

GOVERNMENT OF THE REPUBLIC OF ECUADOR
CENTRO DE REHABILITACION DE MANABI (CRM)

FEASIBILITY STUDY
ON
THE WATER RESOURCES DEVELOPMENT
FOR CHONE-PORTOVIEJO RIVER BASINS

FINAL REPORT
VOLUME II
(ANNEXES)

DECEMBER 1992

JAPAN INTERNATIONAL COOPERATION AGENCY

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LIST OF REPORTS

SUMMARY

1. **VOLUME I**
MAIN REPORT

2. **VOLUME II**
ANNEXES

- A Socio-economy and Institutional Aspects
- B Hydrology
- C Water Supply Plan
- D Irrigation
- E Aquaculture

3. **VOLUME III**
ANNEXES

- F Water Transbasin Plan
- G Topographic Survey
- H Geological Investigation
- I Hydraulic and Structural Design
- J Construction Plan and Cost Estimates
- K Environment

REFERENCE DATA

- No.1 • Topographic Survey
- No.2 • Seismic Refraction Survey
- No.3 • Geotechnical and Soil Mechanical Investigation



Annex A

**SOCIO-ECONOMY AND
INSTITUTIONAL ASPECTS**

**ANNEX A SOCIO-ECONOMY
AND
INSTITUTIONAL ASPECTS**

TABLE OF CONTENTS

	Page
1. NATIONAL SOCIO-ECONOMY	A. 1
1.1 Location and Administratives	A. 1
1.2 Population	A. 2
1.3 Gross Domestic Product	A. 3
1.4 Trade and International Balance of Payment.....	A. 3
1.5 Government Finance	A. 4
2. REGIONAL SOCIO-ECONOMY.....	A. 5
2.1 Location	A. 5
2.2 Population	A. 5
2.3 Gross Regional Product	A. 6
2.4 Agriculture and Livestock	A. 6
2.5 Other Industry.....	A. 7
2.6 Infrastructure.....	A. 8
2.7 Prices and Monetary System	A. 9
3. EFFECTS OF THE PROJECT ON SOCIO-ECONOMY	A.11
3.1 Effect on Labor.....	A.11
3.2 Effect on Regional Economy.....	A.12
3.3 Other Effects.....	A.13
4. INSTITUTIONAL ASPECTS.....	A.14
4.1 General Features of CRM.....	A.14
4.2 Present Situation of CRM.....	A.15
4.2.1 Organization and Function.....	A.15
4.2.2 Collection System of Water Rate.....	A.24
4.2.3 Budgeting and Financing System.....	A.26
4.2.4 Recruiting.....	A.27
4.2.5 Training.....	A.27
4.2.6 Relationship with Other Authorities	A.27

4.3	Recommendation.....	A.28
4.3.1	On Recruitment.....	A.29
4.3.2	On Training.....	A.29
4.3.3	On Institution of CRM	A.31
4.3.4	On Collection System of Water Rates	A.33

		Page
Note 1	Necessities of Training for Extension Workers of Agricultures ..	A.34
Note 2	Water Rates in CEDEGE.....	A.34

LIST OF TABLES

Table A. 1	List of Data Collected
Table A. 2	Population of Ecuador in 1990
Table A. 3	Population Projection
Table A. 4	Gross Domestic Product by Industrial Origin (at Current Prices)
Table A. 5	Gross Domestic Product by Industrial Origin (at 1975 Constant Price)
Table A. 6	Per Capita GNP, GDP and Other Indicator
Table A. 7	International Balance of Trade
Table A. 8	Current Budgetary Position of Government
Table A. 9	Government Finance
Table A.10	Area, Population, Population Density, Number of Household and Persons per Household in Manabi Province in 1990
Table A.11	Population of Manabi Province and Its Projection
Table A.12	Population in Study Area and Its Projection
Table A.13	Population in Study Area by Urban and Rural and Its Projection
Table A.14	Gross Regional Products
Table A.15	Economical Active Population by Industrial Sector in Manabi Province
Table A.16	Economic Active Population in Study Area by Urban and Rural and Its Projection
Table A.17	Agricultural and Livestock Production Volume in Manabi Province
Table A.18	Statistics of Manufacturing by Sector 1981 - 1988
Table A.19	Main Export Products from Manabi Province
Table A.20	Number of Hotels and Beds
Table A.21	Statistics on Infrastructure in Manabi Province
Table A.22	Statistics of Education
Table A.23	Foreign Exchange Rates
Table A.24	Consumer Price Index of Urban Area in Ecuador
Table A.25	Increasing of Consumer Price of Urban Area in Ecuador

LIST OF FIGURES

Fig.A.1	Executive Branch of Government of Ecuador, July 1992
Fig.A.2	Existing Organization of CRM
Fig.A.3	Existing Organization of PHIMA
Fig.A.4	Recommended Institution of CRM in Operative Level
Fig.A.5	Organization Chart of construction Work

1. NATIONAL SOCIO-ECONOMY

1.1 Location and Administratives

Ecuador has an area of 270,670 sq.km. Its continental territory is located on the west coast of South America, between parallels 1°30' latitude north and 5°05' latitude south and between 81° and 75°10' longitude west. It borders Colombia in the north, Peru in the east and south, and the Pacific Ocean in the west. The Galapagos Islands, 1,000 km off the coast, are also part of Ecuador's territory. The equator crosses both the continental territory and the islands.

The Andean range, divided into east and west branches, crosses the country from north to south and forms three natural regions, i.e. the Highlands (called as La Sierra), the Coast (La Costa) and the Amazonic region (La Amazonia/El Oriente). La Sierra consists of ten provinces as Charchi, Imbabura, Pichincha, Cotopaxi, Tungurahua, Bolivar, Chimborazo, Canar, Azuay and Loja. La Costa has five provinces as Esmeraldas, Manabi, Los Rios, Guayas and El Oro, and La Amazonia has five provinces as Sucumbíos, Napo, Pastaza, Morona Santiago and Zamora Chinchipe.

The official language is Spanish. In some regions, Quichua and other languages are spoken. Religion is freedom. The Majority of the population is Catholic.

The government sovereignty resides in the people and is exercised through three branches of government, i.e. the Executive, Legislative and Judicial.

The Executive branch is led by the President of the Republic who is elected by direct suffrage. The Vice-President chairs the National Council for Development (CONADE). Ministries have the following portfolios;

- Ministry of Government and Police,
- Ministry of National Defense,
- Ministry of Foreign Affairs,
- Ministry of Finance and Public Credit,
- Ministry of Education and Culture,
- Ministry of Labor and Human Resources,
- Ministry of Social Welfare,
- Ministry of Public Health,
- Ministry of Agriculture and Livestock,

Ministry of Energy and Mines,
 Ministry of Industry, Commerce, Integration and Fishing, Ministry of Public Works
 and Communication,
 Ministry of Housing and City Planning and
 Ministry of Information and Tourism.

The Executive function of the government is roughly shown in Fig. A.1 including several institutes concerning the Project.

1.2 Population

Population in Ecuador is projected by CONADE as 10,203,000 people in 1990 as shown in the Table below.

Year	1970	1975	1980	1985	1990
Population (in 1,000 people)	6,051	7,035	8,123	9,378	10,203
Urban area	2,393	2,940	3,825	4,881	5,529
Rural area	3,658	4,095	4,298	4,497	4,674
Annual Growth Rate (%)	3.17	3.06	2.92	2.92	2.85
Expectation of Life (years)	56.80	58.90	61.40	64.30	65.40

Source: Oficina de Planificacion, CONADE.

The National Institute of Statistics/Census (INEC) also made a population estimation in each province and its projection targetted to the year 2020 as shown in Table A.2 and A.3. According to this Table, population in 1990 was 9,648,200 people in the whole country, and about 96% of the population were lived in the regions of La Sierra and La Costa. Urbanization of the country was 55 % in 1990, and 44 % in Guayas and Pichincha provinces and 16 % in Manabi and Azuay provinces in the same year.

Population growth ratio of the country was rather high as around 3.0 % during five years from 1970 to 1975, but it gradually decreased since then as indicated in the above Table.

1.3 Gross Domestic Product

Gross Domestic Product (GDP) of Ecuador at current price amounts to S/8,130 billion in 1990 on the increase by about s/7,800 billion against that in 1981 (Table A.4). Its annual growth rates was 43 % as also shown in this Table. However, the real growth rate of GDP at 1975 constant price was only 2 % per annum during the period from 1981 to 1990 shown in Table A.5.

On the other hand, the per capita GDP showed S/791,641 in 1990 at the average growth rate of 38.69 % per annum at current prices, while the real annual growth rate was actually decreased by the rare of 0.75 % at the 1975 constant prices (see Table A.6).

The sectors of agriculture, petroleum and mines, manufacturing and commerce dominated contributing to about 61 % of the GDP in 1990. This tendency has continued since 1981.

1.4 Trade and International Balance of Payment

Exports and imports of Ecuador indicated US\$2,714 million and US\$1,711 million respectively in 1990. Here, the amount of imports, US\$1,711 million, is adjusted by paid balance, whereas the actual import amount was US\$1,862 million as shown in Table A.7.

The export was represented by crude oil which accounted for 46 % of the total exports in 1990. Among the other commodities of exports, agro-industrial commodities such as banana, coffee and shrimp were secondary large part contributing to around 34 % of the total exports in the same year.

Concerning the imports, the primary materials, especially the industrial materials accounted for 44 % of the total imports in 1990. The second important commodity of imports was the industrial goods accounted for 20 %. This tendency has continued since 1981. Those two commodities belong to the industrial sector, so it seems that Ecuador attached importance to industrialization during these ten years.

1.5 Government Finance

In 1990, the Government finance of Ecuador at current budgetary position amounted S/1,363,149 million (equivalent to 16.3 % of the GDP) for net current revenue and S/1,207,566 million (14.5 % of the GDP) for expenditure at the annual rise rates of 48.39 % and 48.45 % respectively during the 1985 - 1990 as shown in Table A.8.

In the expenditure, the development expenditure accounted only for 4.0 % in 1990, or S/48,158 million. Therefore, it seems that the development was limited by funds. And, nearly 70 % of this development expenditure were utilized for MAG, INERHI, CEDEGE, and the CRM which they engaged in developing water resources for potable water, industrial water, irrigation water and so on.

On the other hand, the total finance of the Government amounted S/1,676,782 million in 1990. In 1990, the Ecuadorian Government did not receive any foreign loan, but it has accumulated debt due to former loan. Therefore, the amortization of the loan including interests accounted S/519,552 million in 1990, equivalent to 31 % of the total expenditures (see Table A.9).

2. REGIONAL SOCIO-ECONOMY

2.1 Location

The Manabi province is located north-western coastal area of Ecuador and has an area of 18,879 sq.km. In shape, the province resembles a rectangle which has about 80 km from the east to the west and about 190 km from the north to the south. The north end of the province crosses the equator.

Administratively, Manabi Province consists of 16 districts called as "canton". Those cantons are Bolivar, Chone, El Carmen, Flavio Alfaro, Jipijapa, Junin, Manta, Montecristi, Pajan, Pichincha, Portoviejo, Rocafuerte, Santa Ana, Sucre, Tosagua, Veinticuatro de Mayo (24 de Mayo) and Pedernales. Each canton has towns and villages called as "parroquia" which amount to 66 parroquias.

2.2 Population

National Institute of Statistics and Census (INEC) has executed population census since 1950. According to the last census in 1990, the population in Manabi province was 1,031,927 of which urban and rural population constituted about 41 % and 59 % respectively.

Population density of Manabi was 54.7 persons per sq.km in average. On the other hand, number of households was 187,119 in total, so number of persons per household was 5.5 in average. Details are shown in Table A.10. The average annual growth rate of population of Manabi province was 1.30 % during the period from 1982 to 1990, 2.99 % for the urban population and 0.27 % for the rural population. The population in Manabi province is projected at 1,721,359 people in total in 2020 (see Table A.11).

The study area is located in the central area of Manabi province which has an area of 4,871.0 sq.km consisting of 544.0 sq.km of Bahia area, the lower basin of the Chone river, 2,267 sq.km of the Chone river basin and 2,060.0 sq.km of the Portoviejo river basin. The population of the study area was 484,457 in total in 1990, 46.9 % of the total population of Manabi Province. The population density of the study area was 99.5 persons per sq.km which was almost two times of that of the whole Manabi province. The economically active population in the same area was of 123,151 inhabitants in 1990 (Table A.12). In function of the objectives of the Project, the beneficiary population reaches to 685,641 inhabitants in 1990 and 1,240,686 inhabitants in the year 2000 (Table A.13).

2.3 Gross Regional Product

The Gross regional product (GRP) of Manabi Province was S/.367,418 million in 1989 at current price (see Table A.14), or 6.9 % of the total GDP in Ecuador. In the structure of the GRP, the Agriculture, Forestry and Fishing sector, represent a rather high contribution of about 19.4 % in 1987 and 14.1 % in 1989 to the total GDP in Ecuador comparing with the other sectors. The contribution rates of the same sector to GRP of Manabi province in 1987 and in 1988 were 44.8 % and 42.3 % respectively. It seems that Manabi Province is one of prosperous in regard to this activity.

2.4 Agriculture, Forestry and Fishing

As mentioned above, Manabi Province is one of traditional agricultural province in Ecuador. During these ten years from 1981 to 1990 approximately 40 % or more of economically active population of the province engaged in the activities of this sector as shown in Table A.14. Coffee, cocoa, maize, cotton, banana/platano and orange are the traditional crops. On the other hand, livestock farming is also an important activity of the province, especially cattle and hog farming. In 1990, about 726 thousand heads of cattle and 398 thousand heads of hog were being bred.

The economic active population in the study area was 123,151 in total consisting of 9,346 in Bahia Area, 41,950 in Chone River Basin and 71,855 in Portoviejo River Basin as of 1990 as shown in Table A.12. On the other hand, the economically active population of the beneficiary area was of 166,364 inhabitants in 1990 and according to the projections of the Table A.16, this figure will be increased to 303,199 in the year 2020.

The main cash crops mentioned above, coffee, cocoa, maize, cotton, banana/platano and orange showed their productions of 47,918 tons, 15,755 tons, 89,906 tons, 18,310 tons, 305,493 tons and 36,089 tons in 1990 respectively. The harvested area was 344,707 ha in total in the same year. Total products of those productions were US\$100,189,000, and US\$290/ha in average.

Besides these major products, such marine products as tuna, sardine, macarela and shrimp are also produced in the province. Especially, the aquaculture of shrimp has been developed remarkably at several estuaries including lower reaches of the Chone river. The annual increasing rate of shrimp production was 41.1 % during these ten years. This is very high rate comparing with others.

On cattle cultivation, the area of pasture was 946,300 ha in total in 1990, and 726,100 heads of cattle were bred there. It means 0.77 heads per ha. On the other hand, the products of meat and milk from cattle were US\$46,528,000. According to the figures, the productivity of cattle cultivation is not so high.

Table A.17 shows these situation about agriculture production from 1981 to 1990.

The main inland fishery in Manabi province is a chame cultivation. Generally said, it is a good protein source in the rural area. However, it was remarkably decreased in production in 1991 comparing with 1986.

According to a survey conducted by the Manabi Rehabilitation Center (the CRM), there were 773 ha and 33 cultivators in 1986, and 752 ha and 44 cultivators in 1991. The yields of chame in 1986 and 1991 were 254 metric tons and 153 metric tons, and those unit yields were 329 kg/ha and 205 kg/ha respectively.

On the other hand, the Department of Rural Development of the CRM has initiated a chame cultivation program since 1980. The chame cultivation is not so big factor for economic activities as a whole.

2.5 Manufacture

Table A.18 shows the characteristics of the manufacture in the Manab_ province, there is no other remarkable industry in the province except food industries and agro-industrial crops.

According to this data, the production of textiles, cloths and shoes was seriously decreased during these 8 years from 1981 to 1988. On the other hand, those of the industry on lumbering, wooden products and furnitures, the industry on paper, printing and editing, the chemical industry, and the industry on metal products and machinery were remarkably increased, such amount as S/.844,000 million, S/.383,000 million, 1,570,000 million, and S/.301,000 millon in 1988.

In Manabi Province, there are some small industry and handicraft industries. For example, Montecristi is known as a typical handicraft place, especially for montecristi hat known as panama hat in the world. But it is not so much contributed to the economic activities in Manabi Province because that the handicraft manufacturing is a quite small scale industry. In 1990, the export amount of montecristi hat was US\$3,570 thousand which was only 2.8 % to the total export amount at that time. Export amounts of major products in Manabi Province are shown in Table A.19.

Tourism activity contributes in small scale to the economic activities in Manabi Province. Table A.20 shows the tendency of number of hotels and beds during 10 years from 1981 to 1990. The number of beds both of hotels and hostels were rather more than the others, but these were gradually decreased in number since 1985. On the other hand, there are several beaches along the coastal line of Manabi Province, such as Crucita, San Jacinto, San Clemente, Manta, Bahia, San Vicente, Cayo, Puerto Lopez y Pedernales. These areas, which actually receives local tourism, are expected to be developed in the future.

2.6 Infrastructure and Services

Road is divided into two categories, i.e. (i) trunk road and (ii) secondary road. Total length of the trunk road was 1,174.3 km in 1990, and asphalt-paved road length was 856.3 km (72.9 % of the total length of trunk road). The other one was stone-paved or non-paved road. On the other hand, the total length of secondary road was 4,908.8 km in 1990, but asphalt-paved road length was only 80.1 km, this was a mere 1.6 % of the total length of the secondary road. The 50 % of the provincial area is covered by stoned and paved permanent roads; the non covered areas are located to the north and east of the province. The most serviced area is that of the project.

Number of customers of telephone was 17,750 in 1990 in Manabi Province. Its increasing rate was 6.99 % per annum. In electricity, the total distributed energy was 275,013 kwh and number of customers was 86,717 which their increasing rates were 8.7 % and 6.0 % respectively during the period from 1981 to 1990. On the condition of potable water supply, the popularization rates of water meters of Poza Honda System, La Estancilla System and Chone System were 6.5 %, 7.0 % and 5.2 % during last ten (10) years from 1981 to 1990 respectively. On the other hand, those of other rural supply system which consisting of 26 self-supporting small enterprises for supplying water were 22.6 % during the same period.

Corresponding to the popularization of water meters mentioned above, the number of served persons were also increased as Poza Honda System:6.3 %, La Estancilla System:3.7

%, Chone System:5.2 %, and other rural supply system:28.6 %. Therefore, the volume of paid water were also increased.

Water supply systems served 54 % of the population of Manabi province in 1989. There are four (4) regional water supply systems which served 64 % of the urban population in 1986. Sewage is treated by central sewage systems or individual septic tanks, etc. In 1988, about 350,000 people enjoyed the sewerage services, equivalent to 32 % of the population. The sewerage systems consist of sewage collection network and sewage treatment generally by stabilization lagoons.

Table A.21 indicates the statistics of those infra-structures.

In Ecuador, the education system consists of four (4) schools levels that are "pre-primario" for pre-elementary school, "escuela" for elementary school, "colegio" for high-school, and "universidad" for university.

As a general rule, school ages for these schools are from 6 years old to 11 years for elementary school, 12 years old - 17 years old for high-school and 18 years old - 24 years old for university.

According to the statistics of education as shown in Table A.22, the entrance rate for elementary school, for high-school and for university were 85.2 %, 47.5 % and 9.1 % in 1990 respectively provided that total population of school age for pre-elementary school is included in the population of elementary school age.

Number of pupils for elementary school and high-school were gradually increased as 1.6 % and 3.6 % during last ten (10) years from 1981 to 1990. The rate of illiteracy decreased from 17.82 % to 13.6 % during the 1986-1990 period.

2.7 Price and Monetary System

The monetary unit is the sucre (S/.). In Ecuador, there are three currency exchange markets, i.e. (i) official market, (ii) investment market and (iii) free market.

On August 31, 1988, the official exchange rate was set as S/.390.00 per US Dollar or its equivalent in other currencies for accounting purposes in the Central Bank of Ecuador.

The Monetary Board sets the exchange rate for the investment market. On March 5 1990, the buying rate was set as S/.629.50 per US Dollar. Up to August 1992 this rate was

adjusted upward weekly by S/.3.5 per US Dollar, and selling rate was also fixed at two percent above the buying rate. They became as S/.1,430.00 for buying rate and S/.1,458.60 for selling rate both per US Dollar as of July 31 1992.

The free foreign exchange market consists of banking institutions and foreign exchange offices duly authorized to operate in Ecuador by the Superintendency of Banks. The foreign exchange rate in the free market is set by the supply and demand for foreign exchange. The average of buying and selling rates was S/.1,550.00 and S/.1,555.00 per US Dollar respectively as of July 31 1992. Foreign exchange rates during these several years are shown in Table A.23.

Urban consumer prices in Ecuador rose to 19.0 times in house and household effects in the minimum and 65.4 times in food and drinks in the maximum during these ten years from January 1981 to June 1992 (see Table A.24). Especially it is remarkable that all prices both of food and drinks, house and household effects, cloth, and miscellaneous abruptly rose during last three years from 1988 to 1990.

Monthly increasing rate of urban consumer price was 2.83 % in general index as shown in Table A.24, and the annual one was 40.40 % as shown in Table A.25 during the same period mentioned above.

3. EFFECTS OF THE PROJECT ON SOCIO-ECONOMY

The Project will bring a lot of effects such directly as 1) stable supply of potable water, 2) increase of the irrigated area, 3) increase of employment opportunity, 4) development of the economical activity, and indirectly, 5) stabilization of regional human life, 6) improvement of the health conditions and so on.

3.1 Effect on Labor

The stable supply of potable water and irrigation water are the most important effects of the Project, so this effect should be analysed in the feasibility study hereunder in the form of benefit-cost analysis.

On the socio-economical view point, the increase of employment opportunity is a great expectation from the Project for regional people especially for agriculture sector.

According to the data (see Table A.15), natural growth rate of economic active population in whole industry in Manabi Province was around 4 % per annum during last 10 years from 1981 to 1990, and distribution ratio of the people who engaged in construction sector was around 5 % as of 1990. Therefore, the economic active population for construction sector was about 15,700 persons in 1990.

In case that the economic active population is increased by the same rate to the future, the people engaged in construction sector will be reached at around 23,700 persons in 2000. So the increased number of people engaged in construction sector will be about 8,000 persons in total during 10 years from 1991 to 2000 without the Project.

On the other hand, in case that a distribution rate of labor cost is assumed at 12 % of the total construction cost, the labor cost for the Project will be about US\$23 million.

From the labor cost mentioned above, number of labors can be estimated at 1,940 persons under the condition of average daily wage of labor: US\$10/day, working days in a month: 25 days through a year, construction period: 4 years.

According to the cost data collected shown in Table J.2 in the Iterim Report of this study, the average daily wage for labors was between US\$4 and US\$7 as of October 1991. So the assumed wage rate mentioned above is within safety side enough.

As a result of estimation mentioned above, the Project will be needed about 1,940 labors in total (equivalent to about 24 % of the economic active population in construction sector in natural increase) for execution of the Project.

The economic active population does not mean the people who all are given employment opportunities. Existing unemployment rate is not clear because of lack of data, however there are several data for assuming the employment condition. In 1988, the economic active population for manufacturing sector in Manabi Province had to be 17,680 persons based on the data shown in Table A.15, but actually it was only 5,360 persons for the same sector as shown in Table A.18. Unemployment rate can be estimated at 70 % in manufacturing sector in 1988 based on these figures.

The employment condition is different between manufacturing and construction sectors. But it seems that situation for employment in construction sector is not so far from that in manufacturing sector. In these employment situation, it can be said that the Project will be greatly contributed for increasing the employment opportunity.

3.2 Effect on Regional Economy

In 1989, gross regional product (GRP) in Manabi Province indicated in Table A.14 was of 7.1% of the GDP in the whole country shown in Table A.4., that is lower than the percentages of participation of the province against the country in area and population.

The main purpose of the Project is to stable supply water for both potable, irrigation and aquaculture water use. From this viewpoint, it can be said that GRP will be increased due to economic activity of water supply.

From the main purpose of the Project, the Project will contribute the economic activity in agriculture and aquaculture. It means that GRP will also be increased in agricultural sector. And the farmers economy will be improved due to execution of the Project, too.

The Project will utilize a lot of electricity as mentioned above, so GRP will be increased by electricity during the execution period of the Project and after completion of it for maintenance and operation of the facilities.

3.3 Other Effects

As mentioned in previous item, the Project will contribute to improve the farmers's economy. And the economic active population in agriculture sector will become higher than that without the Project due to develop the arable area. Accordingly, the consumption will increase by farmers. So this activity will reflect to the activity of commerce. The stores or shops will prosper, and the activity of commerce will act as an incitement to trade and transportation.

These commercial activities will accelerate their increase beyond the hystorical tendency. This increase of the commercial activity will spur people on to improve their houses, improvement of village facilities and re-consolidation governmental systems of villages. So the activities of financial and real estate, and community and social services will accelerate more.

4. INSTITUTIONAL ASPECTS

4.1 General Features of CRM

The Manabi Rehabilitation Center (the CRM) was established on November 7, 1962 according to an official decree which was published on November 23 in the same year as a official issue (the Official Register No.314).

The first origin of establishment of the CRM comes from a provincial people's strike which broke out for provoking a drastic countermeasure against the economical stagnation in Manabi Province caused by a prolonged drought in 1962. According to the original legal instrument, the CRM was organized by juridical private persons with social and public purposes. And, its functions were concerned to supply irrigation and potable water and, to urbanize as making houses, paving roads and so on. When the CRM has prepared a development plan, it should be approved by the National Coordination Board for Economical Plan (the old body of CONADE).

On September 14, 1970, the CRM was entirely modified suppressing its autonomy. Since this reform, the CRM was subordinated to the MAG for making best coordination between its own works and nation-wide programs, provided that the same functions were kept.

The CRM was modified again on January 19, 1978 according to the executive decree No.2180, the Official Register No.516.

In this decree it was pointed out that the CRM has to play an important part of the economical and social development of the province, in the same way, it mentioned that the CRM's structure had to be changed in connection with regional organization, and it should be coordinated with other public services so that the population shall effectively get the benefits of development.

At the present time, the CRM is one of the legal authorities established according to public laws with proper funds belonging to the Ministry of Agriculture and Livestock (MAG) legally as shown in Fig.A.1.

4.2 Present Situation of CRM

4.2.1 Organization and Function

i) General

On December 20th of 1991, the CRM has started with a new regulation and organization. Fig.A.2 shows this organization.

According to this new organization, there are several improved points comparing with the old one, as showed in Fig. A.3. First of all, a redefinition of duty for the Vice Executive Director. In the old organization, the Vice Executive Director had administrative and technical functions.

The new organization explains that the responsibility of the Vice Executive Director has become technical matters only. It seems that the CRM will be able to promote the project operation and development more efficiently.

For second point, the new organization includes other unit. That is the Training Department. In case that this new section would be functioned well, it could be good contributed to strengthen technical level of engineers and/or staffs of the CRM.

For the third one, the Directorate of Human Resources and Administration in the old organization was separated into two directorates in the new organization, i.e. (i) the Directorate of Human Resources, and (ii) the Directorate of Administration.

For the fourth point, the Department of Furniture belonging to the Directorate for Finance in the old organization is changed its location to the Directorate for Administration in the new organization.

Details of organization of the CRM and its function are mentioned below.

ii) Objectives of CRM

According to the regulations, the CRM has following main objectives;

- To prepare plans, programs and to formulate development projects for the Manabi province according to the national plans in coordination with public and private organizations in the province for development of resources.
- To execute the works according to those plans, programs and projects, especially for utilizing water resources for irrigation, potable water and sanitation.
- To advise the municipalities about urban development.
- To maintain and promote the plans, programs and projects and to give support for executing the works which will come from public and private sectors in the province.
- To tend for establishment of enterprises or associations for utilizing the resources, and to participate in them for management and maintenance of the works which will be performed and of the other works concerning development for the province.

In general, to conduct the studies which come from the plans, programs and projects mentioned above is the main objective of the CRM for realizing socio-economic development of the Manabi Province.

For realizing those objectives, the CRM has technical and engineering sections mentioned hereafter.

iii) Organization

The CRM is organized by several levels such as directive level, advisor level, auxiliar or supporting level, and operative levels.

The directive level is formed by the Directive Board, the Executive Director and Vice Executive Director.

The advisor level is formed by the Technical Council, the Internal Audit Unit, the Legal Advisor Unit, the Social Communication Unit, the Institutional Development Unit, the Directorate for Regional Planning and the committee for labor and boss relationship.

The Legal Advisor Unit has two departments such as i) the Department of Labor and Penalty and ii) the Department of Civil and Commercial Aspects.

The Directorate for Regional Planning has three departments as i) the Department of Regional Study, ii) the Department of Programming and Planning, and iii) the Department of Monitoring and Evaluation of Regional Projects.

The auxiliar or supporting level is formed by the Directorate for Human Resources, the Directorate for Finance, the Directorate for Administration, the Department of Computation and the Unit of Secretary General.

The Directorate for Human Resources has three departments as i) the Department of Labor Relationships, ii) the Training Department and iii) the Department of Supporting Services.

The Directorate for Finance has also three departments as i) the Department of Budget, ii) the Department of Accountant and iii) the Department of Cash Administrationm.

Three departments belonging to the Directorate for Administration are i) the Department of Procurement and Delivery, ii) the Department of Stock Control and iii) the Department of General Affairs. The Documentation and Filing Section belongs to the Unit of Secretary General.

The operative level is formed by the Directorare for Physical Infrastructure and the Directorate for Socio Economic Development.

The Directorate for Physical Infrastructure consists of seven (7) departments as i) the Department of Study and Design, ii) the Construction Department, iii) the Department of supervision, iv) the Department of Poza Honda Project, v) the Department of Carrizal Chone Project, vi) the Department of Transbasin Project and vii) the Department of Water Plant Project. Among these departments, the departments concerning the specific project as iv), v), vi) and vii) are the temporary sections. When the projects concerned will be completed, the departments will end their existence.

The Directorate for Socio-Economic Development has also seven (7) departments as i) the Department of Programming, Information and Popularization, ii) the Department of Enterprise Development, iii) the Department of River Basin Management, iv) the Department of Study of Water and Soil, v) the Department of Rural Development for Poza Honda Area, vi) the Department of Rural Development for Carrizal Chone Area and vii) the Department of Rural Development for Marginal Area. These departments are correspond to the departments concerning to the specific projects in the Directorate for Physical Infrastructure.

iv) Functions of Directive level

The Directive Board consists of the Minister of Agriculture and Livestock, the Minister of Public Health, the Secretary of Planning of the National Council for Development (CONADE), the Executive Director of the Ecuadorian Institute of Hydraulic Resources (INERHI), the Governor of Manabi Province, the Chairman of the Manabi Development Council, a representative from the Municipal Government of Manabi Province, and a representative from the Private Enterprises Association and a representative from the Association of Labors Union.

The functions of the Directive Board are:

- To set strategies, policies and to make priorities to the proposed objectives for applying to actual cases.
- To approve plans, programs and projects for realizing socio-economic development for the specific region.
- To approve an annual budget of institution and to reform it, and to approve the balance of budget which is reported to the Internal Audit previously.
- To recognize, to approve and to reform the internal regulations, and to consult them to authorities concerned to take legal authentication.
- To authorize the contracts, agreements, loans or other legal acts so that those will represent institutional compromises.
- To evaluate executions of the existing plans, programs and projects.
- To nominate the Executive Director and Internal Auditor and to remove them according to the law.
- To recognize the reports presented by the Executive Director and the Internal Auditor of the institution.
- To authorize procurement-sale of movable properties and real properties, and to be obligated to fulfill the legal precepts.

- To have other rights and attributions according to the laws and regulations concerned.

The Executive Director has the following functions, tasks and attributions.

- To fulfill and to make fulfillment the provisions or regulations and resolutions of the Directive Board.
- To represent the institution of the CRM legally or extra-legally.
- To conduct, to organize and to control the plans, programs and projects which being executed by the institution according to the strategies, policies and priorities established by the Directive Board in coordination with the activities of other public or private offices in Manabi province.
- To conduct, to organize and to control technical, administrative and economical activities of the institution of the CRM.
- To nominate and to accept resignation and removal of official staff, employees and labors from all departments, sections and administrative units according to the existing regulations.
- To elaborate annual working plans for the institution of the CRM together with the Technical Council and to submit them to the Directive Board to take its approval.
- To submit reports requested by the Directive Board and the Government agencies concerned.
- To formulate an annual budget for the institution of the CRM and to reform it, and to submit it to the Directive Board to take its approval.
- To let the Directive Board know about projects which is executing in accordance with the internal regulations, and to submit them to the Board to take its approval.

- To authorize expenses for procurements upto the amount of two hundred times (200 times) of a minimum vital salary according to the existing law and its respective regulation.
- To present reports concerning progress and activities of the executing plans, programs and projects to the Directive Board.
- To act as the Secretary for the Directive Board.
- To have to fulfill the other functions stated in laws, regulations and statements which have been delivered by the Government and other authorities concerned.

The Vice Executive Director has following functions, tasks and attributions.

- To establish projects according to the plans and programs together with their policies, to make budget plan for the Departments for Physical Infrastructure and for Socio-Economic Development, and to apply and to execute them based on the approval of the Directive Board and the Executive Director.
- To supervise and to control the management of the potable water systems of Poza Honda, Chone and La Estancilla and their operative units.
- To propose policies related to studies, designs and construction, and to utilize them to the different projects.
- To conduct and to control the activities of construction works, management and maintenance works of the projects executing by the CRM.
- To supervise and to control staffing and labor who participate to the works in operative units, and to propose re-arranging them for rationalizing and optimizing.
- To subrogate the Executive Director with all his powers, rights, attributions and responsibilities by his order or in case of his absence for more than three (3) days with no justified reasons as well as the case of definite absence until the new nomination would take place by the Directive Board.

- To advise technical, administrative, financial and operative matters of the institution of the CRM to the Executive Director.
- To authorize expenses for procurements upto the amount of fifty times (50 times) of a minimum vital salary according to the existing law and its respective regulation.
- To coordinate with other directors for making development plans and operative plan of the institution of the CRM.
- To manage his staff according to the laws and regulations.
- To have to fulfill the other functions delivered by the Executive Director.

The Technical Council in the advisor level gives advises to the Directive Board and the Executive Director so that they will be able to make decisions concerning the technical and administrative conduct of the institution of the CRM in its respective aspects. The Technical Council also has a function to suggest rules concerned and policies for execution of the plans, programs and projects which should be conducted by technical units of the institution of the CRM. Also the Council suggest about financial sources for execution of the projects.

The Department of Labor and Penalty should deal with legal matters in the field of labor including contracts/agreements between the CRM and labors . It also acts police actions and assists to the judicial process for all legal case when the CRM request.

The Department of Civil and Commercial Affairs has the functions to participate in civil actions on behalf of the CRM including bidding, tendering and contracting that those amount is less than one thousand times (1,000 times) of the minimum vital wage and other functions concerned.

The Unit of Social Communication has to do communication services between each department of the CRM and between the institution of the CRM and organizations and habitants by making press reports or other publications. The services includes to sound of public opinion on the services which given by the institution of the CRM.

The Unit of Institutional Development has the function to study organizational and functional matters and set up coordination mechanism between all the management units so that the institution of the CRM can coordinate smoothly between each department and unit of the CRM. And it makes the annual report on the CRM's activities to the Executive Director.

The Directorate for Human Resources is an important unit for strengthening of the institution of the CRM, especially the Department of Labor Relationship and the Department of Training belonging to it.

The Department of Labor Relationship is the section mainly for recruiting manpower, so its function is as follows.

- To solve contracting problems, administrative indictment and sanctions, and to inform pecuniary and administrative sanctions.
- To manage classification system of employees position, training and personnel selection.
- To evaluate the employees performance for deciding their salaries according to the existing laws and regulations concerned.
- To maintain and to watch over the discipline of the institution of the CRM.
- To manage the collective contract based on the regulations of the labor code and the other laws concerned.
- To coordinate with the Unit of Legal Advisor about legal actions of the employees of the institution of the CRM if any.
- To have the other functions due to the collective contract, the labor code, and others affairs given by the Executive Director and the Director of Human Resources.

The Department of Training is now planned to have following functions.

- To suggest policies and general outline of training matters for the employees of the institution of the CRM.

- To establish and to present an annual training plan based on requirement about training and according to the plans and programs which should be executed by the CRM.
- To manage scholarship programs according to needs of the institution of the CRM in coordination with departments and units of the CRM.
- To coordinate with national and international training organization concerning the scholarship or training courses for the employees of the CRM.
- To keep an actual level of inventory and convenience of employees of the CRM.
- To keep actual information about training organizations, programs, instructors, assistants, materials, and financial resources for training that may be interesting to the CRM.
- To execute, to coordinate and to evaluate the training events.
- To execute the other service directed by the Director for Human resources.

The Department of Assistant Services belonging to the Directorate for Human Resources is the unit in charge of the welfare for the employees of the CRM. A remarkable function included in this department is to plan, to program, to organize and to execute the plans and programs for social and cultural welfare when directed to the employees of the CRM.

The Operative Level consists of two directorates. One is the Directorate for Physical Infraestructure and the other one is the Directorate for Socio-Economic Development.

The functions of the former one are to study, to design, to execute construction works and to supervise them for projects which been executed by the CRM. The studies include a preliminary study, master plan study, pre-feasibility study, and feasibility study.

On the other hand, the functions of the latter one are to guide to establish enterprises and/or associations for irrigation water users, to execute river basin management including environmental monitoring, to study water and soil quality for irrigation, and to develop irrigation water users including measuring irrigation water volume used by farmers and reporting it to the Department of Cash Flow Administration.

v) Scale

Fig.A.2 shows the existing organization of the CRM. As of June 30, 1991, the total staff of the CRM were 1,320 persons consisting in (i) 33 persons of the directive level, (ii) professional staff, 123 persons, (iii) technical staff, 62 persons, (iv) administrative staff, 187 persons, (v) permanent labors, 626 persons and (vi) temporary labors, 289 persons classified by budgetary category. In case of classifying by type of employment, those staff were (i) appointed staff (formal permanent staff) of 298 persons, (ii) contracted staff, 107 persons, (iii) individual contracted labors, 289 persons and (iv) labors by collective contract, 626 persons.

4.2.2 Collection System of Water Rate

According to the law, the management of water should be entrusted to water users. Therefore, water directories of users should be established. However, this kind of association is not established yet because of uncompletion of facilities for supplying water to end users. So that existing collection system of water rate is including in the institution of the CRM.

i) Collection System of Potable Water Rate

At the present time, the CRM establishes special sui-generis systems for management operation and maintenance of potable water services. These are;

- Poza Honda Regional System of Potable Water,
- La Estancilla Regional System of Potable Water, and,
- Chone Regional System of Potable Water.

The Poza Honda Regional System of Potable Water covers the area connecting to Poza Honda water supply system, La Estancilla Regional System covers the area connecting to La Estancilla water supply system and Chone Regional System covers the area connecting to Chone water supply system, respectively, and those systems belong to the institution of the CRM as mentioned above.

The Directive Board decides tariff of potable water to be collected from the customers, and the systems take the following procedure.

- Checking with their own personnel the amount of water consumed by each user.
- Calculating the water rate to be collected.
- Making bill of water rate.
- The customer pays to the accounting section of the enterprise the requested water rate.

These systems are right now directly controlled by the Executive Director and the Vice Executive Director. Actually, they should be separated from the institution of the CRM when they can finance themselves by own income due to water rate according to the national regulation. However, they can not finance themselves at the present time, so that the CRM still supports them financially.

The systems have a technical division and an administrative division, so they control and manage their funds by themselves, and execute maintenance works for facilities of potable water by use their own income and subsidies from the CRM.

ii) Collection System of Irrigation Water Rate

The irrigation water rate is directly collected by the institution of the CRM. The collection system is as follows.

- The Department of Rural Development for Poza Honda Area and the Department of Rural Development for Carrizal Chone Area supervise and check the water used by farmers lived in the area connecting to each irrigation water supply system. The check works include cultivation area of each farmer and cultivation times of each plant as maize, beans and so on. Average cropping period in one cultivation time of these plants is usually 4 months, and it is necessary to irrigate once a week or ten (10) days. So it is necessary to irrigate ten (10) times in average in one cultivation.
- Then it is calculated the water rate to be collected.
- Making bill of water rate, and sending it to the Department of Cash Flow Administration and its copy to each farmer.

- Coming the farmer to the Department of Cash Flow Administration of the institution of the CRM to pay the requested water rate mentioned in the bill of water rate.

As mentioned above, the CRM uses a very simple way to calculate the water rate of irrigation that the water volume is not measured but calculated cultivation area and irrigation times only.

4.2.3 Budgeting and Financing System

The budget making system is as follows;

- (1) Ministry of Finance guides to the CRM the amount level for next year.
- (2) The CRM organizes the next year's budget considering budget plan from each department.
- (3) The CRM makes a final budget plan for next year, and sends it to the Ministry of Finance.
- (4) The Ministry of Finance checks it, and sends it to the National Congress.
- (5) The National Congress approves it, and sends it to the Ministry of Finance.
- (6) The Ministry of Finance acknowledge the approval of budget to the CRM.
- (7) The CRM can use the budget through the Central Bank of Ecuador. And, the CRM has to report the monthly accounting of the budget to the Ministry of Finance.
- (8) In any way and any time, the Ministry of Finance can check the utilization of budget of the CRM.

The sources of budget are: (i) actual tributary revenues, (ii) actual non-tributary revenues, (iii) capital transfers, (iv) actual transfers.

The following Table represent a summary of the effective revenues and expenditures during the last four years.

	(S/million)			
Items	1987	1988	1989	1990
Effective revenue	2,939	2,817	5,368	5,096
Effective expenditure	2,962	2,835	5,289	4,874

The total expenditures consist of (i) remuneration, (ii) services, (iii) consumables and materials, (iv) office furnitures, (v) construction and other investment, (vi) amortizations and loans, (vii) current transfers, and (viii) global budget.

In 1990, the main items of the expenditures were remuneration (20 %), construction and other investment (28 %), amortization and refund of loans (15 %) and current transfer cost for public sector (15 %).

4.2.4 Recruiting

At the present time in Ecuador, there is a systematic recruitment rule, relatively applied. The present formal permanent staff of the CRM were appointed by the Executive Director directly or through some channels. It seems that this is an obstacle to the institution's growth and reinforcement.

4.2.5 Training

As mentioned in previous item, the new organization of the CRM has a training unit. And its functions and obligations are already settled as mentioned in previous item. But, upto the present time, there is no any training plan and program in the institution of the CRM. Therefore, establishment of the training plans and programs will be necessary for strengthening the institution of the CRM.

4.2.6 Relationship with Other Authorities

There are several institutions concerning directly or indirectly to the CRM such as the National Development Council (CONADE), the Ministry of Agriculture and Livestock, the Ecuadorian Institute of Sanitary Works (IEOS), the Ecuadorian Institute of Water Resources (INERHI), the Committee for Guayas River Basin Development (CEDEGE), and the Board of Hydraulic Resources, Jipijapa and Pajan Board of Water Resources (JRH). Those relationship in location in the Governmental organization is shown in Fig.A.1. Besides there is the coordination with the Provincial Council, municipalities and others.

The CONADE is the institution for making national development plan, and it controls and guides to sub-structures on their own development plans as a council. Therefore, the CONADE is the super-structure of the CRM.

The IEOS is the institution for the planning, executing and supervising the plans and projects of potable water and sewage for the country. It also has a right to control the quality of potable water. So some parts are overlapped with the CRM's territory.

The INERHI is the institution for water resources development in Ecuador and it can be named as the water owner. On a water resource for irrigation concerning this Project, the water from the Chone river and the Portoviejo river is also belongs to the INERHI at present. However, the competence of water management and utilization in Manabi province has been transferred to the CRM by means of concessions extended by INERHI.

The CEDEGE is a same kind institution as CRM, which is in charged of development of Guayas river basin, it controls water from the Daule-Peripa dam. At present, there is a coordination between the CEDEGE and the CRM. In this project, the study includes six (6) alternative plans for diverting water from Daule-Peripa to the Portoviejo and Chone river basins.

The JRH is a free-standing private agency with social and public functions with own fund and patrimonial properties, and its headquarters is located in Jipijapa which is southern part of Manabi Province. Its objects are to provide potable water to urban and rural areas of Jipijapa and Pajan, to construct sanitary sewerage and rain water sewerage, to pave the roads and sidewalks of the cities, to provide irrigation water, to develop the production and to promote the economical and social development of the cities of Jipijapa and Pajan. The Institution has a plan to supply potable water to Jipijapa area.

4.3 Recommendation

It seems that the new organization of the CRM is structured as a whole. There are several improved points as mentioned previously comparing with the old one. Especially the operative level was improved for promoting the basic functions of the CRM.

However, the CRM still has several points to be improved such as (1) recruitment system, (2) execution of training, (3) establishment of independent environmental monitoring section, (4) establishment of laboratory for water and soil quality and (5) incorporate the PHIMA unit to the organic and functional structure of the CRM.

4.3.1 On Recruitment

It is regrettable that the institution of CRM has no a rule and procedure for staff recruitment in the Directorate for Human Resources. Basically, employment of permanent staff must not be entrusted to the Executive Director only, but should be made by selection system or merit system for recruiting. And, persons who want to enter into the CRM should be selected by an examination for services controlled by an employment committee consisting of several members from each department.

According to the existing Employment Law for Civil Services and Administrative Career (*Ley de Servicio Civil y Carrera Administrativa*) and related regulation, persons who want to enter into any public organizations and/or institutions should be passed through an examination concerning their career and their professional level.

The CRM should follow this law and regulations. And, if necessary, the CRM should establish its own regulation for employing new staffs like CEDEGE.

In Ecuador, there is a pension system which applied to the employees and labors who are engaged as a formal permanent staff for enterprises or public organizations for 30 years continuously, but no any retirement age system. The annuity of pension is not enough to live, so a great number of the formal permanent staff do not want to retire.

4.3.2 On Training

(1) General

As mentioned above, the training section is established in the new organization. Generally, these kind of training section is for internal staff, i.e. the formal permanent staff, for improvement their skills and empowering them to do their works by proper self-judgment but not by an arbitrary judgment. So that the staff will have a high ambition. For this purpose, it is necessary to have knowledge on not only their specified field of works but also relationships their own works and other fields of works.

Firstly, it will be necessary to give technical knowledge of specified field of works like river improvement, structural design, construction method, how to supervise a construction work, environmental assessment, ecology, water management, soil mechanics, urban and rural development, regional planning, and so on. For the senior training, economic evaluation of the project should also be included. Some knowledges of those fields may be given during the detailed design stage and construction stage.

Furthermore, those training could be executed by use of training organization in and outside of the country and/or universities. In this case, the training unit of the CRM may contribute to make annual training program of the staff.

For making annual training program, the training section should research that what kind of training courses there are in and outside of the countries and universities, and what kind of training courses are necessary for the staff of the CRM at present.

To introduce an evaluation system may be one of ways for keeping specified professional level of the staffs. In this case, the result of evaluation should be reflected to their salaries.

On the other hand, the urgently needed knowledges at present are those after completion of the construction works. Those are:

- 1) how to manage, control and operate pumping stations, dams and other facilities related,
- 2) how to manage and guide farmers for better use of water for their cultivation, and
- 3) how to give a thinking of "water should be paid" to the farmers.

According to water requirement, the farmers should pay S/5,320/ha for one irrigation time in average based on the cost for La Esperanza dam and for the Poza Honda dam. However, they usually pay only S/.90/ha in each irrigation time as the end price. And, this is an existing regulation of the CRM for irrigation water use. This means that the CRM does not employ a real water rate for irrigation.

Therefore, how to manage and guide farmers for better use of water for their cultivation, and how to give a thinking of "water should be paid" to the farmers are the most important knowledges for establishing a self-financing system in the CRM. For training for this purpose, a special training may urgently be necessary because that the situation in which those technical staff is necessary comes just after the completion of the construction works.

(2) Cost Estimation for Special Training

As mentioned above sub item (1), a special training may be necessary for giving knowledges about how to manage, control and operate pumping stations, dams and other facilities related, how to manage and guide farmers for better use of water for their cultivation, and how to give a thinking of "water should be paid" to the farmers.

It is recommended that this training will be executed during the construction stage of this Project of about five (5) years. The necessary cost is estimated as follows:

Conditions:

- 1) Number experts:
 - Civil engineer: one (1) person
 - On-farming-guidance Engineer: one (1) person
 - Total: two (2) persons
- 2) Remuneration for experts: US\$20,000/M (US\$10,000/M each)
- 3) Overseas allowance: between US\$100/day and US\$ 150/day, so that US\$125/day in average.
- 4) Other cost: US\$5,000/round-trip as air fare and any other allowances.
- 5) Period: five(5) years
- 6) Number of returns of experts to their home country: two(2) times a year. When the same experts comes again, a period of stay in the home country should be one (1) month in maximum. Therefore, the period of one (1) training will be five (5) months in average.
- 7) Necessary experts may be changed by each time to come to the site.
- 8) Trainees should be selected and managed by the Training Department of the CRM.
- 9) The experts should be able to speak Spanish language.
- 10) Necessary accommodation should be prepared by the CRM to the experts.

The necessary cost is calculated at:

Remuneration:	US\$20,000/M x 10 months x 5 years	= US\$ 1,000,000
Overseas allowance:	US\$125/day x 30 days x 10 months x 5 years	= US\$ 187,500
Air fare and others:	US\$5,000/time x 2 persons x 9 round-trips	= US\$ 90,000
Miscellaneous cost:	(20 % of the above)	
(For preparation textbooks, printing, copying etc.)		= US\$ 255,500
Total cost:		= US\$ 1,533,000

This amount is less than 1 % of the total construction cost.

4.3.3 On Institution of CRM

The Unit of Integrated Water Resources Plan of Manabi (PHIMA) was established as a special technical group of the CRM with organization as shown in Fig.A.3 based on a request

stated in a technical cooperation agreement with the American States Organization on March 13, 1987. However, this unit is not organically defined in the CRM's structure.

The study team for the Feasibility Study on the Water Resources Development Project for Chone-Portoviejo River Basins executes the studies with this unit of PHIMA as a counterpart team since its Master Plan Study stage, so that the staff of the organization of PHIMA has well trained through the course of the studies.

The CRM must not scatter and lose these well trained staff of the unit of PHIMA. For this purpose, the existing Department of Study and Design within the Directorate for Physical Infrastructure, must be changed into a Directorate level, taking into account the technical resources and functions being developed by PHIMA.

Furthermore, civil engineers as tunnel engineers and/or geotechnicians, soil mechanics engineers, road engineers and hydrologists will be necessary in the construction supervision section during detailed design and construction stages. And technical knowledges should be transferred for these professionals by foreign experts or foreign technical advisors. This will be the most urgently matter for training.

Such institution as the CRM to execute plans, programs and projects which treat social infrastructures and/or natural resources should have an environmental management and/or a monitoring section in its own organization because of their character that those projects must take into account of keeping good environmental circumstances for beneficiaries who use these infrastructures and resources.

In the new organization of the CRM which started from December 1991, the works of environmental monitoring belong to the Department of River Basin Development under the Directorate of Socio-Economic Development.

On the other hand, the similar institution to the CRM like CEDEGE has the environmental monitoring sections in each project which they are executing at the present time. The system of CEDEGE may be good for each project, however this system has no technical information exchange channel with other projects, no connection channel with other sections concerned, so that no feed back systems of monitoring results for taking countermeasures for actual operation and maintenance of the projects as a whole.

From the environmental viewpoint, an independent department of environment is necessary for the institution of the CRM, including an environmental management unit, an environmental monitoring unit and a laboratory. Necessary cost for establishment of the department of environment is recommended in the environmental sector in this report.

Fig.A.4 shows the recommended institution of the CRM in the Operative Level.

Furthermore, a new work office may be necessary to establish additionally for executing this transbasin scheme project. Fig.A.5 shows this new work office. This office should be under control of the headquarters of the CRM.

4.3.4 On Collection System of Water Rate

As mentioned in previous item, the existing collection system of water rate is separated into two systems in potable water and in irrigation water.

According to the Law for Establishment of the Ecuadorian Institute of Hydraulic Resources (the INERHI), a competence of water management and utilization in whole Ecuador is empowered to the INERHI.

However, this competence was transferred to the CRM according to a concession between the INERHI and the CRM as mentioned in previous section. Therefore, the CRM should have a responsibility for establishing a collection system of water rates for self-supporting in finance. And, the construction cost, and the operation and maintenance cost should be recovered by this system and the subsidy from the Government.

This is also an important factor for strengthening for the institution of the CRM.

As mentioned above, the farmers should pay at least S/5,320/ha as an average (after completion of the Project, it will become S/22,940/ha), according to the actual requirement of water. However, they usually pay only S/90/ha in each irrigation time at present. And, this is an existing regulation of the CRM for irrigation water use. This means that the CRM does not use a real water tariff for irrigation.

So the CRM should establish reasonable tariff system for irrigation water, and make the farmers to understand and have willingness to pay the water rates.

(Note 1)

Necessities of Training for Extension Workers of Agriculture

Generally, farmers behavior is not based on expectation of administrative authorities as the CRM.

They usually follow their time-honored customs. For example, a farmer who did not use the irrigated water because of use of rain water do not want to use the irrigated water with pay. Even if he has used the irrigated water upto this time, he do not want to use expensive irrigated water when he has used low price irrigated water upto this time. Because he is afraid of too much expenditure for harvesting.

They usually do not know efficient water use. They do not know too effective use of fertilizer harmonizing with water use. They also sometimes use water without end even no necessary so much use of water volume because that they think it is no necessary to pay for water use.

Therefore, it is necessary to guide or educate to farmers suitable water use with pay and suitable use of fertilizer harmonizing with water use, and this is the way to increase their productivity. Even if they use water and fertilizer with pay which are expensive a little bit comparing with their time-honored way, they should know that to keep and increase their productivity is economically feasible by this way.

For this purpose, extension workers who guide and educate the farmers will be necessary to train. This is the way to keep the project sustainability in the future. These kind of extension workers will usually be necessary several hundred persons. So that it is recommended that the training program would be planned in the detailed design stage.

(Note 2)

Water Rates in CEDEGE

Revenue from water rates is the most important financial factor for self-supporting of water resources development authorities like the institution of the CRM or CEDEGE.

For reference, the tariff system for irrigation water use in CEDEGE is introduced as follows.

1. The irrigation area which belongs to Transbasin Project
Upto June 1992: S/.12.00/m³
From July 1992: S/.18.00/m³
Annual average: US\$ 0.17/m³ (scheduled)

If the same water requirement estimated in the transbasin project (this project) in Manabi province is applied to this, the price to be applied from July 1992, S/.18.00/m³, becomes S/.2,510/ha/irrigation time.

2. The irrigation area which belongs to Babahoyo Project
Existing price: S/.28,000/ha/year
3. The irrigation area which belongs to Jaime Roldos Aguilera Project(17,000 ha)

Existing price: S/.86,400/ha/year

The irrigation water prices mentioned above are not reflected real construction cost for all facilities, so that the prices are not the true price because that CEDEGE has gotten subsidies for a part of the construction cost from the Government.

(From result of interview to CEDEGE on Aug.5, '92)

T A B L E S

Table A.1 List of Data Collected (1/3)

No.	Title	Source
1	Investing in Ecuador (English Ver.)	Central Bank of Ecuador
2	Manabi Frente al Pais, Estadística Basica 1989 (Manabi's Face against the Country, Basic Statistics 1989)	Centro de Rehabilitacion de Manabi (CRM)
3	Manabi en Cifras 1989 (Manabi in Figures 1989)	CRM
4	Informacion Estadística Quincenal No.1664, Septiembre 30 de 1991 (Semi-monthly Statistic Information No.1664, September 30, 1991)	Banco Central del Ecuador
5	Estadística de Industrias 1980 - 1989 (Statistics of Industries 1980 - 1989)	Balances de Compañías
6	Boletín Anuario No.11 (Annual Bulletin No.11)	Banco Central del Ecuador
7	Boletín Anuario No.13 (Annual Bulletin No.13)	Banco Central del Ecuador
8	Guía Institucional CRM, 24 Años de CRM en el Desarrollo de Manabi (Institutional Guide of CRM, Its 24 Years of Development in Manabi)	CRM
9	Reglamento Organico Funcional del Centro de Rehabilitacion de Manabi (Regulation of Organic Functions of Manabi Rehabilitation Center) (Plan)	CRM
10	Estructura Organica del Centro Rehabilitacion de Manabi (Organization Structure of Manabi Rehabilitation Center)	CRM

Table A.1 List of Data Collected (2/3)

No.	Title	Source
11	Organigrama Estructural del Sector Publico Ecuatoriano (Structural Organization of Ecuadorian Public Sector)	Direccion Normas Consolidacion Financiera de La Contraloria General del Estado
12	Non title (Financial data of CRM)	CRM
13	Ley de Creacion del INERHI, Ley de Aguas, Reglamento de la Ley de Aguas Reformas a la Fecha (1985) (Establishment Law of INERHI, Water Law, Application Regulation of Water Law Reformed for the Year 1985)	INERHI
14	Organigrama del INERHI (Organization of INERHI)	INERHI
15	Reglamento Organico y Funcional del Ministerio de Agricultura y Ganaderia (Organic Regulation and Function of Ministry of Agriculture and Live-stock)	MAG
16	Reglamento Organico y Funcional del Instituto Ecuatoriano de Obras Sanitarias (Organic Regulation and Function of Ecuadorian Institute of Sanitary Works)	IEOS
17	Organigrama Estructural del IEOS (Organization Structure of IEOS)	IEOS
18	Ley Organica del CONADE (Organization Law of CONADE)	CONADE
19	Organigrama Estructural del Consejo Nacional de Desarrollo (Organization Structure of CONADE)	CONADE
20	Reglamento Organico Funcional de la Junta de Recursos Hidraulicos, Fomento y Desarrollo de los Cantones Jipijapa y Pajan (Regulation of Organic Function of Board of Hydraulic Resources, Its Promotion and Development of Jipijapa and Pajan Regions)	JRH

Table A.1 List of Data Collected (3/3)

No.	Title	Source
21	Reglamento Organico Funcional del CEDEGE (Regulation of Organic Function of CEDEGE)	CEDEGE
22	Organigrama Estructural de CEDEGE (Organization Structure of CEDEGE)	CEDEGE
23	Report of the Environmental Impacts of the Daule-Peripa Reservoir (English Ver.)	The Daule-Peripa Dam Control Office
24	Report on Operation and Maintenance of Daule-Peripa Dam (English Ver.)	The Daule-Peripa Dam Control Office
25	Estudio de Precios de la Tierra para Expropiacion (Study of Land Prices for Compensation)	PHIMA
26	Resumen de Concesiones de Agua Efectuadas por el INERHI (Resume of Concession for Effectual Water Use by INERHI)	INERHI

Table A.2 Population of Ecuador in 1990

Province	Population by province in 1990			
	Urban	Rural	Total	(%)
SIERRA	2,262,050	2,139,368	4,401,418	45.62%
Carchi	57,508	83,974	141,482	1.47%
Imbabura	129,174	136,325	265,499	2.75%
Pichincha	1,279,997	476,231	1,756,228	18.20%
Cotopaxi	65,419	210,905	276,324	2.86%
Tungurahua	151,552	210,428	361,980	3.75%
Bolivar	32,650	122,438	155,088	1.61%
Chimborazo	119,813	244,869	364,682	3.78%
Canar	55,519	133,828	189,347	1.96%
Azuay	218,619	287,471	506,090	5.25%
Loja	151,799	232,899	384,698	3.99%
COSTA	2,976,444	1,817,388	4,793,832	49.69%
Esmeraldas	134,960	171,668	306,628	3.18%
Manabi	433,091	598,836	1,031,927	10.70%
Los Rios	199,374	328,185	527,559	5.47%
Guayas	1,918,270	596,876	2,515,146	26.07%
El Oro	290,749	121,823	412,572	4.28%
AMAZONIA	99,351	273,182	372,533	3.86%
Sucumbios	20,492	56,460	76,952	0.80%
Napo	23,629	79,758	103,387	1.07%
Pastaza	15,127	26,684	41,811	0.43%
Morona Santiago	23,799	60,417	84,216	0.87%
Zamora Chinchipe	16,304	49,863	66,167	0.69%
ISLANDS	8,013	1,772	9,785	0.10%
Galapagos	8,013	1,772	9,785	0.10%
Non-stated zone	0	70,621	70,621	0.73%
Total	5,345,858	4,302,331	9,648,189	100.00%
% of total	55.41%	44.59%	100.00%	

Source: Estimacion de Poblacion 1950 - 2000, INEC.

Table A.3 Population Projection

Year	Population	Year	Population
1950	3,310,080	1987	9,243,391
1951	3,102,533	1988	9,376,400
1952	3,197,602	1989	9,511,324
1953	3,596,060	1990	9,648,189
1954	3,698,681	1991	9,775,545
1955	3,806,210	1992	9,904,582
1956	3,918,221	1993	10,035,323
1957	4,034,107	1994	10,167,789
1958	4,154,672	1995	10,302,001
1959	4,280,692	1996	10,437,990
1960	4,412,940	1997	10,575,772
1961	4,551,483	1998	10,715,372
1962	4,695,805	1999	10,856,815
1963	4,815,805	2000	11,000,125
1964	5,001,381	2001	11,133,227
1965	5,162,440	2002	11,267,939
1966	5,329,658	2003	11,404,281
1967	5,503,106	2004	11,542,272
1968	5,681,775	2005	11,681,934
1969	5,864,581	2006	11,823,285
1970	6,050,555	2007	11,966,347
1971	6,239,533	2008	12,111,140
1972	6,432,199	2009	12,257,685
1973	6,628,771	2010	12,406,003
1974	6,829,467	2011	12,544,950
1975	7,034,504	2012	12,685,454
1976	7,242,908	2013	12,827,531
1977	7,451,531	2014	12,971,199
1978	7,670,843	2015	13,116,477
1979	7,893,296	2016	13,263,381
1980	8,123,354	2017	13,411,931
1981	8,361,285	2018	13,562,145
1982	8,606,116	2019	13,714,041
1983	8,729,955	2020	13,867,638
1984	8,855,577		
1985	8,983,006		
1986	9,112,268		

Source: Estimacion de Poblacion 1950-2000, INEC

Table A.4 Gross Domestic Product by Industrial Origin
(at current price)

(S./million)

Industrial Origin	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	Annual growth rate(%)
Agriculture & livestock	41,631	50,356	73,005	110,003	147,979	208,743	274,583	432,834	728,236	1,101,385	43.90%
Petroleum & mine	44,015	52,412	86,115	126,833	189,516	137,969	122,567	296,983	630,974	1,257,242	45.13%
Manufacturing	59,951	73,874	103,642	168,016	210,259	274,177	350,257	644,829	1,209,721	1,903,455	46.85%
Electricity, gas & water	2,546	3,693	3,285	4,002	3,401	6,487	7,413	2,169	1,210	2,127	-1.98%
Construction	30,522	37,576	34,423	36,743	48,593	67,267	98,981	139,728	243,791	307,587	29.27%
Commerce	46,339	57,552	76,347	130,164	173,338	246,833	363,144	610,927	1,118,397	1,728,684	49.50%
Transportation & communication	29,861	36,025	54,301	57,944	94,931	125,565	169,713	296,262	460,243	695,369	41.87%
Financial and real estate	39,845	46,256	58,638	67,804	83,884	104,957	151,419	243,524	338,337	507,698	32.68%
Community & social services	18,772	22,018	29,792	34,984	46,826	56,968	77,288	115,017	212,516	330,665	37.54%
GDP at factor cost	313,482	379,762	519,548	736,493	998,727	1,228,966	1,615,345	2,782,273	4,943,425	7,834,212	42.99%
Indirect cost & others	12,383	12,130	15,716	26,776	42,034	64,344	77,419	120,877	196,200	295,257	42.25%
GDP at current price	325,865	391,892	535,264	763,269	1,040,761	1,293,310	1,692,764	2,903,150	5,139,625	8,129,469	42.96%
DISTRIBUTION PERCENTAGE (%)											
Agriculture & livestock	12.78%	12.85%	13.64%	14.41%	14.22%	16.14%	16.22%	14.91%	14.17%	13.55%	
Petroleum & mine	13.51%	13.37%	16.09%	16.62%	18.21%	10.67%	7.24%	10.23%	12.28%	15.47%	
Manufacturing	18.40%	18.85%	19.36%	22.01%	20.20%	21.20%	20.69%	22.21%	23.54%	23.41%	
Electricity, gas & water	0.78%	0.94%	0.61%	0.52%	0.33%	0.50%	0.44%	0.07%	0.02%	0.03%	
Construction	9.37%	9.59%	6.43%	4.81%	4.67%	5.20%	5.85%	4.81%	4.74%	3.78%	
Commerce	14.22%	14.69%	14.26%	17.05%	16.65%	19.09%	21.45%	21.04%	21.76%	21.26%	
Transportation & communication	9.16%	9.19%	10.14%	7.59%	9.12%	9.71%	10.03%	10.20%	8.95%	8.55%	
Financial and real estate	12.23%	11.80%	10.95%	8.88%	8.06%	8.12%	8.95%	8.39%	6.58%	6.25%	
Community & social services	5.76%	5.62%	5.57%	4.58%	4.50%	4.40%	4.56%	3.96%	4.13%	4.07%	
GDP at factor cost	96.20%	96.90%	97.06%	96.49%	95.96%	95.02%	95.43%	95.84%	96.18%	96.37%	
Indirect cost & others	3.80%	3.10%	2.94%	3.51%	4.04%	4.98%	4.57%	4.16%	3.82%	3.63%	
GDP at current price	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	

Source: Banco Central del Ecuador.

Table A.5 Gross Domestic Product by Industrial Origin
(at 1975 constant price)

Industrial Origin	(S./million)										Annual growth rate(%)
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	
Agriculture & livestock	22,647	231,101	19,891	22,007	24,178	26,656	27,323	29,416	30,364	31,525	3.74%
Petroleum & mine	15,992	15,527	19,893	21,879	23,875	24,513	11,107	23,964	22,133	22,484	3.86%
Manufacturing	29,159	29,584	29,183	28,643	28,710	28,241	28,729	29,312	28,787	29,474	0.12%
Electricity, gas & water	1,117	1,241	1,426	1,836	1,833	2,232	2,616	2,721	2,818	2,984	11.54%
Construction	7,239	7,285	6,728	6,583	6,742	6,841	7,011	6,024	6,220	5,914	-2.22%
Commerce	25,032	25,562	22,537	23,467	24,263	24,793	25,397	25,925	26,366	26,854	0.78%
Transportation & communication	10,517	10,687	10,511	10,914	11,506	12,571	12,829	13,620	14,532	15,438	4.36%
Financial and real estate	18,274	18,590	18,972	17,679	18,162	18,579	21,095	22,679	19,587	19,574	0.77%
Community & social services	8,240	8,710	9,098	9,366	9,529	9,773	10,067	10,082	10,403	10,618	2.86%
GDP at factor cost	147,846	149,892	147,279	153,378	159,849	164,898	154,810	171,628	172,045	176,245	1.97%
Indirect cost & others	5,597	5,373	3,606	3,848	4,205	4,238	4,206	4,114	4,783	4,707	-1.91%
GDP at 1975 constant price	153,443	155,265	150,885	157,226	164,054	169,136	159,016	175,742	176,828	180,952	1.85%
DISTRIBUTION PERCENTAGE (%)											
Agriculture & livestock	14.76%	148.84%	13.18%	14.00%	14.74%	15.76%	17.18%	16.74%	17.17%	17.42%	
Petroleum & mine	10.42%	10.00%	13.18%	13.92%	14.55%	14.49%	6.98%	13.64%	12.52%	12.43%	
Manufacturing	19.00%	19.05%	19.34%	18.22%	17.50%	16.70%	18.07%	16.68%	16.28%	16.29%	
Electricity, gas & water	0.73%	0.80%	0.95%	1.17%	1.12%	1.32%	1.65%	1.55%	1.59%	1.65%	
Construction	4.72%	4.69%	4.46%	4.19%	4.11%	4.04%	4.41%	3.43%	3.52%	3.27%	
Commerce	16.31%	16.46%	14.94%	14.93%	14.79%	14.66%	15.97%	14.75%	14.91%	14.84%	
Transportation & communication	6.85%	6.88%	6.97%	6.94%	7.01%	7.43%	8.07%	7.75%	8.22%	8.53%	
Financial and real estate	11.91%	11.97%	12.57%	11.24%	11.07%	10.98%	13.27%	12.90%	11.08%	10.82%	
Community & social services	5.37%	5.61%	6.03%	5.96%	5.81%	5.78%	6.33%	5.74%	5.88%	5.87%	
GDP at factor cost	96.35%	96.54%	97.61%	97.55%	97.44%	97.49%	97.35%	97.66%	97.30%	97.40%	
Indirect cost & others	3.65%	3.46%	2.39%	2.45%	2.56%	2.51%	2.65%	2.34%	2.70%	2.60%	
GDP at 1975 constant price	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	

Source: Banco Central del Ecuador.

Table A.6 Per Capita GNP, GDP and Other Indicator

Indicator	(S/./capita)										Annual growth rate(%)
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	
GROSS NATIONAL PRODUCT (GNP)	39,510	44,716	50,536	81,192	110,455	133,231	170,884	280,361	480,409	730,338	38.28%
CURRENT PRICE											
Gross Domestic Product (GDP)	41,699	48,305	63,255	89,154	119,237	144,930	183,381	300,973	517,656	791,641	38.69%
Gross Disposable Profits	39,664	44,862	58,756	81,391	110,683	133,462	173,463	283,036	485,490	737,801	38.38%
Final Consumption of Household	25,674	30,467	41,697	57,115	76,881	96,999	129,722	208,002	368,533	550,531	40.58%
Gross Saving	8,041	7,638	9,150	13,346	20,123	18,993	20,194	40,457	69,611	123,130	35.42%
Income	12,591	13,946	15,327	19,696	24,931	31,593	40,987	54,799	75,998	100,596	25.97%
Gross Fixed Capital Formation	9,284	10,942	10,503	13,739	19,149	27,242	41,551	64,073	107,909	144,817	35.70%
Net Credit	(1,634)	(4,561)	(2,047)	(2,113)	(1,665)	(11,379)	(21,618)	(24,793)	(43,048)	(30,658)	38.51%
1975 CONSTANT PRICE											
Gross Domestic Product (GDP)	18,352	18,041	17,035	17,249	17,624	17,721	16,250	17,516	17,189	17,156	-0.75%
Final Consumption of Household	12,499	12,361	11,717	11,695	11,864	11,672	11,661	11,593	11,614	11,572	-0.85%
Gross Fixed Capital Formation	3,880	3,796	2,724	2,527	2,645	2,690	2,739	2,538	2,503	2,416	-5.13%
Export	3,857	3,561	3,545	3,876	4,250	4,500	3,682	4,708	4,441	4,576	1.92%
Import	4,958	5,148	3,773	3,578	3,760	3,659	4,117	3,612	3,671	3,627	-3.41%

Source: Banco Central del Ecuador.

Table A.7 International Balance of Trade

(US\$ million)

Commodity	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	Annual growth rate(%)
EXPORT, FOB	2,168	2,237	2,226	2,620	2,905	2,186	2,021	2,202	2,354	2,714	2.53%
Crude oil	1,175	1,390	1,552	1,678	1,825	912	646	875	1,033	1,258	0.76%
Banana	218	116	146	135	220	263	267	298	370	468	8.86%
Coffee	102	143	151	175	191	299	192	152	142	104	0.22%
Shrimp	93	121	146	160	156	288	383	387	328	340	15.49%
Cocoa	40	56	12	96	138	71	83	78	56	75	7.23%
Jute	10	9	8	12	9	8	9	8	9	8	-2.45%
Timber	13	10	9	8	9	0	1	12	12	12	-0.89%
Tuna	-	-	-	-	5	17	21	18	30	27	40.11% **
Other fishes	11 *	9 *	8 *	7 *	4	9	15	17	19	25	18.84% *
Others	506	383	194	349	339	319	404	357	355	397	-2.66%
IMPORT (adjusted by paid balance)	2,353	2,187	1,421	1,567	1,611	1,643	2,054	1,583	1,693	1,711	-3.48%
IMPORT (actual amount), CIF	1,921	2,425	1,475	1,616	1,767	1,810	2,158	1,714	1,855	1,862	-0.35%
Consumption goods	392	466	182	339	350	283	413	223	256	270	-4.06%
Non-durable goods	99	148	102	112	94	102	125	101	137	99	0.00%
Durable goods	73	91	61	48	58	68	84	63	48	79	0.88%
Oil and lubricant	220	227	19	179	198	113	204	59	71	92	-9.23%
Primary materials	554	837	675	714	891	852	918	820	982	982	6.57%
Agro-industrial materials	36	52	43	56	72	63	53	62	91	85	10.02%
Industrial materials	452	689	585	622	769	726	792	707	839	811	6.71%
Construction materials	66	96	47	36	50	63	73	51	52	86	2.98%
Capital goods	744	851	451	390	525	673	732	665	608	605	-2.27%
Agro-industrial goods	31	30	20	13	34	35	29	12	13	25	-2.36%
Industrial goods	461	534	320	260	339	408	501	404	389	376	-2.24%
Transportation equipment	252	287	111	117	152	230	202	249	206	204	-2.32%
Others	231	271	167	173	1	2	95	6	9	5	-34.68%
International balance of trade	(185)	50	805	1,053	1,294	543	(33)	619	661	1,003	

Source: Banco Central del Ecuador.

(Note): Lack of data. *: Including tuna. **: During 1985 - 1990.

Table A.8 Current Budgetary Position of Government

(S/.million)

Item	1985	1986	1987	1988	1989	1990	Annual rise rate(%)
Current Revenue	190,595	191,962	241,370	415,474	835,519	1,363,160	48.21%
Current Revenue (Non-Petroleum)	74,924	117,268	150,240	250,268	442,713	669,783	54.98%
Revenue from Petroleum	113,975	73,612	89,633	164,798	391,843	690,352	43.37%
Transfer Revenue	1,696	1,083	1,497	409	964	3,024	12.26%
Certified Tributaries & Board	(1,124)	(5,159)	(4,608)	(19)	(125)	(11)	-60.36%
Net Current Revenue	189,472	186,803	236,762	415,456	835,394	1,363,149	48.39%
Expenditure	167,501	217,955	278,588	416,828	738,167	1,207,566	48.45%
Deficit(-) or Surplus(+)	21,971	(31,152)	(41,862)	(1,372)	97,227	155,583	-
Sources of Financing Deficit	(17,755)	36,495	45,262	9,387	49,842	21,937	-
Internal Loan	(13,970)	14,044	32,541	44,741	41,670	174,372	-
Foreign Loan	(3,785)	22,451	12,721	(35,354)	(91,513)	(152,435)	-
Cash Balance	4,216	(5,343)	(3,400)	(8,015)	47,385	133,646	99.62%

Source: Banco Central del Ecuador.

Table A.9 Government Finance

(S./million)

Item	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	Annual rise rate(%)
RECEIPT											
Net Current Revenue	39,297	45,996	60,187	99,873	189,472	186,803	236,762	415,456	835,394	1,363,149	48.30%
Capital Income	22,808	26,875	20,794	20,588	(5,808)	56,289	135,378	72,167	80,586	225,480	28.99%
Internal Finance	13,229	11,542	20,794	20,588	(5,808)	22,761	45,484	62,092	78,106	225,480	37.04%
Foreign Loan	9,589	15,333	-	-	-	33,528	89,894	10,075	2,480	-	-
Initial Balance	669	1,017	667	1,499	5,229	14,896	25,270	28,743	40,759	88,153	72.00%
Total Receipt	62,105	72,871	80,981	120,460	188,893	257,988	397,410	516,366	956,738	1,676,782	44.22%
EXPENDITURE											
Ordinary Expenditure	45,069	47,385	54,358	78,753	124,279	173,065	232,189	327,254	549,291	843,398	38.47%
Expenditure for Development	4,248	4,533	4,079	4,161	7,302	7,475	9,156	13,675	25,221	48,158	30.97%
Amortization of Loan	10,907	19,603	22,025	34,050	47,745	57,071	127,359	134,678	294,084	519,552	53.62%
Interest Payment (Internal)	1,869	2,078	3,000	4,625	9,260	11,208	13,733	20,864	31,638	40,491	40.74%
Interest Payment (External)	4,954	9,867	12,797	19,118	26,660	26,207	23,510	55,034	132,017	275,517	56.28%
Amortization (Internal)	2,163	2,314	3,962	6,249	8,040	8,579	12,943	13,352	36,436	51,109	42.10%
Amortization (External)	1,921	5,344	2,266	4,058	3,785	11,077	77,173	45,428	93,993	152,435	62.58%
Final Balance	1,881	1,350	519	3,496	9,567	20,377	28,706	40,759	88,142	265,674	73.33%
Total Expenditure	62,105	72,871	80,981	120,460	188,893	257,988	397,410	516,366	956,738	1,676,782	44.22%

Source: Banco Central del Ecuador.

Table A.10 Area, Population, Population Density, Number of Household and Persons per Household in Manabi Province in 1990

I t e m	Area (sq.km)	Population		Population Density	Number of Household	Persons per Household
		Total	%			
Total	18,878.80	1,031,927	100.00%	54.66	187,119	5.51
Portoviejo	967.50	202,112	19.59%	208.90	36,756	5.50
Bolivar	537.80	37,580	3.64%	69.88	6,460	5.82
Chone	3,570.60	115,646	11.21%	32.39	20,634	5.60
El Carmen	1,216.80	54,070	5.24%	44.44	9,710	5.57
Flavio Alfaro	1,347.10	23,613	2.29%	17.53	4,338	5.44
Jipijapa	1,835.00	82,807	8.02%	45.13	15,407	5.37
Junin	247.30	17,992	1.74%	72.75	3,045	5.91
Manta	306.20	132,816	12.87%	433.76	24,978	5.32
Montecristi	831.20	37,660	3.65%	45.31	6,680	5.64
Pajan	1,085.60	42,446	4.11%	39.10	8,228	5.16
Pichincha	1,076.10	28,827	2.79%	26.79	4,920	5.86
Rocafuerte	280.40	26,021	2.52%	92.80	4,796	5.43
Santa Ana	1,275.10	59,330	5.75%	46.53	10,348	5.73
Sucre	2,014.70	75,361	7.30%	37.40	13,946	5.40
Tosagua	377.50	31,778	3.08%	84.18	5,514	5.76
24 de Mayo	523.90	34,016	3.30%	64.93	6,346	5.36
Pedernales	1,386.00	29,842	2.89%	21.53	5,013	5.95

Source: INEC

Table A.11 Population in Manabí Province and Its Projection (1/2)

Canton	1962			1974			1982			1990			1995*		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
	Total	138,508	502,813	641,321	237,101	594,043	831,144	330,280	600,664	930,944	416,525	610,389	1,026,914	451,018	670,214
Portoviejo	48,311	47,340	95,651	80,210	46,747	126,957	102,628	64,457	167,085	132,937	69,175	202,112	154,860	73,778	228,638
Bolivar	0	40,005	40,005	0	33,990	33,990	0	33,963	33,963	0	37,580	37,580	0	40,064	40,064
Chone	13,156	91,246	104,402	23,837	99,631	123,468	34,099	104,763	138,862	41,718	73,928	115,646	46,938	76,918	123,856
El Carmen	0	0	0	7,196	26,875	34,071	11,928	26,150	38,078	22,870	31,200	54,070	2,989	57,866	60,855
Flavio Alfaro	813	16,292	17,105	1,791	18,981	20,772	3,349	20,919	24,268	3,601	20,012	23,613	3,769	20,213	23,982
Jipijapa	13,367	53,224	66,591	19,996	58,292	78,288	27,146	45,794	72,940	32,225	50,582	82,807	35,579	53,191	88,770
Junin	1,109	15,469	16,578	2,257	5,438	7,695	3,376	14,527	17,903	3,870	14,122	17,992	4,190	14,122	18,312
Manta	33,662	6,626	40,288	64,519	5,496	70,015	100,338	6,026	106,364	125,505	7,311	132,816	143,668	8,219	151,887
Montecristi	4,540	14,368	18,908	6,386	19,018	25,404	8,129	23,664	31,793	9,642	28,018	37,660	10,646	30,875	41,521
Paján	1,818	34,379	36,197	2,610	42,612	45,222	4,909	36,612	41,521	5,489	36,957	42,446	5,855	37,113	42,968
Pichincha	0	11,674	11,674	0	23,647	23,647	0	24,408	24,408	0	28,827	28,827	0	30,963	30,963
Rocafuerte	4,349	14,156	18,505	5,519	15,413	20,932	6,492	17,469	23,961	6,958	19,063	26,021	7,223	20,035	27,258
Santa Ana	3,940	43,652	47,592	5,004	55,379	60,383	6,021	52,896	58,917	6,368	52,962	59,330	6,627	53,701	60,328
Sucre	8,845	66,303	75,148	11,258	82,506	93,764	12,360	75,208	87,568	13,826	86,364	100,190	15,724	96,585	112,309
Tosagua	2,020	16,495	18,515	3,589	20,410	23,999	5,457	21,585	27,042	7,074	24,704	31,778	8,281	26,987	35,268
24 de Mayo	2,578	31,584	34,162	2,929	39,608	42,537	4,048	32,223	36,271	4,442	29,584	34,026	4,669	29,584	34,253
Pedernales										1,482	3,531	5,013	1,685	3,949	5,634

Source: INEC

(note) *: Projected by PHIMA, CRM.

Table A.11 Population in Manabí Province and Its Projection (2/2)

Canton	2000*			2005*			2010*			2015*			2020*		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Total	544,663	676,475	1,221,138	619,341	709,504	1,328,845	701,460	744,562	1,446,022	791,358	782,537	1,573,895	892,514	818,818	1,711,332
Portoviejo	179,525	78,931	258,456	207,110	84,682	291,792	237,775	91,081	328,856	271,655	98,177	369,832	308,854	105,928	414,782
Bolivar	0	42,142	42,142	0	43,943	43,943	0	45,802	45,802	0	47,754	47,754	0	49,742	49,742
Chone	52,555	77,257	129,812	58,563	77,307	135,870	64,945	77,307	142,252	71,675	77,307	148,982	78,720	77,307	156,027
El Carmen	36,900	31,939	68,839	46,205	32,027	78,232	57,305	32,027	89,332	70,392	32,027	102,419	89,643	28,027	117,670
Flavio Alfaro	3,903	20,314	24,217	4,022	20,308	24,330	4,124	20,314	24,438	4,207	20,314	24,521	4,270	20,314	24,584
Jipijapa	39,090	55,973	95,063	42,737	58,922	101,659	46,495	61,965	108,460	50,336	65,219	115,555	54,226	68,008	122,234
Jumín	4,514	14,122	18,636	4,839	14,122	18,961	5,162	14,122	19,284	5,479	14,122	19,601	5,787	14,122	19,909
Maná	163,660	9,207	172,867	185,528	10,276	195,804	209,294	11,428	220,722	234,955	12,663	247,618	261,742	13,979	275,721
Montecristi	11,697	33,871	45,568	12,788	36,991	49,779	13,913	40,216	54,129	15,062	43,527	58,589	16,226	46,900	63,126
Paján	6,215	37,247	43,462	6,532	37,356	43,888	6,865	37,439	44,304	7,120	37,555	44,675	7,409	37,523	44,932
Pichincha	0	33,161	33,161	0	34,391	34,391	0	35,191	35,191	0	35,683	35,683	0	36,022	36,022
Rocafuerte	7,461	20,953	28,414	7,668	21,805	29,473	7,842	22,579	30,421	7,980	23,265	31,245	8,080	23,852	31,932
Santa Ana	6,828	54,127	60,955	7,000	54,343	61,343	7,141	54,343	61,484	7,249	54,343	61,592	7,322	54,343	61,665
Sucre	17,785	108,216	126,001	20,084	121,416	141,500	22,435	136,382	158,817	25,014	153,324	178,338	27,753	172,473	200,226
Tosagua	9,647	29,431	39,078	11,184	32,031	43,215	12,903	34,782	47,685	14,813	37,673	52,486	16,924	40,694	57,618
24 de Mayo	4,883	29,584	34,467	5,081	29,584	34,665	5,261	29,584	34,845	5,421	29,584	35,005	5,558	29,584	35,142
Pedernales	1,906	4,424	6,330	2,146	4,964	7,110	2,405	5,576	7,981	2,681	6,269	8,950	2,975	7,052	10,027

Source: INEC

(note) *:Projected by PHIMA,CRM.

TABLE A.12 AREA, TOTAL POPULATION AND ECONOMIC ACTIVE POPULATION IN THE STUDY AREA YEAR 1990

BASINS	AREA	POPULATION	
		TOTAL	E A P
CHONE RIVER	2,267.00	161,466.00	41,950.00
Bachillero	32.00	3,708.00	795.00
La Estancilla	36.20	5,137.00	1,298.00
Canuto	230.00	9,815.00	2,479.00
Calceta	409.00	29,940.00	6,530.00
Quiroga	66.80	2,770.00	659.00
San Antonio	201.80	6,858.00	1,734.00
Tosagua	179.60	22,933.00	5,290.00
Junín	309.60	17,992.00	4,129.00
Chone	496.00	53,327.00	15,233.00
Boyacá	92.00	1,470.00	370.00
Ricaurte	128.40	2,646.00	2,147.00
Membrillo		4,870.00	1,286.00
Rocafuerte	25.60		
Pichincha	60.00		
PORTOVIEJO RIVER	2,060.00	288,993.00	71,855.00
Portoviejo	410.40	153,465.00	40,041.00
Río Chico	65.00	9,542.00	2,256.00
Pueblo Nuevo	28.80	2,736.00	644.00
Abdón Calderón	121.20	12,066.00	2,699.00
Alajuela	72.00	7,029.00	1,449.00
Honorato Vásquez	162.40	7,478.00	1,605.00
San Plácido	125.80	9,006.00	2,040.00
Rocafuerte	265.20	26,021.00	6,025.00
Ayacucho	104.00	7,159.00	1,522.00
Sucre	134.00	11,636.00	2,500.00
Santa Ana	274.20	21,019.00	5,603.00
Crucita	30.00	6,484.00	1,705.00
Charapotó	80.20	12,556.00	3,170.00
Jipijapa	85.60	2,796.00	596.00
Jaramijó	6.80		
Montecristi	57.20		
Junín	37.20		
BAHIA	544.00	33,998.00	9,346.00
San Vicente	151.60	10,763.00	3,003.00
Charapotó	143.00	1,814.00	384.00
Bahía de Caráquez	171.20	21,421.00	5,959.00
Tosagua	72.40		
San Antonio	5.80		
TOTAL	4,871.00	484,457.00	123,151.00

REMARK: Area and population calculated by PHIMA-CRM

** : The area within this district is included in Quiroga and Calceta.

TABLE A.13 URBAN AND RURAL POPULATION IN THE BENEFICIARY AREA AND ITS PROJECTION

B A S I N S	1971			1982			1990			1995			2000			2005			2010			2015			2020		
	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL
CHONE RIVER	36625	94213	130838	52204	91832	144036	64503	92847	157350	73076	96234	169310	82132	99098	181230	91798	141733	228171	102081	104454	206535	112990	107345	220335	124442	110366	234808
Bachillero		2619	2619		2856	2856		3708	3708		4340	4340		5056	5056		5861	5861		6762	6762		7763	7763		8869	8869
La Estancilla		4639	4639		5400	5400		5137	5137		5137	5137		5137	5137		5137	5137		5137	5137		5137	5137		5137	5137
Canuto		10239	10239		10222	10222		9815	9815		9914	9914		9914	9914		9914	9914		9914	9914		9914	9914		9914	9914
Calceña	7152	24132	31584	9532	21794	31326	12122	17818	29940	13951	18277	32228	15700	18507	34207	17496	18509	36005	19355	18509	37864	21307	18509	39816	23295	18509	41804
Quiroga		2406	2406		2637	2637		2770	2770		2841	2841		2877	2877		2878	2878		2878	2878		2878	2878		2878	2878
Membrillo			0			0		4870	4870		4995	4995		5058	5058		5080	7120		5080	5080		5080	5080		5080	5080
San Antonio		6381	6381		6219	6219		6858	6858		7049	7049		7120	7120		7120	21033		7120	7120		7120	7120		7120	7120
Tosagua	3589	13152	16741	5457	13329	18786	7074	15859	22933	8281	17510	25791	9647	19238	28885	11184	21033	25306	12903	22883	35786	14813	24773	39586	16924	26688	43612
Junín	2257	15438	17695	3376	14527	17903	3870	14122	17992	4190	14122	18312	4514	14122	18636	4839	14122	56908	5162	14122	19284	5479	14122	19601	5787	14122	19909
Chone	23627	14907	38534	33839	14848	48687	41437	11890	53327	46654	12049	58703	52271	12069	64340	58279	52069	58279	64661	12069	76730	71391	12069	83460	78436	12069	90505
PORTOVIEJO RIVER	93662	125507	219169	119189	130491	249680	150705	138288	288993	173379	145430	318809	198697	153012	351709	226859	161058	387917	258019	169516	427535	292315	178805	471120	329814	188604	518418
Portoviejo	80210	6556	86766	102628	20523	123151	132937	20528	153465	154860	20528	175388	179525	20528	200053	207110	20528	227638	237775	20528	258303	271665	20528	292193	308854	20528	329382
Río Chico		8311	8311		7149	7149		9542	9542		11333	11333		13395	13395		15756	15756		18444	18444		21486	21486		24908	24908
Pueblo Nuevo		2805	2805		2461	2461		2736	2736		2904	2904		3067	3067		3223	3223		3271	3271		3508	3508		3633	3633
Abdón Calderón		10430	10430		10477	10477		12066	12066		13063	13063		14073	14073		15086	15086		16092	16092		17081	17081		17952	17952
Alajuela		7961	7961		7857	7857		7029	7029		7029	7029		7029	7029		7029	7029		7029	7029		7029	7029		7029	7029
Honorato Vásquez		8582	8582		8768	8768		7478	7478		7478	7478		7478	7478		7478	7478		7478	7478		7478	7478		7478	7478
San Plácido		10684	10684		9901	9901		9006	9006		9006	9006		9006	9006		9006	9006		9006	9006		9006	9006		9006	9006
Picoasá			0			0			0			0			0			0			0			0			0
Colón			0			0			0			0			0			0			0			0			0
Roca fuerte	5519	15413	20932	6492	17469	23961	6958	19063	26021	7223	20035	27258	7461	20953	28414	7668	21805	29473	7842	22579	30421	7980	23265	31245	8080	23852	31932
Ayacucho		7523	7523		7003	7003		7159	7159		7231	7231		7267	7267		7267	7267		7267	7267		7267	7267		7267	7267
Sucre	2929	10124	13053	4048	7273	11321	4442	7194	11636	4669	7194	11863	4883	7194	12077	5081	7194	12275	5261	7194	12455	5421	7189	12610	5558	7194	12752
Santa Ana	5004	16869	21873	6021	14087	20108	6368	14651	21019	6627	14872	21499	6828	15022	21850	7000	15097	22097	7141	15097	22238	7249	15097	22346	7322	15097	22419
Crucita			0		4751	4751		6484	6484		7796	7796		9328	9328		11107	11107		13161	13161		15520	15520		18213	18213
Charapotó		16503	16503		10302	10302		12556	12556		13964	13964		15475	15475		17088	17088		18803	18803		20602	20602		22526	22526
Jipijapa		3746	3746		2470	2470		2796	2796		2997	2997		3197	3197		3394	3394		3567	3567		3749	3749		3921	3921
BAHIA	11258	10966	22224	12360	12810	25170	15308	18690	33998	17404	22721	40125	19691	27552	47243	22170	33325	55495	24840	40202	65042	27695	23750	51445	30728	58024	88752
San Vicente		5499	5499		7625	7625		10763	10763		13095	13095		15856	15856		19106	19106		22913	22913		2734	2734		32477	32477
Charapotó		2730	2730		1951	1951		1814	1814		1824	1824		1786	1786		1691	1691		1527	1527		1280	1280		952	952
Bahía de Caráquez	11258	2737	13995	12360	3234	15594	15308	6113	21421	17404	7802	25206	19691	9910	29601	22170	12528	34698	24840	15762	40602	27695	19736	47431	30728	24595	55323
NANTA	70905	22082	92987	109067	28273	137340	135147	33986	169133	154314	37844	192158	176357	41971	217328	196316	46361	244677	223207	51004	274211	250017	55889	305906	277568	60998	338566
San Lorenzo			0			0			0			0			0			0			0			0			0
Nanta	64519	3064	67583	100338	3271	103609	125505	4184	129689	143668	4850	148518	163660	5595	169255	185528	6423	191951	209294	7338	216632	234955	8343	243298	261342	9439	270781
Jaramijó		4403	4403		6430	6430		8024	8024		9123	9123		10322	10322		11622	11622		13021	13021		14518	14518		16108	16108
Crucita			0		1338	1338		1784	1784		2119	2119		2505	2505		2947	2947		3450	3450		4019	4019		4659	4659
Montecristi	6386	14615	21001	8729	17234	25963	9642	19994	29636	10646	21752	32398	11897	23549	35246	12788	25369	38157	13913	27195	41108	15062	29009	44071	16226	30792	47018
JIPIJAPA	19996	5271	25267	27146	3476	30622	32225	3942	36167	35759	4217	39976	39090	4499	43589	42737	4775	47512	46495	5018	51513	50336	5275	55611	54226	5516	59742
Jipijapa	19996	5271	25267	27146	3476	30622	32225	3942	36167	35759	4217	39976	39090	4499	43589	42737	4775	47512	46495	5018	51513	50336	5275	55611	54226	5516	59742
TOTAL	232446	258039	490485	319966	266882	586848	397888	287753	685641	453932	306446	760378	514967	326132	841099	581880	387252	964072	654642	370194	1024836	733353	371064	1104417	816778	423508	1240286

SOURCE: - INSTITUTO NACIONAL DE ESTADÍSTICAS Y CENSOS (INEC)

Table A.14 Gross Regional Products

(S/.million)

Industrial Origin	1987			1989		
	Gross Production Value	Internal Consumption	Gross Regional Product	Gross Production Value	Internal Consumption	Gross Regional Product
Agriculture & Livestock	65,906	12,645	53,261	191,389	35,839	155,550
Petroleum & Mine	1,033	403	630	1,542	619	923
Manufacturing	42,704	26,439	16,265	150,622	90,374	60,248
Electricity, Gas & Water	1,611	1,355	256	4,907	4,807	100
Construction	11,349	7,079	4,270	28,895	20,227	8,668
Commerce	31,313	14,048	17,265	120,615	39,674	80,941
Transportation & Communication	14,995	5,698	9,297	44,066	19,896	24,170
Financial & Real Estate	21,870	19,683	2,187	18,933	7,574	11,359
Community & Social Services	8,172	2,884	5,288	23,008	8,553	14,455
Government Services	15,428	5,720	9,708	33,755	23,402	10,353
Other Services	378	0	378	651	0	651
Total	214,759	95,954	118,805	618,383	250,965	367,418

Source: Manabi en Cifras, CRM.

Table A.15 Economic Active Population by Industrial Sector in Manabi Province

Industrial Sector	ECONOMIC ACTIVE POPULATION (person)										Annual growth rate (%)
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	
	207,209	206,824	206,439	206,054	205,668	274,392	281,104	287,980	295,024	302,241	4.28%
DISTRIBUTION PERCENTAGE OF ECONOMIC ACTIVE POPULATION (%)											
Agriculture & livestock	48.20%	45.40%	42.60%	39.80%	37.00%	49.95%	48.46%	46.95%	45.44%	43.92%	
Petroleum & mine	0.10%	0.10%	0.10%	0.10%	0.10%	0.07%	0.07%	0.07%	0.08%	0.08%	
Manufacturing	6.30%	6.50%	6.60%	6.70%	6.80%	6.06%	6.10%	6.14%	6.17%	6.19%	
Electricity, gas & water	0.30%	0.30%	0.30%	0.30%	0.20%	0.24%	0.24%	0.24%	0.24%	0.24%	
Construction	4.50%	4.90%	5.20%	5.60%	6.00%	4.36%	4.57%	4.78%	5.00%	5.23%	
Commerce	9.70%	10.00%	10.30%	10.60%	10.90%	11.54%	11.84%	12.15%	12.46%	12.76%	
Transportation & communication	3.60%	3.90%	4.10%	4.40%	4.60%	3.08%	3.18%	3.28%	3.38%	3.47%	
Financial and real estate	0.70%	0.80%	0.80%	0.90%	0.90%	0.74%	0.78%	0.82%	0.86%	0.91%	
Community & social services	18.90%	20.20%	21.60%	22.90%	24.20%	19.92%	20.83%	21.74%	22.67%	23.61%	
Other services	1.40%	1.20%	0.90%	0.60%	0.30%	2.88%	2.84%	2.79%	2.74%	2.69%	
New labors	6.30%	6.70%	7.50%	8.10%	9.00%	1.16%	1.10%	1.03%	0.97%	0.91%	
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Source: Manabi en Cifras, CRM.

TABLA A.16 POPULATION ECONOMICALLY ACTIVE, URBAN AND RURAL OF THE BENEFICIARY AREA AND ITS PROJECTION

BASINS	1990			1995			2000			2005			2010			2015			2020		
	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL
CHONE RIVER	14986	24447	39433	16313	26162	42475	18599	25869	44468	20721	26398	47119	20283	26980	47263	25387	27638	53025	27918	28325	56243
Bachillero		795	795		933	933		1089	1089		1265	1265		1461	1461		1681	1681		1923	1923
La Estancilla		1298	1298		1298	1298		1298	1298		1298	1298		1298	1298		1298	1298		1298	1298
Canuto		2479	2479		2515	2515		2514	2514		2445	2445		2443	2443		2443	2443		2443	2443
Calceta	2820	3710	6530	2581	4586	7167	3171	3757	6928	3534	3757	7291	3910	3757	7667	4304	3757	8061	4706	3757	8463
Quiroga		659	659		670	670		676	676		670	670		665	665		659	659		654	654
Meabrillo		1286	1286		1319	1319		1335	1335		1336	1336		1336	1336		1336	1336		1336	1336
San Antonio		1734	1734		1818	1818		1837	1837		1841	1841		1800	1800		1800	1800		1800	1800
Tosagua	1563	3727	5290	1830	4209	6039	2131	4521	6652	2472	4944	7416	2852	5378	8230	3274	5822	9096	3740	6272	10012
Junín	824	3305	4129	892	3305	4197	961	3305	4266	961	3305	4266	961	3305	4266	961	3305	4266	961	3305	4266
Chone	9779	5454	15233	11010	5509	16519	12336	5537	17873	13754	5537	19291	12560	5537	18097	16848	5537	22385	18511	5537	24048
PORTOVIEJO RIVER	39460	32395	71855	39580	34016	73596	45353	35796	81149	51776	38719	90495	58881	39665	98546	77024	41965	118989	86986	44303	131289
Portoviejo	35361	4680	40041	35308	5460	40768	40932	5460	46392	47221	5460	52681	54213	5460	59673	72263	5460	77723	82155	5460	87615
Río Chico		2256	2256		2680	2680		3169	3169		3729	3729		4367	4367		5089	5089		5902	5902
Pueblo Nuevo		644	644		683	683		722	722		759	759		793	793		826	826		857	857
Abdón Calderón		2699	2699		2925	2925		3156	3156		3387	3387		3616	3616		3843	3843		4042	4042
Alajuela		1449	1449		1449	1449		1449	1449		1449	1449		1449	1449		1449	1449		1449	1449
Honorato Vásquez		1605	1605		1620	1620		1593	1593		1593	1593		1593	1593		1593	1593		1593	1593
San Plácido		2040	2040		2042	2042		2042	2042		2044	2044		2043	2043		2047	2047		2048	2048
Picoazá		0	0		0	0		0	0		0	0		0	0		0	0		0	0
Colón		0	0		0	0		0	0		0	0		0	0		0	0		0	0
Rocafuerte	1698	4327	6025	1763	4548	6311	1821	4756	6577	1872	4950	6822	1914	5125	7039	1948	5281	7229	1972	5414	7386
Ayacucho		1522	1522		1538	1538		1545	1545		1546	1546		1546	1546		1546	1546		1546	1546
Sucre	968	1532	2500	1018	1532	2550	1064	1532	2596	1108	1532	2640	1147	1532	2679	1182	1532	2714	1212	1532	2744
Santa Ana	1433	4170	5603	1491	3346	4837	1536	3380	4916	1575	3397	4972	1607	3397	5004	1631	3397	5028	1647	3397	5044
Crucita		1705	1705		2050	2050		2453	2453		2921	2921		3461	3461		4082	4082		4790	4790
Charapotó		3170	3170		3504	3504		3858	3858		5229	5229		4523	4523		5021	5021		5437	5437
Jipijapa		596	596		639	639		681	681		723	723		760	760		799	799		836	836
BANIA	4566	4780	9346	5134	5739	10873	5809	7063	12872	6540	8571	15111	7328	10341	17669	8170	12437	20607	9065	14919	23984
San Vicente		3003	3003		3654	3654		4426	4426		5333	5333		6395	6395		7631	7631		9065	9065
Charapotó		384	384		307	307		379	379		359	359		324	324		271	271		202	202
Bañía de Caráquez	4566	1393	5959	5134	1778	6912	5809	2258	8067	6540	2879	9419	7328	3622	10950	8170	4535	12705	9065	5652	14717
NANTA	35061	3612	38673	40041	4155	44196	45511	4757	50268	51479	5422	56901	57950	6149	64099	64923	6939	71862	72088	7720	79808
San Lorenzo		0	0		0	0		0	0		0	0		0	0		0	0		0	0
Nanta	32757	1067	33824	37497	1237	38734	42715	1427	44142	48423	1639	50062	54623	1872	56497	61323	2128	63451	68210	2408	70618
Jaramijó		2140	2140		2437	2437		2762	2762		3114	3114		3494	3494		3899	3899		4255	4255
Crucita		405	405		481	481		568	568		669	669		783	783		912	912		1057	1057
Montecristi	2304		2304	2544		2544	2796		2796	3056		3056	3325		3325	3600		3600	3878		3878
JIPIJAPA	7057	0	7057	7831	0	7831	8561	0	8561	9359	0	9359	10182	0	10182	11030	0	11030	11875	0	11875
Jipijapa	7057		7057	7831		7831	8561		8561	9359		9359	10182		10182	11030		11030	11875		11875
TOTAL	101130	65234	166364	108899	70072	178971	123833	73485	197318	139875	79110	218985	154624	83135	237759	186534	89979	275513	207932	95267	303199

SOURCE: - PUINA-CRM

Table A.17 Agricultural and Livestock Production Volume in Manabi Province

Production	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	Annual increasing rate(%)
Agriculture :Total harvested area	279,214	243,928	269,346	279,535	305,684	352,100	345,800	348,000	353,271	338,750	2.17%
:Lowland irrigation area	5,816	1,676	212	4,224	6,620	7,576	8,445	7,753	5,596	5,957	0.27%
Coffee	27,609	19,672	20,869	23,774	38,994	34,157	29,075	22,027	49,137	47,918	6.32%
Cocoa	11,231	12,139	5,632	7,214	18,726	10,502	7,981	13,591	15,516	15,755	3.83%
Maize	42,443	21,786	46,003	63,605	91,598	83,102	92,381	71,263	101,100	89,906	8.70%
Cotton	17,778	3,238	2,717	3,938	7,519	19,882	10,254	9,663	18,399	18,310	0.33%
Banana/plantain	199,660	180,172	177,772	239,841	297,456	243,935	264,550	279,102	338,049	305,493	4.84%
Orange	84,441	72,265	59,898	62,516	84,254	21,742	25,709	19,415	34,878	36,089	-9.01%
Vegetable	15,841	3,015	17,817	33,607	66,685	61,292	82,081	48,898	28,616	26,824	6.03%
Tubercular	74,608	23,859	47,767	76,412	86,080	14,816	13,309	14,763	20,080	15,338	-16.12%
Others	-	-	-	-	-	202,837	247,818	549,202	426,306	354,536	14.98% *
Livestock :Pasture	-	-	-	-	-	872,053	929,500	925,600	930,000	946,300	2.06% *
Cattle	526,430	534,470	546,140	541,632	622,400	640,800	664,400	668,700	692,100	726,100	3.64%
Meat	12,671	17,703	37,022	17,646	8,226	12,408	12,865	18,055	18,687	19,605	4.97%
Milk	47,879	48,703	112,362	111,434	128,052	49,167	57,267	76,942	83,074	92,710	7.62%
Hog	715,626	760,406	806,782	819,104	534,753	225,300	292,900	318,300	346,900	398,000	-6.31%
Production value (Thousand US\$)	1,963	1,547	3,558	5,702	9,771	23,961	26,531	40,212	83,082	100,189	54.80%
Agricultural products	763	1,247	3,408	2,445	1,100	2,358	6,227	11,388	20,249	30,961	50.90%
Cattle meat	1,204	1,720	4,964	4,538	4,251	3,623	8,976	16,483	29,803	46,528	50.09%
Meat and milk of cattle	10,878	8,681	6,542	11,851	9,131	47,363	40,933	40,356	51,454	51,304	18.81%
Fishery :Tuna	14,403	13,301	9,030	11,657	9,151	232,443	118,319	110,843	108,077	28,083	7.70%
Sardine	1,461	2,099	4,626	4,001	558	32,313	34,987	44,063	44,434	22,511	35.51%
Macarela	427	1,032	1,095	1,768	1,157	5,026	7,606	8,888	8,547	9,504	41.16%
Shrimp											

Source:Manabi en Cifras, CRM.

Table A.18 Statistics of Manufacturing by Sector 1981 - 1988

Sector	(Number of establishment: number) (Persons engaged: person)								(Production: \$/1,000) (Value added: \$/1,000)
	Food crops & agro- industrial crops	Textiles, cloths & shoes	Lumbering wooden pro- ducts & furnitures	Paper, printing & editing	Chemical industry	Non-metal products including minerals	Metal pro- ducts & machinery	Other manufac- turing	Total
1981									
Number of establishment	42	3	3	4	*	4	4	*	60
Persons engaged	2,942	331	238	115	13	107	68	65	3,879
Production	4,691,844	372,690	142,608	41,084	25,468	19,048	19,417	5,153	5,317,312
Value added	878,413	83,550	86,556	14,577	14,564	11,678	7,644	3,765	1,102,747
1982									
Number of establishment	37	*	3	4	*	4	4	*	52
Persons engaged	3,063	294	228	105	14	99	66	50	3,919
Production	5,226,979	456,390	193,667	55,094	36,101	24,249	41,028	6,347	6,039,855
Value added	1,004,765	68,294	11,771	17,977	18,474	9,138	12,878	3,219	1,146,516
1983									
Number of establishment	36	3	*	4	*	3	5	*	51
Persons engaged	2,862	290	96	108	14	84	82	46	3,582
Production	7,038,110	552,464	82,007	71,694	58,460	16,916	29,911	7,906	7,857,468
Value added	2,128,169	134,321	33,503	27,207	22,996	6,545	13,343	5,303	2,371,387
1984									
Number of establishment	36	3	*	4	*	4	3	*	50
Persons engaged	3,197	318	178	112	25	99	57	64	4,050
Production	11,256,510	1,511,959	106,779	111,591	104,373	41,127	25,953	24,463	13,182,755
Value added	1,866,993	624,962	23,693	43,496	54,639	24,419	10,224	18,720	2,667,146
1985									
Number of establishment	31	*	*	4	*	3	*	*	38
Persons engaged	3,321	134	83	106	25	70	42	77	3,858
Production	16,057,236	229,800	126,083	119,867	86,106	32,693	13,693	22,985	16,688,463
Value added	3,083,881	112,768	37,653	46,356	35,971	19,582	2,777	14,920	3,353,908
1986									
Number of establishment	34	*	*	3	*	3	*	*	40
Persons engaged	3,199	134	77	74	25	73	31	31	3,644
Production	23,474,007	278,368	147,502	155,454	147,993	56,707	13,827	27,680	24,301,538
Value added	5,178,038	147,411	9,403	61,151	55,602	33,047	5,151	19,680	5,509,483
1987									
Number of establishment	43	*	*	3	3	5	4	*	58
Persons engaged	4,064	11	91	104	35	65	106	140	4,616
Production	27,037,263	17,519	414,231	200,494	293,292	42,284	239,785	196,980	28,441,848
Value added	5,250,247	2,757	104,930	61,846	130,014	24,335	67,251	90,244	5,731,624
1988									
Number of establishment	45	*	*	3	3	4	4	*	59
Persons engaged	4,615	11	114	89	179	54	113	185	5,360
Production	52,296,252	24,377	843,565	382,845	1,569,875	78,296	301,345	566,007	56,062,562
Value added	11,803,510	4,076	236,189	140,860	(129,147)	38,419	87,025	324,959	12,505,891

Source: Encuesta Anual de Manufactura y Minería, Estadísticas de Cada Año, INEC.
(Nota) *: Lack of data.

Table A.19 Main Export Products from Manabi Province

Products			1986	1987	1988	1989	1990	Annual increasing rate(%)
Coffee	Beans	Volume (MT)	28,407	22,465	20,596	23,048	23,289	
		US\$ thousand	131,772	84,605	65,856	49,705	35,422	-28.00%
	Elaborated	Volume (MT)	663	658	405	398	236	
		US\$ thousand	11,538	7,508	7,003	7,966	10,698	-1.87%
Cocoa :	Beans	Volume (MT)	35	-	47	23	-	
		US\$ thousand	11,344	13,289	13,390	8,887	1,186	-43.14%
	Elaborated	Volume (MT)	118	-	102	-	84	
		US\$ thousand	12,354	9,142	7,630	8,453	8,545	-8.80%
Tuna & other fishes:		Volume (MT)	32,037	28,966	19,762	21,965	25,190	
		US\$ thousand	18,579	25,412	23,467	24,805	27,709	10.51%
Shrimp :		Volume (MT)	1,558	2,190	3,782	3,155	3,764	
		US\$ thousand	25,909	34,482	34,384	28,497	31,754	5.22%
Montecristi hat :		US\$ thousand	2,250	2,400	1,882	3,570	3,570	12.23%
Others :		US\$ thousand	31,271	38,083	41,732	27,104	35,551	3.26%
Total (US\$ thousand)			245,017	214,921	195,344	158,987	154,435	-10.90%

Source: Manabi en Cifras, CRM, 1992

(Note) Volume of tuna and other fishes consists of canned tuna, canned sardine, frozen tuna, sliced fish and other fishes. Exports corresponding to those registered by Manta Port

Table A.20 Number of Hotels and Beds

Hotels & Others	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	Annual increasing rate(%)
Hotel :											
Number of hotels	15	25	25	22	17	17	14	39	-	28	7.18%
Number of beds	900	1,500	1,500	1,500	1,238	1,235	1,081	1,897	-	1,753	7.69%
Residential hotel :											
Number of hotels	-	-	-	-	-	-	-	-	-	22	-
Number of beds	-	-	-	-	-	-	-	-	-	622	-
Hostel											
Number of hostels	2	1	1	2	56	60	60	7	-	22	30.53%
Number of beds	80	40	40	50	1,980	1,925	2,204	221	-	622	25.59%
Residential hostels :											
Number of hostels	19	17	17	-	9	-	9	5	-	8	-9.16%
Number of beds	570	510	510	-	256	-	256	285	-	282	-7.52%
Pension :											
Number of pensions	35	36	36	37	8	10	9	11	-	9	-14.01%
Number of beds	840	864	864	980	139	190	146	301	-	106	-20.55%
Inn :											
Number of inns	-	2	2	3	1	-	2	1	-	3	5.20% *
Number of beds	-	80	80	55	24	-	70	120	-	106	3.58% *
Lodge :											
Number of hotels	-	-	-	-	1	1	2	6	-	6	43.10% **
Number of beds	-	-	-	-	17	17	103	456	-	459	93.32% **

Source: Manabi en Cifras, CRM.

(Note) : Lack of data. * : From 1982 - 1990. ** : From 1985 - 1990.

Table A.21 Statistics on Infrastructure in Manabí Province

Infrastructure	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	Annual increasing rate(%)
Trunk Road :											
Asphalt-paved (km)	638.00 *	669.00 *	-	-	-	818.80	818.80	818.80	-	856.30	1.13% (1)
Stone-paved (km)	550.00 *	567.00 *	-	-	-	182.50	182.50	182.50	-	253.00	8.51% (1)
Non-paved (km)	4,295.00 *	4,302.00 *	-	-	-	65.00	65.00	65.00	-	65.00	0.00% (1)
Secondary Road :											
Asphalt-paved (km)	-	-	-	-	-	64.80	80.10	80.10	-	80.10	5.44% (1)
Stone-paved (km)	-	-	-	-	-	389.10	389.10	389.10	-	583.30	10.55% (1)
Non-paved (km)	-	-	-	-	-	4,231.00	4,231.00	4,231.00	-	4,245.40	0.08% (1)
Number of Registered Vehicles	14,186	14,928	-	-	-	18,137	18,206	18,206	-	22,172	5.09%
Number of Customers of Telephone	9,665	10,102	10,503	11,200	11,470	12,751	14,176	15,761	16,900	17,750	6.99%
Electricity :											
Installation Capacity (kw)	60,800	62,100	52,600	51,600	50,600	50,600	54,500	50,600	50,600	50,600	-2.02%
Generated Energy (kw/h)	166,878	186,747	188,766	194,519	217,407	8,026	25,245	7,879	11,469	14,469	-23.79%
Distributed Energy (kw/h)	129,879	141,303	153,733	172,703	187,309	175,709	189,168	206,772	233,940	275,013	8.59%
Number of Customers	51,454	56,170	57,960	59,594	62,685	63,565	69,088	72,827	79,058	86,717	5.97%
Potable Water :											
Number of Meters (Nos)											
Poza Honda System	11,051	11,554	11,994	13,884	15,630	13,363	15,172	16,647	17,845	19,495	6.51%
La Estancilla System	3,301	3,408	3,994	4,231	4,502	4,594	4,680	5,654	5,654	-	6.96% (2)
Chone System	3,808	3,953	4,957	4,255	4,524	4,693	4,959	5,649	5,649	5,996	5.17%
EMAPAM Manta	9,448	10,816	10,570	10,908	11,429	11,429	-	-	-	-	3.88% (3)
Other Rural Supply System	1,054	1,847	2,385	3,029	3,726	4,252	4,911	5,220	5,370	-	22.57% (2)
Number of Served Persons (persons)											
Poza Honda System	223,594	238,568	253,657	270,779	287,225	304,669	323,174	342,804	363,622	-	6.27% (2)
La Estancilla System	36,808	38,340	39,826	41,171	42,674	44,231	45,846	47,520	49,255	-	3.71% (2)
Chone System	33,003	34,610	36,691	38,900	41,241	43,410	45,300	47,270	49,320	-	5.15% (2)
Other Rural Supply System	-	-	21,682	29,245	35,872	46,140	59,348	76,357	98,190	-	28.63% (4)
Volume of Paid Water (m ³ x 10 ³)											
Poza Honda System	-	-	-	-	-	4,315	4,790	5,389	5,653	-	9.42% (5)
La Estancilla System	-	-	-	-	-	-	1,318	1,418	-	-	7.59% (6)
Chone System	-	-	-	-	-	1,476	1,527	1,587	1,614	1,829	5.51% (1)
EMAPAM Manta	-	-	-	-	-	2,237	2,304	3,407	3,592	-	17.10% (5)

Source: Manabí en Cifras, CRM.

(Note) :- Lack of data. *Including secondary road.

(1):1986 - 1990, (2):1981 - 1989, (3):1981 - 1986, (4):1983 - 1989, (5):1986 - 1989, (6):1987 - 1988.

Table A.22 Statistics of Education

Infrastructure	(persons)										Annual increasing rate(%)
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	
Total population of school age*											
For kindergarten (3 - 5 years old, 3 years)	-	88,608	88,540	88,473	88,411	88,349	88,289	88,231	89,175	88,122	-0.07%
For elementary school (6 - 11 years old, 6 years)	-	161,730	163,132	164,553	165,994	167,454	168,938	170,440	171,694	173,509	0.88%
For high school (12 - 17 years old, 6 years)	-	135,237	137,971	140,768	143,628	146,552	149,542	152,600	155,729	158,929	2.04%
For university (18 - 24 years old, 7 years)	-	110,796	114,168	117,647	121,241	124,949	128,777	132,730	136,808	141,022	3.06%
Number of pupils/students**											
Elementary school	192,615	200,870	209,480	218,458	227,821	229,602	231,019	225,472	229,417	223,021	1.64%
High school	54,930	60,343	59,443	64,292	69,536	70,747	72,137	70,514	74,407	75,524	3.60%
University	14,585	13,528	14,650	16,585	18,408	11,825	11,595	11,331	12,320	12,835	-1.41%
Number of teachers/professors**											
For elementary school	1,525	1,577	1,705	1,775	1,830	6,091	6,332	6,760	6,940	6,955	18.37%
For high school	3,173	3,423	3,571	3,831	4,110	4,803	5,117	5,156	5,366	5,474	6.25%
For university	-	-	-	-	-	537	594	679	798	820	11.16%
Entrance rate of school***											
For elementary school	-	80.24%	83.24%	86.34%	89.55%	89.76%	89.81%	87.17%	87.94%	85.24%	0.76%
For high school	-	44.62%	43.08%	45.67%	48.41%	48.27%	48.24%	46.21%	47.78%	47.52%	0.79%
For university	-	12.21%	12.83%	14.10%	15.18%	9.46%	9.00%	8.54%	9.01%	9.10%	-3.61%
Illiterate rate (%)**	20.13%	20.90%	-	-	-	17.82%	13.67%	15.59%	14.59%	13.60%	-4.26%

Sources: *National census of 1982 and 1990 by INEC, **Manabi en Cifras, 1987 and 1992.

(Note) -: Lack of data. ***: Estimated by using the data "total population of school age" and "number of pupils/students" provided that "total population of school age" corresponding to "number of pupils/students" for elementary school is applied a total number of school age for kindergarten and for elementary school.

Table A.23 Foreign Exchange Rate (1/2)

(\$/US\$)

Year/Quarter/Month	Official Market		Investment Market		Free Market		Remarks	
	Buying	Selling	Buying	Selling	Buying	Selling		
1980	Annual average	24.80	24.95	26.75	27.15	27.68	27.78	
1981	Annual average	24.80	24.95	27.58	27.88	30.59	30.76	
1982	Annual average	30.00	30.25	30.00	34.11	49.78	49.81	
1983	Annual average	44.20	45.01	82.37	83.22	83.01	83.47	
1984	Annual average	62.30	63.55	91.55	92.65	95.43	96.09	
1985	Annual average	70.38	71.75	95.00	96.50	115.52	116.29	
1985	I Quarter	66.50	67.85	95.00	96.50	119.94	121.65	Trimestal average.
	II Quarter	66.50	67.85	95.00	96.50	113.90	114.69	Trimestal average.
	III Quarter	66.50	67.85	95.00	96.50	108.36	109.03	Trimestal average.
	IV Quarter	82.02	83.45	95.00	96.50	122.84	123.57	Trimestal average.
1986	Annual average	95.00	96.50	122.05	123.42	150.85	151.40	
1986	I Quarter	95.00	-	104.44	105.90	138.89	139.51	Trimestal average.
	II Quarter	95.00	-	108.50	110.00	162.98	163.78	Trimestal average.
	III Quarter	95.00	-	129.27	130.70	157.10	157.48	Trimestal average.
	IV Quarter	95.00	-	146.00	147.00	144.44	144.83	Trimestal average.
1986	January	95.00	96.50	96.31	97.81	130.39	130.74	Monthly average.
	February	95.00	-	108.50	110.00	145.36	146.20	Monthly average.
	March	95.00	-	108.50	110.00	140.92	141.60	Monthly average.
	April	95.00	-	108.50	110.00	156.60	157.23	Monthly average.
	May	95.00	-	108.50	110.00	162.56	163.69	Monthly average.
	June	95.00	-	108.50	110.00	169.79	170.37	Monthly average.
	July	95.00	-	108.50	110.00	164.44	164.94	Monthly average.
	August	95.00	-	129.52	131.40	161.42	161.50	Monthly average.
	September	95.00	-	149.80	150.80	145.45	145.99	Monthly average.
	October	95.00	-	146.00	147.00	143.43	144.00	Monthly average.
	November	95.00	-	146.00	147.00	144.52	144.74	Monthly average.
	December	95.00	-	146.00	147.00	145.37	145.74	Monthly average.
1987	Annual average	95.00	-	169.97	170.97	193.23	193.80	
1987	January	95.00	-	146.00	147.00	146.12	146.29	Monthly average.
	February	95.00	-	146.00	147.00	147.57	147.70	Monthly average.
	March	95.00	-	146.00	147.00	n.d.	n.d.	n.d.:Not available.
	April	95.00	-	149.67	150.67	n.d.	n.d.	n.d.:Not available.
1988	Annual average	194.45	-	294.34	308.88	435.03	436.19	
1988	I Quarter	95.00	-	238.51	239.51	324.22	325.74	Trimestal average.
	II Quarter	95.00	-	249.00	250.00	426.76	426.09	Trimestal average.
	III Quarter	197.80	-	293.14	307.57	497.66	499.48	Trimestal average.
	IV Quarter	390.00	-	396.70	438.45	491.47	493.46	Trimestal average.
1989	Annual average	390.00	-	510.91	542.09	567.24	568.18	
1989	I Quarter	390.00	-	427.40	472.39	526.63	528.18	Trimestal average.
	II Quarter	390.00	-	479.31	515.11	524.85	525.32	Trimestal average.
	III Quarter	390.00	-	536.53	562.91	577.86	578.83	Trimestal average.
	IV Quarter	390.00	-	600.42	617.97	639.63	640.37	Trimestal average.
1989	January	390.00	-	417.36	461.29	534.65	534.62	Monthly average.
	February	390.00	-	427.51	472.51	528.58	532.29	Monthly average.
	March	390.00	-	437.33	483.36	516.65	517.62	Monthly average.
	April	390.00	-	447.69	494.82	504.81	505.72	Monthly average.
	May	390.00	-	480.41	515.20	529.07	529.76	Monthly average.
	June	390.00	-	535.82	535.31	540.67	540.49	Monthly average.
	July	390.00	-	522.86	549.00	571.02	571.78	Monthly average.
	August	390.00	-	536.14	562.95	578.00	578.95	Monthly average.
	September	390.00	-	550.57	576.77	584.55	585.77	Monthly average.
	October	390.00	-	574.70	595.62	605.90	605.98	Monthly average.
	November	390.00	-	601.70	617.90	655.81	657.33	Monthly average.
	December	390.00	-	624.85	640.39	657.18	657.81	Monthly average.

Source: Banco Central del Ecuador y Superintendencia de Bancos.

Table A.23 Foreign Exchange Rate (2/2)

(S./US\$)

Year/Quarter/Month	Official Market		Investment Market		Free Market		Remarks
	Buying	Selling	Buying	Selling	Buying	Selling	
1990 Annual average	390.00	-	660.30	775.51	821.14	821.91	
1990 I Quarter	390.00	-	669.72	683.12	704.35	704.87	Trimestal average.
II Quarter	390.00	-	727.56	742.11	817.47	818.49	Trimestal average.
III Quarter	390.00	-	797.86	813.81	892.63	893.40	Trimestal average.
IV Quarter	390.00	-	846.07	862.99	870.11	870.87	Trimestal average.
1990 January	390.00	-	650.73	663.74	687.92	688.45	Monthly average.
February	390.00	-	663.30	676.57	691.76	692.32	Monthly average.
March	390.00	-	695.14	709.04	733.37	733.83	Monthly average.
April	390.00	-	712.17	726.41	782.41	782.74	Monthly average.
May	390.00	-	727.67	742.22	821.32	822.54	Monthly average.
June	390.00	-	742.83	757.69	848.69	850.19	Monthly average.
July	390.00	-	778.02	793.58	897.40	898.25	Monthly average.
August	390.00	-	800.30	816.30	901.92	902.35	Monthly average.
September	390.00	-	815.25	831.56	878.57	879.61	Monthly average.
October	390.00	-	830.67	847.28	861.23	862.92	Monthly average.
November	390.00	-	846.33	863.26	871.72	873.01	Monthly average.
December	390.00	-	861.21	878.43	877.38	876.69	Monthly average.
1991 I Quarter	390.00	-	930.78	949.40	975.50	976.52	Trimestal average.
II Quarter	390.00	-	989.54	1,009.34	1,083.23	1,094.89	Trimestal average.
1991 January	390.00	-	888.86	906.64	935.03	936.17	Monthly average.
February	390.00	-	944.94	963.84	977.37	978.40	Monthly average.
March	390.00	-	958.55	977.72	1,014.09	1,015.00	Monthly average.
April	390.00	-	974.05	993.53	1,036.46	1,037.85	Monthly average.
May	390.00	-	989.83	1,009.63	1,102.05	1,119.11	Monthly average.
June	390.00	-	1,004.75	1,024.85	1,111.17	1,127.72	Monthly average.
July	390.00	-	1,034.61	1,055.31	1,109.96	1,127.70	Monthly average.
August	390.00	-	1,076.45	1,097.98	1,103.61	1,120.97	Monthly average.
September	390.00	-	1,091.67	1,113.50	1,125.96	1,127.25	Monthly average.
October	390.00	-	1,107.16	1,129.30	1,161.46	1,162.30	Monthly average.
November	390.00	-	1,154.48	1,177.57	1,194.79	1,196.68	Monthly average.
December	390.00	-	1,250.13	1,275.13	1,275.13	1,293.10	Monthly average.
1992 January	390.00	-	1,265.95	1,291.27	1,323.74	1,343.68	Monthly average.
February	390.00	-	1,280.75	1,306.37	1,331.53	1,351.92	Monthly average.
March	390.00	-	1,296.15	1,322.07	1,330.91	1,350.70	Monthly average.
April	390.00	-	1,322.60	1,349.05	1,369.15	1,390.62	Monthly average.
May	390.00	-	1,341.95	1,368.79	1,439.00	1,463.68	Monthly average.
June	390.00	-	1,408.05	1,436.21	1,464.84	1,490.31	Monthly average.
July 30	390.00	-	1,430.00	1,458.60	1,550.00	1,555.00	

Source: Banco Central del Ecuador y Superintendencia de Bancos.