



**Basic Study for the Development of the Pilot
Project for the Determination of the
Agricultural Potential in 4 Irrigation Modules
for the Fight against Poverty in the
PAPALOAPAN River Basin, Veracruz Mexico**



WRITING MISTAKES

All amounts, in productions costs, to handle en mexican pesos, except some costs to handle in dollars.

In page 184, in Production and Destination square, first line, first column say: Yield Ton/Ha; change to: Yield Fruit/Ha. In second column of same line, say: Sale Price/Ton; change to: Sale Price/Fruit.

In page 208, in Production and Destination square, first line, second column say: Sale Price/Ton; change to: Sale Price/Box.

In page 240, in Production and Destination square, first line, second column say: Sale Price/Ton; change to: Sale Price/Box.

PRESENTED TO:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)





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CONTENT		Page
1.	Introduction	4
1.1	Background of the Study	4
1.2	Papaloapan River Basin	4
1.3	Objective of the study	7
1.4	Expected Products	7
2.	Area of Study	8
2.1	Localization of the 4 modules of riego with their 13 units.	8
2.1.1	Ubicación, delimitación y parcelamiento de las unidades de riego, a través de imágenes satelitales ikonos, landsat y fotografías aéreas digitales	14
2.1.2	Methodologies	14
3.	Natural Conditions and Agriculture	31
3.1	Soil	31
3.1.1	Methodology and Processes	31
3.1.2	Results	34
3.1.3	Discussion	79
3.2	Agriculture y Environment	84
3.2.1	Methodology and Process	84
3.2.2	Results	86
3.2.3	Discussion	115
3.3	Water	116
3.3.1	Methodology and Process	116
3.3.2	Results	121
3.3.3	Discussion	124
4.	Socioeconomics Conditions	125
4.1	Characteristics of the Producers	125
4.1.1	Methodology and Process	125
4.1.2	Results	125
4.1.3	Discussion	138
4.2	Characteristics of the Municipals	139
4.2.1	Methodology and Process	139
4.2.2	Results	139
4.2.3	Discussion	148
4.3	Markets for Agricultural products	149
4.3.1	Methodology and Process	149
4.3.2	Results	151
4.3.3	Discussion	172
5.	Recommendations for alternative production systems	174
5.1	Methodology of the identification of alternative production systems	174
5.2	Identification of production alternatives	180
5.3	Technological Packages	182
6.	Conclusions	265
7.	Bibliography	271
8.	Annexes	273

1. INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The project is framed within the objectives of the Consejo de Desarrollo del Papaloapan (CODEPAP). The council is a decentralized organ of the Government of the State of Veracruz, dedicated to promote the hydroagricultural, fisheries and forestry development in the municipalities of the state under its influence in the lower basin of the Papaloapan River.

In the year 2000, CODEPAP asked the Japan International Cooperation Agency (JICA), for help to carry out the project, which was accepted by this agency at the beginning of this year.

At the same time, in the month of March 2004, JICA hired the services of the company Biotec de Xalapa S.A. de C. V. (BIOTECXA), to carry out the project according to the terms of reference previously agreed upon by the Agency and CODEPAP. The study is headed towards its goal being an effective planning tool to formulate strategies of agricultural development appropriate to the agro-ecological and socio-economic conditions of the municipalities of Veracruz involved in the Papaloapan river basin.

The following executive summary, includes the office and field work carried out, with the purpose of presenting results and expected products, outlined in module 1 (partial advancement), 2, 3 and 4 (total advancement) of annex 2, of the contract signed between JICA and BIOTECXA.

The results were presented as maps, charts, photographs, tables, data bases, etc., integrated into a geographic information system whose module for managing cartography is ARC GIS. The generic data base is ACCESS and the application is programmed in Visual Basic. The presentation and methodology are respectively presented in Power Point and Statsoft 2000.

It is convenient to mention that for the carrying out of the present study the SCIENTIFIC METHOD was used as a base, Methodologies and Norms approved by the Mexican government.

1.2 THE PAPALOAPAN RIVER BASIN

The Papaloapan River Basin is located in the southern part of the Gulf of Mexico, limiting to the north with the closed Oriental Basin and the basins of the Atoyac and Jamapa rivers; to the east it limits with the Coatzacoalcos River Basin; to the west with the Alto Balsas and to the south with the basins of the Atoyac de Oaxaca or alto Verde and Tehuantepec. It has a surface of 46,263 Km² (2.36% of the nacional territory) and, because of its discharge volume (46,721 millions of m³), it is the second most important basin in the country; after the Lerma-Chapala-Santiago (IMTA, 2002).

The Papaloapan Basin has suffered from changes in its territorial definition during the years, not so in its geohydrologic conformation. The basin is a clear example of how a hydrologic basin is limited starting from the perception of whoever tries to outline it. The Comisión del Papaloapan, in functions since 1947 until 1988, defined the basin with 163 municipalities from Oaxaca, 64 from Veracruz and 29 from Puebla, that is to say, a total of 256 municipalities. Exactly during the year in which the Comisión was dissolved, in the Oficial Gazette the decree of definition of hydrological areas appears, on May 18th, 1988 and it defines the Papaloapan basin with a total of 152 municipalities from Oaxaca, 27 from Puebla and 123 from Veracruz, which substantially changes the territorial definition. Together with this, the basin has also presented another change with the new municipalities which have been formed within its territory. In Veracruz, for example, we find the appearance of the municipalities of Carlos A. Carrillo. Oluta, Sayula de Alemán, Cuitláhuac, among others.

The present territorial definition is based on three main sources: geohydrology (done by IMTA in 2002), the updated municipal information (retaken from the Gerencia Estatal in Veracruz of the Comisión Nacional del Agua) and the available information, given and checked by the Consejo de Desarrollo del Papaloapan (Codepap). In this manner, the Papaloapan basin, nowadays is formed by a total of 264 municipalities, of which 164 belong to Oaxaca, 29 to Puebla and 71 to Veracruz.

It is worth the mention that for the present study, only the lower part of the Papaloapan basin was taken into account, this is to say, that belonging to the state of Veracruz.

In the Papaloapan River Basin, there live inhabitants of a local and regional origin and some families whose oldest members came from the relocation of people from the Chinantec and Mazatec ethnic groups, whose lands and towns were flooded because of the construction of the Temascal (now known as Miguel Aleman) and Cerro de Oro (now known as Miguel de la Madrid) dams. These dams were planned in 1947, the year in which the Comisión del Papaloapan was founded, being Lic. Miguel Alemán Valdés the President of the Mexican Republic. The Temascal dam was built between 1949 and 1954, on the Tonto river which is a branch of the Papaloapan River. This dam caused the flooding of 5,000 ha and the displacement of around 20,000 mazatecs toward new population centers in the states of Oaxaca and Veracruz.

The Cerro de Oro dam was built between the years 1974 and 1988, through an approval decree of the Special meeting of study of highlands of the Papaloapan river basin. The work affected 22,039 ha of grazing land, jungle and farm land, at the same time it caused the displacement of 20,000 chinantecs, mainly towards the Uxpanapa area in the state of Veracruz.

The construction of the Temascal dam, was based on articles 141 and 142 of the 1934 Agrarian Code, referring to the construction of hydraulic works, with the firm intention of increasing the capacity for electricity generation of the country. Also, it was planned that this construction and that of the Cerro de Oro dam, should improve the distribution of income, increase the production, permit the integration of the towns to the national economic activities and control the overflow of the Papaloapan

river and its branches, to avoid the disastrous floods which periodically had been happening in the area. In the legal process of the projects, the indemnification and relocation of the affected people was considered

Historically, since the beginning of the twentieth century, the majority of the inhabitants of the Papaloapan River Basin are dedicated to the growing of sugar cane, corn, beans and more recently, rice. Another important activity is cattle raising. The growing of papaya and mango is reduced.

On November 15th, 1999, the Governor of the State of Veracruz, Lic. Miguel Alemán Velasco, emitted a decree to constitute the Consejo de Desarrollo del Papaloapan, whose function is to carry out actions to achieve agricultural, ranching, fisheries, forestry and agroindustrial development under the concept of reordering of the Hydrological Basin, at a sub-basin and micro-basin level, responding with programs which follow the sequence of part of the Plan Veracruzano de Desarrollo 1999-2004, of the Programa Sectorial Hidráulico y del Gobierno Federal.

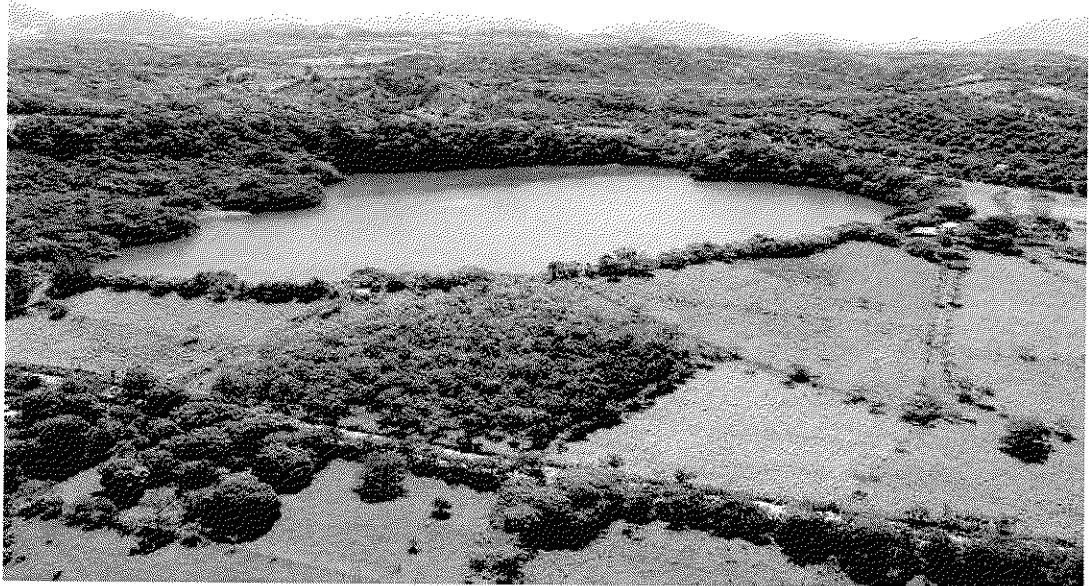
This is how as part of its functions, the Consejo de Desarrollo del Papaloapan, since the year 2000 asked the Japan International Cooperation Agency (JICA), for the present "Basic Study for the Development of the Pilot Project for the determination of the Agricultural Potential in 4 Irrigation Modules, for the Fight Against Poverty in the Papaloapan River Basin, Veracruz, México", which was granted at the beginning of the year 2004



GENERAL VIEW OF THE TESECHOACAN RIVER

1.3 OBJECTIVE OF THE STUDY

Compile and analyze the agroecologic, agricultural, economic and social information, which permits the formulation of strategies of agricultural development, appropriate to the agroecological and socioeconomic conditions in 4 irrigation modules, for the fight against poverty in the Papapaloapan River Basin, of the state of Veracruz.



LAGUNA ENCANTADA

1.4. EXPECTED PRODUCTS

- a) Geographic Information System, containing layers of digital information and memory of the studies of the soil, environmental and agronomic and water systems.
- b) Geographic Information System, containing layers of digital information and memory of the studies of the economic and social systems, agricultural exploitation, agricultural inputs, technical assistance, demographic system, credit and insurance, marketing, social system.
- c) For each municipality, carry out a determined demographic analysis: total population, total population by age groups, age pyramid, annual growth rate during the last 20 years or according to available information; Economically Active Population (PEA) and its age and sex structure; annual birth rate.
- d) Data base of the information of markets located in the area of influence of the Papaloapan river basin with a particular emphasis in the niches and segments of the market susceptible to exploitation.