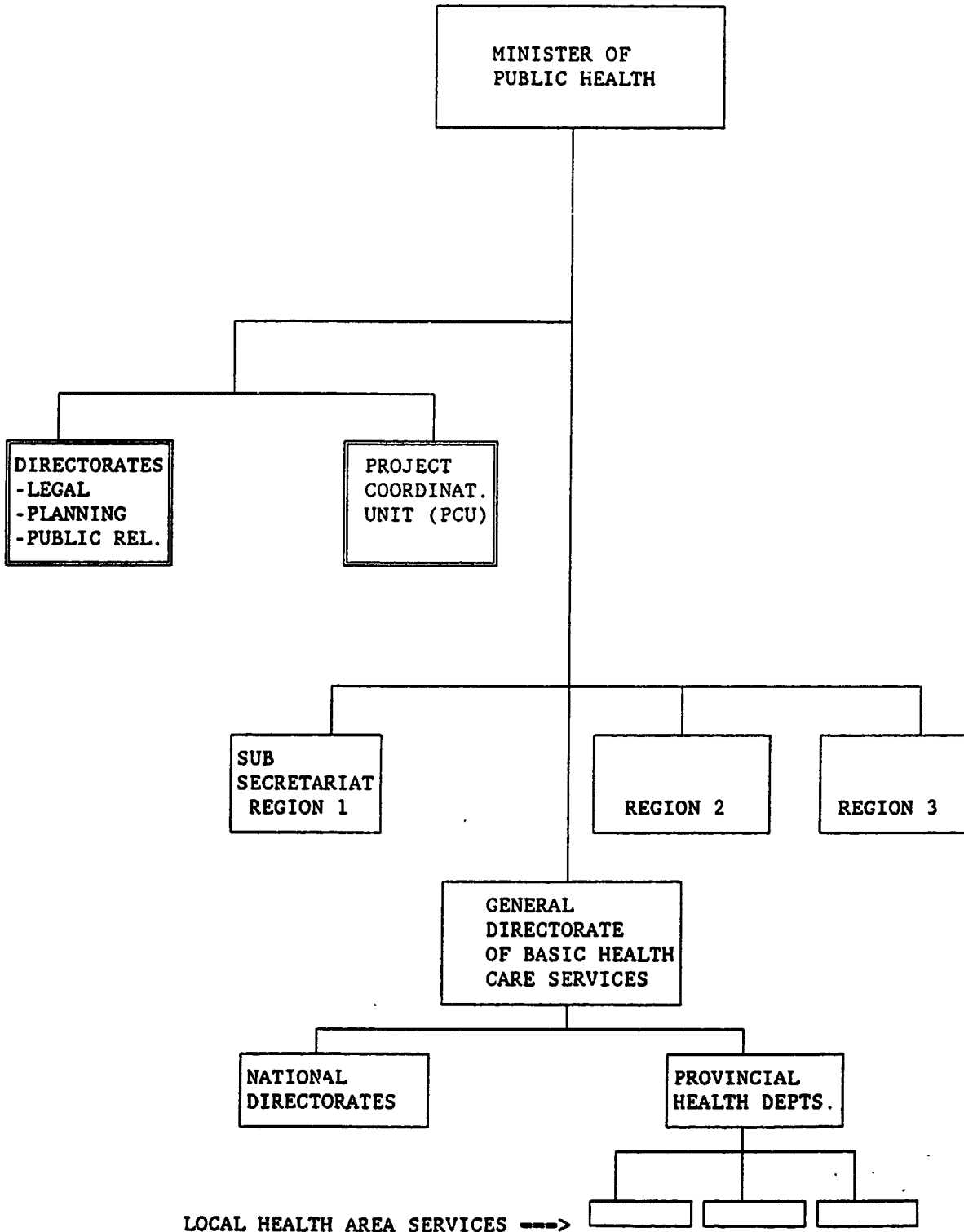
The PCU's Coordinator would be responsible for the technical and administrative management of the project. More specifically, the PCU's Coordinator would:

- (a) Manage the PCU, being responsible for the achievement of the goals set forth in each of components, and for guiding and supervising the work of the two PCU's Branches.
- (b) Serve as the project representative before national and international agencies involved in project implementation.
- (c) Manage the financial resources committed to the project.
- (d) Coordinate the participation of relevant departments of the MOH, and other sectoral agencies, during project implementation.
- (e) Inform and consult with the MOH about matters concerning the project.

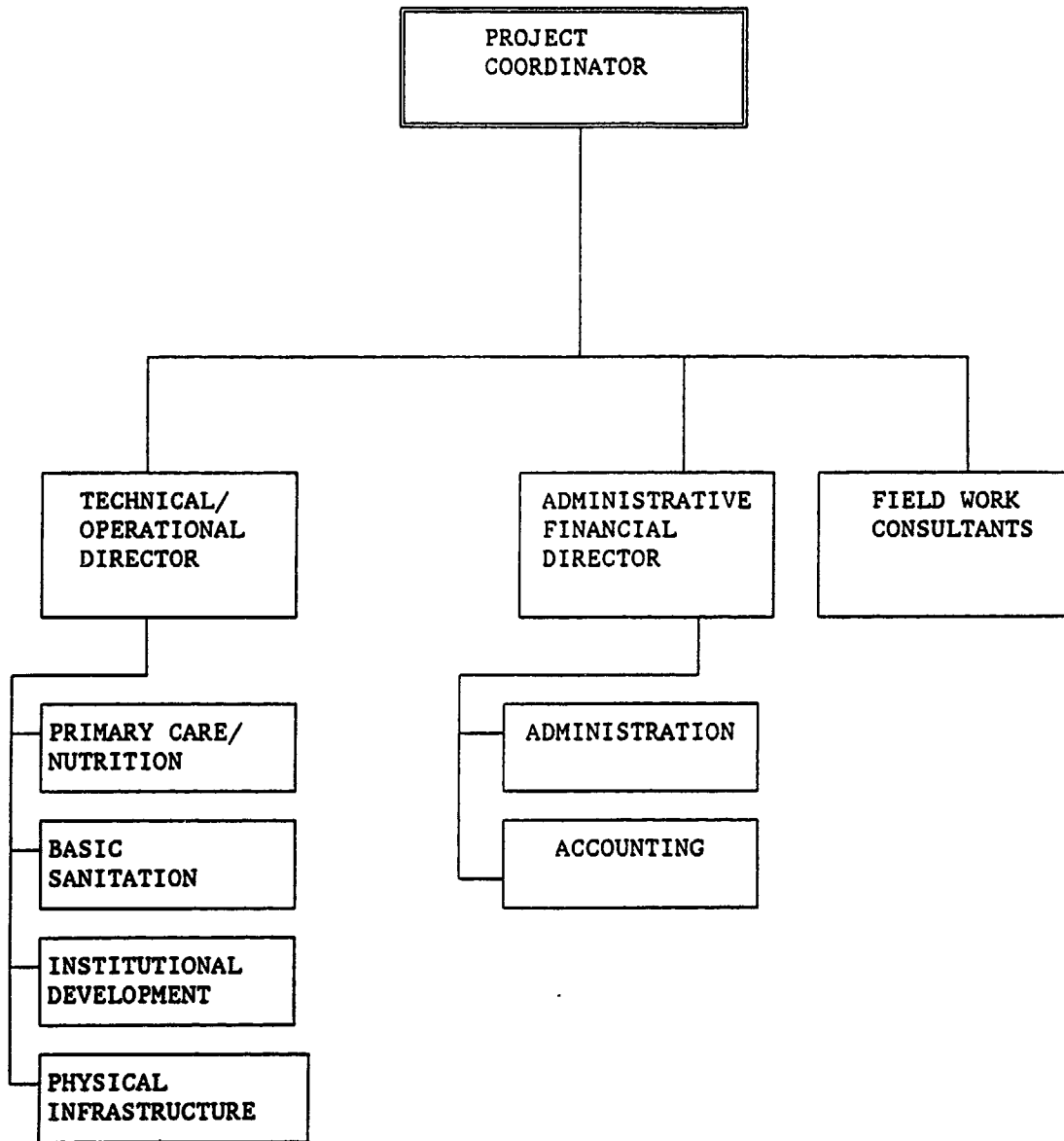
The Technical-Operational Branch would be responsible for providing technical support and supervise the implementation of project activities in the areas of primary health care and nutrition; basic sanitation and safe water; construction and maintenance of the physical infrastructure; and institutional strengthening activities.

The Administrative-Financial Branch would be responsible for the administrative management and financial control of the project.

PROJECT COORDINATION UNIT (PCU)
WITHIN THE ORGANIZATION OF THE MINISTRY OF PUBLIC HEALTH



PROJECT COORDINATION UNIT (PCU)



SECOND SOCIAL DEVELOPMENT PROJECT

Monitoring Indicators and Implementation Targets

Activities		1992	1993	1994	1995	1996	1997	1998
		3	4					
Overall Management								
Establish the PCU		D						
Contract procurement agents		D						
Contract firm to develop accounting software		D						
Conduct Implementation Review	7		D	D	D	D	D	D
Contract independent auditor	7		D	D	D	D	D	D
BASIC HEALTH CARE								
Improvement of Health Facilities								
Select sites for health centers	No. 88	8%	12%	16%	16%	16%	16%	16%
Build/rehabilitate health centers	No. 234	3%	3%	16%	16%	16%	16%	16%
Rehabilitate/repair local hospitals	No. 7	7%	7%	14%	14%	14%	14%	14%
Procure furniture, vehicles and equipment	Center 283		8%	12%	16%	16%	16%	16%
Select and assign directors and staff	Center 283		8%	12%	16%	16%	16%	16%
Train trainers, directors and staff	No. 283	5%	20%	30%	30%	15%		
Health Network Staffing and Training								
Hire incremental health care personnel	No. 1,600			5%	15%	20%	20%	20%
Redeploy existing staff	No. 1,300			5%	15%	20%	10%	35%
Enter into agreements with universities	No. 4			100%				
Develop training materials and manuals			20%	30%	30%	20%		
Conduct pre-service training for dental assistants	No. 360			20%	20%	20%	20%	20%
Conduct training for health care administration personnel at the provincial and area levels	No. 600		10%	20%	20%	20%	20%	10%
Conduct training for primary health care personnel	No. 4,500		10%	20%	20%	20%	20%	10%
Pharmaceuticals and Other Medical Supplies								
Enter into legal agreement with CEMEIM			100%					
Procure pharmaceuticals and medical supplies				10%	18%	18%	18%	18%
Conduct study on drug distribution and pricing				S	C			
Conduct study on cost recovery				S	C			
NUTRITION								
Nutrition Education and Promotion								
Conduct workshops for health center personnel	No. 120			20%	16%	16%	16%	16%
Contract specialists to plan & develop ad campaign				25%	75%			
Conduct mass media campaigns	No. 8				20%	20%	20%	20%
Develop educational materials					20%	20%	20%	20%
Growth Monitoring and Evaluation								
Design and produce data collection instruments			100%					
Procure and distribute scales and measuring tapes			8%	12%	16%	16%	16%	16%

Activities		1992	1993	1994	1995	1996	1997	1998
		3	4					
Food Supplements and Micronutrients								
Involve private sector in food production plant				100%				
Establish pilot universal food supplier. program	Benef. 187,000			10%	18%	18%	18%	18%
Conduct programs' evaluation study					S	C		
Establish targeted food supplementation program	Benef. 62,000			10%	18%	18%	18%	18%
Procure and distribute food and micronutrients	Pckgs. 2,600,000			10%	18%	18%	18%	18%
Conduct study to evaluate nutritional impact					S	C		
BASIC SANITATION								
Provision of Safe Water and Latrines								
Carry out study of rural water/sanitation sector			S	C				
Select target communities	No. 165			10%	30%	30%	30%	
Contract specialists				20%	80%			
Procure equipment and vehicles					25%	30%	30%	15%
Upgrade existing rural water supply systems	No. 42				10%	30%	30%	30%
Construct water supply facilities and latrines	Commun. 165				10%	30%	30%	30%
Train extension workers	No. 200			10%	15%	30%	30%	15%
Evaluate pilot program						S	C	
POLICY AND INSTITUTIONAL STRENGTHENING								
Devel. of Institutional Bases for Decentralization								
Contract technical assistance				10%	50%	10%	10%	10%
Purchase and distribute computers and office equipment to HQ, provinces, and health centers					20%	16%	16%	16%
Sector Staff Development								
Identify staff to be redeployed	No. 1,300			5%	15%	20%	10%	35%
Develop personnel management systems						100%		15%
Develop appropriate salary scales						100%		
Conduct training for managers and administrators	No. 600			10%	20%	20%	20%	20%
Develop a long-term continuing education program					*	*	*	
Studies, Sector Monitoring and Evaluation								
Study on fees-for-services/role of cost recovery				S	C			
Study on hospitals' conditions and effectiveness				S	C			
Operational research study on interinstitutional coordination between MOH and IESS				S	*	*	C	
Impact evaluation study					S	*	*	*
Mid-term review						S	C	

D = Discreet activities
S = Start activity
C = Complete activity
* = Continuous activity

ECUADOR
SECOND SOCIAL SECTOR PROJECT-HEALTH AND NUTRITION
Project Cost Summary

	US\$			Sucres			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
A. BASIC HEALTH CARE	42.5	17.5	60.0	56056.6	23156.7	79213.3	29.2	67.6
B. NUTRITION	4.4	1.2	5.7	5873.7	1594.3	7468.0	21.3	6.4
C. BASIC SANITATION	8.2	3.4	11.7	10872.7	4531.9	15404.6	29.4	13.1
D. POLICY&INST.STRENGTHENING	6.5	4.9	11.4	8627.9	6431.8	15059.8	42.7	12.9
Total BASELINE COSTS	61.7	27.1	88.7	81430.9	35714.8	117145.7	30.5	100.0
Physical Contingencies	0.8	0.9	1.6	1021.9	1147.2	2169.1	52.9	1.9
Price Contingencies	8.3	3.5	11.8	11020.8	4598.4	15619.2	29.4	13.3
Total PROJECTS COSTS	70.8	31.4	102.2	93473.6	41460.5	134934.0	30.7	115.2

Values Scaled by 1000000.0 - 6/8/1992 19:11

ECUADOR
SECOND SOCIAL SECTOR PROJECT-HEALTH AND NUTRITION
Summary Accounts Cost Summary

	US\$			Suces			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
I. INVESTMENT COSTS								
A. Civil Works								
1. New Construction	7.3	4.3	11.7	9686.3	5721.4	15407.7	37.1	13.2
2. Rehabilitation	1.8	0.9	2.7	2319.1	1248.7	3567.8	35.0	3.0
Sub-Total	9.1	5.3	14.4	12005.4	6970.2	18975.6	36.7	16.2
B. Furniture and Equipment								
1. Furniture	1.1	1.1	2.3	1517.8	1517.8	3035.7	50.0	2.6
2. Medical Equipment	1.4	5.7	7.1	1880.7	7475.4	9356.1	79.9	8.0
3. Odontological Equipment	0.3	1.1	1.3	355.2	1420.9	1776.1	80.0	1.5
4. Computer Equipment	0.1	1.2	1.3	186.4	1545.7	1732.1	89.2	1.5
Sub-Total	3.0	9.1	12.0	3940.1	11959.8	15899.9	75.2	13.6
C. Vehicles								
	0.6	0.8	1.3	784.4	991.1	1775.5	55.8	1.5
D. Studies & Tech.Assistance								
1. Studies	1.5	1.5	3.0	2043.6	1943.4	3987.0	48.7	3.4
2. Consultants	4.7	1.6	6.4	6262.6	2137.4	8400.0	25.4	7.2
Sub-Total	6.3	3.1	9.4	8306.2	4080.8	12387.0	32.9	10.6
E. Public Campaigns								
	0.9	0.6	1.6	1250.4	857.1	2107.5	40.7	1.8
F. Training								
1. Training Events	5.6	0.6	6.2	7452.9	780.2	8233.0	9.5	7.0
2. Training Materials	0.1	0.3	0.4	118.8	356.4	475.2	75.0	0.4
Sub-Total	5.7	0.9	6.6	7571.7	1136.6	8708.3	13.1	7.4
G. Incentivos								
	3.1	0.0	3.1	4158.4	0.0	4158.4	0.0	3.5
H. Purchasing Agents & Audit								
	0.1	1.3	1.4	91.1	1717.5	1808.6	95.0	1.5
Total INVESTMENT COSTS	28.9	21.0	49.9	38107.6	27713.1	65820.7	42.1	56.2
II. RECURRENT COSTS								
A. Human Resources								
1. Salaries	21.6	0.0	21.6	28501.7	38.6	28540.3	0.1	24.4
B. Medical Inputs & Supplies	3.9	4.7	8.6	5165.4	6222.4	11387.8	54.6	9.7
C. Food Program	2.5	0.6	3.1	3274.4	818.6	4093.0	20.0	3.5
D. Maintenance								
1. Civil Work Maintenance	0.5	0.1	0.6	629.8	143.3	773.1	18.5	0.7
2. Equipment Maintenance	2.9	0.3	3.2	3835.9	385.8	4221.6	9.1	3.6
3. Vehicle Maintenance	0.4	0.0	0.4	510.3	0.0	510.3	0.0	0.4
Sub-Total	3.8	0.4	4.2	4976.0	529.1	5505.0	9.6	4.7
E. Other Operating Costs								
	1.1	0.3	1.4	1405.8	393.0	1798.9	21.8	1.5
Total RECURRENT COSTS	32.8	6.1	38.9	43323.2	8001.7	51325.0	15.6	43.8
Total BASELINE COSTS	61.7	27.1	88.7	81430.9	35714.8	117145.7	30.5	100.0
Physical Contingencies	0.8	0.9	1.6	1021.9	1147.2	2169.1	52.9	1.9
Price Contingencies	8.3	3.5	11.8	11020.8	4598.4	15619.2	29.4	13.3
Total PROJECTS COSTS	70.8	31.4	102.2	93473.6	41460.5	134934.0	30.7	115.2

ECUADOR
SECOND SOCIAL SECTOR PROJECT-HEALTH AND NUTRITION
Summary Account by Project Component
US\$

	BASIC HEALTH CARE	NUTRITIO N	BASIC SANITATI ON	POLICY&I NST.STRE NGTHENIN G	Total	Physical Contingencies		Price Contingencies	
						%	Amount	%	Amount
I. INVESTMENT COSTS									
A. Civil Works									
1. New Construction	5.0	0.0	6.6	0.0	11.7	5.7	0.7	11.5	1.3
2. Rehabilitation	2.0	0.0	0.7	0.0	2.7	8.8	0.2	12.8	0.3
Sub-total	7.1	0.0	7.3	0.0	14.4	6.2	0.9	11.8	1.7
B. Furniture and Equipment									
1. Furniture	2.3	0.0	0.0	0.0	2.3	5.0	0.1	15.3	0.4
2. Medical Equipment	7.1	0.0	0.0	0.0	7.1	5.0	0.4	14.7	1.0
3. Odontological Equipment	1.3	0.0	0.0	0.0	1.3	5.0	0.1	14.4	0.2
4. Computer Equipment	0.0	0.0	0.0	1.3	1.3	5.0	0.1	13.6	0.2
Sub-total	10.7	0.0	0.0	1.3	12.0	5.0	0.6	14.6	1.8
C. Vehicles									
E. Public Campaigns	0.8	0.0	0.5	0.0	1.3	5.0	0.1	11.2	0.2
D. Studies & Tech.Assistance									
1. Studies	0.5	0.4	0.7	1.3	3.0	0.9	0.0	7.8	0.2
2. Consultants	0.7	0.0	1.4	4.2	6.4	0.0	0.0	11.2	0.7
Sub-total	1.2	0.4	2.2	5.6	9.4	0.3	0.0	10.1	0.9
E. Public Campaigns									
F. Training	0.6	1.0	0.0	0.0	1.6	1.9	0.0	11.8	0.2
1. Training Events									
1. Training Events	3.2	0.4	0.7	1.9	6.2	0.0	0.0	12.1	0.8
2. Training Materials									
2. Training Materials	0.4	0.0	0.0	0.0	0.4	5.0	0.0	14.3	0.1
Sub-total	3.6	0.4	0.7	1.9	6.6	0.3	0.0	12.2	0.8
G. Incentivos									
G. Incentivos	3.1	0.0	0.0	0.0	3.1	0.0	0.0	11.8	0.4
H. Purchasing Agents & Audit									
H. Purchasing Agents & Audit	0.0	0.0	0.0	1.4	1.4	0.0	0.0	9.1	0.1
Total INVESTMENT COSTS	27.2	1.8	10.7	10.1	49.9	3.3	1.6	12.1	6.0
II. RECURRENT COSTS									
A. Human Resources									
1. Salaries	21.0	0.1	0.0	0.4	21.6	0.0	0.0	15.0	3.2
B. Medical Inputs & Supplies									
B. Medical Inputs & Supplies	8.0	0.6	0.0	0.0	8.6	0.0	0.0	13.7	1.2
C. Food Program									
C. Food Program	0.0	3.1	0.0	0.0	3.1	0.0	0.0	14.2	0.4
D. Maintenance									
1. Civil Work Maintenance	0.6	0.0	0.0	0.0	0.6	0.0	0.0	16.6	0.1
2. Equipment Maintenance	2.7	0.0	0.3	0.1	3.2	0.0	0.0	18.4	0.6
3. Vehicle Maintenance	0.4	0.0	0.0	0.0	0.4	0.0	0.0	17.8	0.1
Sub-total	3.7	0.0	0.3	0.1	4.2	0.0	0.0	18.1	0.8
E. Other Operating Costs									
E. Other Operating Costs	0.0	0.0	0.6	0.7	1.4	0.0	0.0	12.2	0.2
Total RECURRENT COSTS	32.9	3.8	0.9	1.3	38.9	0.0	0.0	14.9	5.8
Total BASELINE COSTS									
Total BASELINE COSTS	60.0	5.7	11.7	11.4	88.7	1.9	1.6	13.3	11.8
Physical Contingencies									
Physical Contingencies	1.2	0.0	0.4	0.1	1.6				
Price Contingencies									
Price Contingencies	8.6	0.7	1.2	1.3	11.8	1.7	0.2		
Total PROJECT COSTS	69.8	6.4	13.2	12.8	102.2	1.8	1.8	11.6	11.8
Taxes									
Taxes	2.9	0.0	3.3	0.3	6.5	4.4	0.3		
Foreign Exchange									
Foreign Exchange	20.6	1.4	3.9	5.5	31.4	3.1	1.0		

Values Scaled by 1000000.0 6/8/1992 19:11

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SECOND SOCIAL SECTOR PROJECT-HEALTH AND NUTRITION
US\$

Summary Accounts by Year

	Base Costs							Total	Foreign Exchange	
	01	02	03	04	05	06	07		%	Amount
I. INVESTMENT COSTS										
A. Civil Works										
1. New Construction	0.3	1.3	3.1	3.0	3.0	0.9	0.0	11.7	37.1	4.3
2. Rehabilitation	0.1	0.3	0.6	0.7	0.6	0.3	0.1	2.7	35.0	0.9
Sub-total	0.4	1.7	3.6	3.7	3.6	1.2	0.2	14.4	36.7	5.3
B. Furniture and Equipment										
1. Furniture	0.0	0.2	0.2	0.4	0.7	0.5	0.2	2.3	50.0	1.1
2. Medical Equipment	0.4	0.6	0.7	1.3	2.2	1.3	0.7	7.1	79.9	5.7
3. Odontological Equipment	0.0	0.1	0.2	0.2	0.4	0.2	0.1	1.3	80.0	1.1
4. Computer Equipment	0.1	0.2	0.4	0.0	0.1	0.5	0.1	1.3	89.2	1.2
Sub-total	0.5	1.1	1.4	2.0	3.4	2.6	1.2	12.0	75.2	9.1
C. Vehicles										
Sub-total	0.0	0.4	0.2	0.1	0.1	0.1	0.1	1.3	55.8	0.8
D. Studies & Tech.Assistance										
1. Studies	0.4	1.3	0.5	0.1	0.6	0.1	0.1	3.0	48.7	1.5
2. Consultants	0.7	1.0	1.2	1.1	0.9	0.7	0.7	6.4	25.4	1.6
Sub-total	1.1	2.3	1.7	1.2	1.6	0.8	0.8	9.4	32.9	3.1
E. Public Campaigns										
Sub-total	0.1	0.2	0.3	0.3	0.4	0.2	0.1	1.6	40.7	0.6
F. Training										
1. Training Events	0.4	0.7	1.4	1.2	1.1	0.8	0.7	6.2	9.5	0.6
2. Training Materials	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.4	75.0	0.3
Sub-total	0.4	0.8	1.5	1.3	1.2	0.8	0.7	6.6	13.1	0.9
G. Incentivos										
Sub-total	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.1	0.0	0.0
H. Purchasing Agents & Audit										
Sub-total	0.2	0.3	0.3	0.2	0.1	0.1	0.1	1.4	95.0	1.3
Total INVESTMENT COSTS	3.1	7.2	9.5	9.3	10.9	6.2	3.7	49.9	42.1	21.0
II. RECURRENT COSTS										
I. Human Resources										
1. Salaries	0.7	1.7	2.4	3.3	4.4	6.2	3.0	21.6	0.1	0.0
J. Medical Inputs & Supplies										
1. Medical Inputs & Supplies	0.4	0.8	1.3	1.4	1.7	1.8	1.1	8.6	54.6	4.7
K. Food Program										
Sub-total	0.1	0.3	0.4	0.4	0.7	0.7	0.4	3.1	20.0	0.6
L. Maintenance										
1. Civil Work Maintenance	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.6	18.5	0.1
2. Equipment Maintenance	0.0	0.1	0.2	0.4	0.6	0.9	1.1	3.2	9.1	0.3
3. Vehicle Maintenance	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.4	0.0	0.0
Sub-total	0.0	0.1	0.3	0.5	0.7	1.1	1.4	4.2	9.6	0.4
M. Other Operating Costs										
Sub-total	0.0	0.2	0.3	0.3	0.3	0.1	0.1	1.4	21.8	0.3
Total RECURRENT COSTS	1.4	3.0	4.7	5.9	7.9	10.0	6.0	38.9	15.6	6.1
Total BASELINE COSTS	4.5	10.3	14.2	15.1	18.7	16.2	9.7	88.7	30.5	27.1
Physical Contingencies	0.1	0.2	0.3	0.3	0.4	0.2	0.1	1.6	52.9	0.9
Price Contingencies	0.0	0.4	1.1	1.8	3.0	3.2	2.4	11.8	29.4	3.5
Total PROJECT COSTS	4.6	10.9	15.6	17.2	22.1	19.7	12.1	102.2	30.7	31.4
Taxes	0.2	0.9	1.2	1.4	1.8	0.6	0.4	6.5	0.0	0.0
Foreign Exchange	1.5	3.8	5.1	5.4	7.5	5.3	2.9	31.4	100.0	31.4

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SECOND SOCIAL DEVELOPMENT PROJECT

Estimated Schedule of Disbursements

(in US\$ million)

Bank Fiscal Year	Quarter Ending	Disbursed During Quarter	Cumulative Amount	Disb. as % of Total	Balance of Loan
93	Dec. 31, 1992	6.0 a/	6.0		64.0
	March 31, 1993	0.5	6.5		63.5
	June 30, 1993	1.0	7.5	11	62.5
94	Sept. 30, 1993	1.5	9.0		61.0
	Dec. 31, 1993	1.5	10.5		59.5
	March 31, 1994	2.0	12.5		57.5
	June 30, 1994	2.0	14.5	21	55.5
95	Sept. 30, 1994	2.0	16.5		53.5
	Dec. 31, 1994	2.0	18.5		51.5
	March 31, 1995	3.0	21.5		48.5
	June 30, 1995	3.0	24.5	35	45.5
96	Sept. 30, 1995	3.0	27.5		42.5
	Dec. 31, 1995	3.0	30.5		39.5
	March 31, 1996	3.0	33.5		36.5
	June 30, 1996	3.0	36.5	52	33.5
97	Sept. 30, 1996	4.0	40.5		29.5
	Dec. 31, 1996	4.0	44.5		25.5
	March 31, 1997	4.0	48.5		21.5
	June 30, 1997	4.0	52.5	75	17.5
98	Sept. 30, 1997	3.0	55.5		14.5
	Dec. 31, 1997	3.0	58.5		11.5
	March 31, 1998	2.0	60.5		9.5
	June 30, 1998	2.0	62.5	89	7.5
99	Sept. 30, 1998	2.0	64.5		5.5
	Dec. 31, 1998	2.0	66.5		3.5
	March 31, 1999	1.5	68.0		2.0
	June 30, 1999	1.5	69.5	99	0.5
00	Sept. 30, 1999	0.5	70.0	100	0.0

a/ Includes Special Account deposit of US\$6.0 million and a portion of retroactive financing of up to US\$5.0 million for eligible expenditures incurred after January, 1992.

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SECOND SOCIAL DEVELOPMENT PROJECT

Withdrawal of the Proceeds of the Loan

Category	Amount of the Loan Allocated (Expressed in Dollar Equivalent)	% of Expenditures to be Financed
1. Civil Works	9,000,000	60%
2. Vehicles	1,500,000	100% of foreign expenditures, 100% of local expenditures
Other Equipment and Furniture	11,000,000	(ex-factory cost) and 80% of local expenditures for other items procured locally
3. Technical Assistance (including purchasing agents and audits) Studies, Staff Training and Training Materials	14,000,000	100%
4. Public Campaigns	1,500,000	100%
5. Incentives	3,500,000	100%
6. Medical Inputs and Supplies	5,000,000	100% until the aggregate reaches US\$1.2 million, 60% until the aggregate reaches US\$4.0 million, and 20% for the remainder
7. Operating Costs (including incremental salaries, O&M of buildings and equipment, and travel expenses and office supplies)	12,500,000	100% until the aggregate reaches US\$2.5 million, 60% until the aggregate reaches US\$10.0 million, and 20% for the remainder
8. Food program and distribution	2,000,000	100% until the aggregate reaches US\$0.5 million, 60% until the aggregate reaches US\$1.5 million, and 20% for the remainder
6. PPF advance	1,072,000	
7. Unallocated	8,928,000	
Total	70,000,000	

HEALTH SECTOR INVESTMENT PROGRAM

Investment Program and Proposed Financing with IDB participation

	World Bank Financing	IDB Financing	Government Financing	Total
INVESTMENT COSTS				
Civil Works	11.3	5.3	11.1	27.7
Furniture, Equipment, and Vehicles	13.9	6.8	3.6	24.3
Studies, T.A. (including purchasing agents and audits), Training and Training Materials	14.3	7.5	0.0	21.7
Public Campaigns	2.4	0.0	0.0	2.4
Incentives	4.3	1.3	0.3	6.0
Subtotal	46.2	20.9	15.1	82.1
RECURRENT COSTS				
Operating Costs including salaries, O&M, and supplies	14.5	7.0	30.7	52.2
Pharmaceuticals and Medical Supplies	7.0	2.5	10.4	19.9
Food Products and Supplements	2.3	0.7	2.8	5.8
Subtotal	23.8	10.2	43.9	77.9
TOTAL	70.0	31.0	59.0	160.0
% financed	44	19	37	100

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SECOND SOCIAL DEVELOPMENT PROJECT--HEALTH AND NUTRITION

Supervision Plan

<u>Timing</u>	<u>Staff Weeks</u>	<u>Staffing</u>
CY1992	20 weeks	<p>Bank resources (10 weeks) :</p> <ul style="list-style-type: none">-Task manager (3 weeks)-PHN specialist (3 weeks)-Nutrition specialist (2 weeks)-Implementation/operation specialist (1 week)-Other --not yet specified (1 week) <p>Supplementary technical inputs (through bilateral/multilateral cooperation) :</p> <ul style="list-style-type: none">-Primary health care (1 weeks)-Health planning (1 weeks)-Health economist (2 weeks)-Water and sanitation (4 weeks)-Drugs/supply systems (2 weeks)
CY1993	45 weeks	<p>Bank resources (25 weeks) :</p> <ul style="list-style-type: none">-Task manager (8 weeks)-PHN specialist (8 weeks)-Nutrition specialist (3 weeks)-Implementation/operation specialist (6 weeks) <p>Supplementary technical inputs (through bilateral/multilateral cooperation) :</p> <ul style="list-style-type: none">-Primary health care (1 weeks)-Health planning (1 weeks)-Health economist (2 weeks)-Family planning (1 week)-Water and sanitation (8 weeks)-Management development specialist (1 weeks)-Equipment specialist (2 weeks)-Information systems (2 weeks)-Drugs/supply systems (1 week)-Medical education (1 weeks)

CY1994

40 weeks

Bank resources (25 weeks):

- Task manager (8 weeks)
- PHN specialist (8 weeks)
- Nutrition specialist (3 weeks)
- Implementation/operation specialist (6 weeks)

Supplementary technical inputs
(through bilateral/multilateral cooperation):

- Primary health care (1 weeks)
- Health planning (1 weeks)
- Health economist (1 weeks)
- Health systems (1 week)
- Water and sanitation (7 weeks)
- Management development specialist (1 weeks)
- Information systems (1 weeks)
- Drugs/supply systems (1 week)
- Medical education (1 week)

CY1995

37 weeks

Bank resources (20 weeks):

- Task manager (7 weeks)
- PHN specialist (6 weeks)
- Nutrition specialist (3 weeks)
- Implementation/operation specialist (4 weeks)

Supplementary technical inputs
(through bilateral/multilateral cooperation):

- Primary health care (1 week)
- Health planning (1 week)
- Health economist (1 week)
- Health systems (1 week)
- Water and sanitation (10 weeks)
- Management development specialist (1 weeks)
- Drugs/supply system (1 weeks)
- Information systems (1 weeks)

CY1996

35 weeks

Bank resources (20 weeks):

- Task manager (7 weeks)
- PHN specialist (6 weeks)
- Nutrition specialist (3 weeks)
- Implementation/operation specialist (4 weeks)

Supplementary technical inputs
(through bilateral/multilateral
cooperation):

- Primary health care (1 week)
- Health systems (1 week)
- Health economist (1 week)
- Water and sanitation (8 weeks)
- Management development specialist
(1 week)
- Drugs/supply systems (1 week)
- Information systems (1 weeks)
- Medical education (1 weeks)

CY1997

31 weeks

Bank resources (18 weeks):

- Task manager (7 weeks)
- PHN specialist (6 weeks)
- Nutrition specialist (2 weeks)
- Implementation/operation
specialist (3 weeks)

Supplementary technical inputs
(through bilateral/multilateral
cooperation):

- Primary health care (1 weeks)
- Health systems (1 weeks)
- Health economist (1 weeks)
- Water and sanitation (6 weeks)
- Management development specialist
(1 weeks)
- Drugs/supply systems (1 week)
- Medical education (1 week)
- Information systems (1 week)

CY1998

24 weeks

Bank resources (15 weeks):

- Task manager (6 weeks)
- PHN specialist (4 weeks)
- Nutrition specialist (2 weeks)
- Implementation/operation
specialist (3 weeks)

Supplementary technical inputs
(through bilateral/multilateral
cooperation):

- Primary health care (1 week)
- Health systems (1 week)
- Health economist (1 week)
- Water and sanitation (5 weeks)
- Drugs/supply systems (1 week)

WORKING PAPERS AND LIST OF DOCUMENTS IN THE PROJECT FILES

A. Working Papers

MSP-OPS/OMS-BIRF. 1991. Fortalecimiento y ampliacion de los servicios basicos de salud en el Ecuador; documento central.

MSP-OPS/OMS-BIRD. 1991. Fortalecimiento y ampliacion de los servicios basicos de salud en el Ecuador; annexes for each component of the project:

(i) Basic Health Care Component

- Incentivos para el personal
- Manual de participacion social y voluntariado
- Guia para la atencion extramural
- Capacidad resolutive de las unidades y areas de salud
- Produccion y productividad de los servicios y plantillas de personal segun tipo de unidad
- Actividades de apoyo a la coordinacion interprogramatica
 - * Planificacion familiar
 - * Colera
 - * Doc
 - * Tuberculosis
- Modulo de Programacion funcional de recurso fisico
- Costos del personal requerido
- Medicamentos:
 - * Recuperacion de costos
 - * Suministro de medicamentos

(ii) Nutrition:

- Educacion alimentaria nutricional y provision social
- Control de crecimiento y vigilancia nutricional
- Complementacion alimentaria
- Poblaciones objetivo del componente nutrition
- Poblaciones objetivo y beneficiarios de la complementacion alimentaria, calculo de raciones y costos de los alimentos
- Revision de las actividades de control de las deficiencias de IODO
- Estudio de programas de complementacion alimentaria en el Ecuador
- Proyecto Ecuador 4463/PMA
- Normas de complementacion alimentaria
- Normas de tratamiento del nino desnutrido
- Estudio para prefactibilidad de conversion de planta procesadora de alimentos
- Ley de creacion del FONIN
- Estudio de monitoreo del estado nutricional del hierro
- Estudio sobre vitamina A
- Control de crecimiento y vigilancia
- Sistema de informacion del bajo peso
- Presupuesto general estimado en dolares
- Evaluacion del componente nutricion
- Mecanismo de coordinacion con el CONDE
- Dotacion de balanzas
- Control del embarazo
- Uso de medios masivos de comunicacion
- Organizacion y actividades de los equipos de salud
- Normas de educacion alimentaria para el personal de salud

- Presupuesto lactancia materna
 - Presupuesto micronutrientes
 - Presupuesto de complementacion alimentaria
 - CAP para capacitacion al personal de salud en control de crecimiento
 - Actividades de capacitacion en control de crecimiento
 - Mercado de leches maternizadas
 - Informe de consultoria Lcda. Alexandra Praun
- (iii) Safe Water and Basic Sanitation:
- Analisis y evaluacion de la situacion de las comunidades rurales del Ecuador en relacion al servicio de agua potable, funcionamiento de los sistemas de subministro y a la capacidad de gestion tecnica, administrativa-financiera de las juntas administradoras de agua potable. Formulacion de estrategias, politicas y mecanismo para mejorar y ampliar la cobertura del servicio
- (iv) Institutional Strengthening:
- Manual de tesoreria para areas de salud
 - Sistema de informacion administrativa
 - Manual para el analisis y uso de la informacion en el nivel provincial
 - Manual para el analisis y uso de la informacion en el nivel de area
 - Programa de capacitacion para la implantacion de los sistemas administrativos de apoyo en areas de salud y direcciones provinciales de salud
 - Regimen de incentivos y motivacion para equipos de salud locales
 - Subsistema de presupuesto para areas de salud
 - Manual de administracion presupuestaria para areas de salud
 - Manual de indicadores sobre produccion, rendimiento y costs
 - Manual especifico de contabilidad para areas de salud
 - Manual de programacion local
 - Criterios para la asignacion de recursos financieros a los programas de salud
 - Planificacion presupuestaria
 - Recursos humanos y seis anexos
 - Manual de administracion de recursos humanos
 - Manual de procedimientos de suministros para areas de salud
 - Sistemas de informacion y vigilancia epidemiologica
- (v) Detailed project costs

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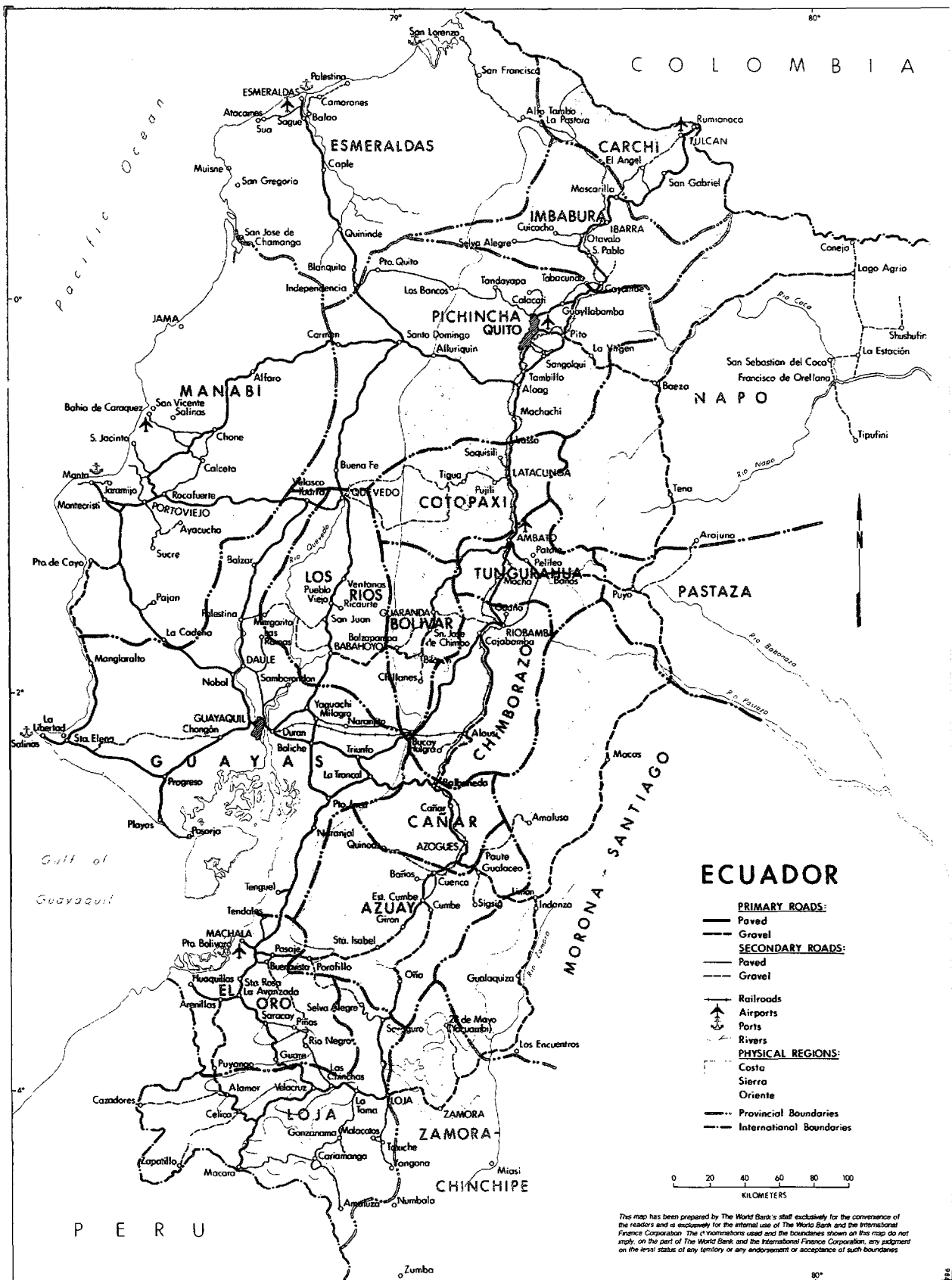
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