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CIDIA — TURRIALBA COSTA RICA

CATIE

CENTRO AGRONOMICO TROPICAL DE INVESTIGACION  
Y ENSEÑANZA

CONCENTRATED ACTION MODULE  
MAC  
FOR EL SALVADOR

A Proposal submitted to the  
EUROPEAN ECONOMIC COMMUNITY

by  
CATIE

Turrialba, Costa Rica  
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## 1.0 SUMMARY OF THE PROJECT

The goal of the present project is to improve the well-being of rural people of the Department of Tejutla, Republic of El Salvador. The specific actions to achieve the goal are: increase the knowledge of small farm systems of the area, conduct on-farm research, training of farmers and technical personnel and transfer system technology within the area.

The activities will be conducted by an interdisciplinary team of specialists working under CATIE's "Concentrated Action Modules" (MAC). The proposed area will be subjected to a socio-economic and technical diagnosis where current small farm systems will be characterized and major constraints identified. Based on this results, field research will be conducted and validated on small farmers' plots. Training and technology transfer will be undertaken and an increasing number of farmers and change agents will be exposed to system technology.

Initial actions will be developed in the Municipio of Tejutla, and in subsequent years the area of influence will be expanded in such a way that by the fifth year of the project, the whole Department of Chalatenango will be covered. These efforts will be coordinated with the government's development program for the northern zone and CATIE's other system research projects that will be working in the same area.

The present project has a life span of four years, which added to an initial year of action already under way, will complete the required 5 years of reaching MAC's goals of local development. The total expenditure considered for four years in US\$1,174,000.00.

## 2.0 FRAMEWORK

The Central American region has an exceptionally high rate of population growth. The total population was 8 million in 1950, 16 million in 1970 and it is expected to reach 36 million inhabitants by the year 2000.

A special feature of the demographic growth is that rural

population will decline from 73% in 1970 to 65% in 2000. However, in absolute numbers, the rural population will double from 11.6 millions in 1970 to 23.2 millions in the year 2000.

As a consequence, a strong increase in supply of agricultural products will place an unusual burden on rural production, and also the demand for agricultural land will increase, coupled with an increase in labour supply.

Low average income and the small size of their farm units are among the major constraints that limit the Central American small farmer's ability to take full advantage of an improved technology that has focused on maximization of yields and requires the application of high levels of investment and management.

To meet the challenge of population growth, more appropriate technologies have to be developed. In order to do so, the main constraints of the farmers have to be considered, the small farm has to be used as a reference point for all decisions and changes.

The EEC is financing CATIE for an initial year of MAC action in the Department of Tejutla, Republic of El Salvador. Within this area the present proposal will expand its action during 5 years to work on a profound understanding of the small farm systems of the area, identify its major constraints and develop and transfer technologies appropriate to the socio-economic and ecological conditions of the area.

The Republic of El Salvador with the second largest population and the smallest regional area has a population density of 170 persons per square kilometer. Demographic population indicate that this density will reach 420 inhabitants per square kilometer. This situation is a matter of great concern, particularly in view of the fact that no new agricultural frontiers exist, soil exhaustion and soil erosion are growing problems.

A multidisciplinary research, training and technology transfer effort could alleviate some of the present and future problems of the selected area.

### 3.0 OBJECTIVES

The general goal of the proposed project is to improve the well-being of the rural people of Central America.

The specific goal is to promote rural development on a specific area of El Salvador by means of:

- a.- Increase the basic knowledge on the small farmer of El Salvador's Department of Tejutla, by means of a continuous survey which will identify the characteristics and major constraints.
- b.- Conduct on farm applied research using the farm systems approach.
- c.- Train local and regional researchers, change agents and farmers in the new system technology.
- d.- Transfer field tested technology to small farmers of the selected area.
- e.- Build local infrastructure that will permit a permanent and continuous process of research, research transfer and training of the small farmers of the selected area and other Central American regions.

### 4.0 PROJECT DESCRIPTION

CATIE's system approach to small farm research is based on an understanding of farmers' attitudes, practices and the socio-economic frame of reference. At this level the technology that is generated and tested responds to the pressing needs and is adequate to the actual condition of the rural people.

With EEC backing CATIE has started a local development program in the Department of Tejutla. The first year will encompass basic socio-economic diagnosis, coupled with an identification of current farming practices used in the area. Within the systems approach, MAC strategy consists in placing in the target

area an interdisciplinary team of specialists, that with the government and CATIE's support will promote a concentrated action of research, training and technology transfer to promote rural development.

System research is based on five steps:

Diagnosis

System design

Research of components

System validation

Technology transfer

The diagnosis will characterize the target area, identifying the major socio-economic constraints, technologies used and farmers' attitudes. With this basic information a new system is designed. This design will try to overcome the identified constraints and should respond to small farmers' needs.

The next step is the research on the components of the system. This research is carried out at the farm level with cooperative farmers. The results are incorporated into the proposed system and it is validated in the area at the farm level. When final adjustments are made, the system is transferred to small farmers.

An important component of MAC is the training activity. The present project will undertake training at all levels, small farmers, local, national, and regional technical personnel. Training is directed at promoting the understanding of farming system and transference of the technology adapted for the target area. For this area, the project will provide resources for local infrastructure that will complement regional facilities built by the government. Training and demonstrative facilities will be built.

In close action with training, an effort in technology transfer will be undertaken, using the transfer channels more commonly used by small farmers.

CENTA and CATIE research efforts in the area will be enhanced by the MAC action.

## 5.0 JUSTIFICATION

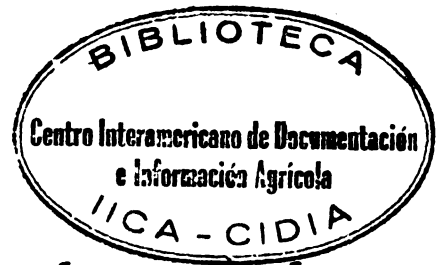
Within the Central American region, the Republic of El Salvador faces critical socio-economic and demographic problems that place an unusual burden on the agricultural sector. Its large population relative to its land base is a matter of concern, particularly in view of the fact that no new agricultural frontiers exist, soil exhaustion and erosion are growing problems, and a very high proportion of the labour force is engaged in agricultural activities with little opportunity for further expansion in this sector.

The government of El Salvador is carrying out a special development program for the Northern Zone of the country. Within this area, the National Center for Agronomic Research (CENTA) of El Salvador and CATIE have already been working on field research, generating and testing small farm systems, and because of infrastructure availability the Department of Chalatenango was selected in an initial stage for a MAC action during 1979.

The present project will provide means for an extended period of activities (four years plus the initial one), in order to accomplish the goals of rural development according to the MAC strategy. In Annex 1, the chronological and geographical activities for the project are presented.

At the end of the project and with the training and technology transfer, there will be:

- An increase of small farmer productivity.
- An increase of small farmer income.
- An improvement of the nutritional situation.
- Better utilization of human and natural resources.



6.0 MEANS TO BE APPLIED

The project will cover the execution for four years of operations, including the following items:

a.- Personnel:

It includes a coordinator and an assistant coordinator to provide backing from CATIE. In the area of work, four specialists in crops, animal production, forestry and technology transfer will be operating with the help of assistants.

The project will also provide some secretarial backing.

b.- Means of Transport:

In the country, the residents will have four vehicles and the assistants three motorcycles. The project will also cover operating and maintenance expenses.

c.- Equipment:

Field research and weather measuring equipment will be available in the MAC area. This includes agronomic tools and small equipment.

d.- In-Country and Regional Backing:

It will cover the requirements for the backing of the field team. Included are office equipment and furniture, office supplies and materials, in-country and regional travel and communication costs.

e.- Infrastructure for Training:

In the base of operation, teaching and demonstrative facilities will be built. CENTA will develop a regional center in the area and the project will provide for building a conference room and demonstrative facilities for crop and animal production field days and conferences.



7.0 BUDGET

The project, a four-year program, will require the following budget.

	Thousand US\$
A.- RESEARCH	507
B.- TRAINING	35
C.- TECHNOLOGY TRANSFER	174
D.- CONSULTANT SERVICE	24
E.- IN COUNTRY BACKING	57
F.- BACKING FROM H.Q.	332
G.- INFRASTRUCTURE	<u>60</u>
PROJECT TOTAL	1,189

A detailed description of the budget, by item and year is presented in Annexes 2 and 3.

8.0 ANNEXES

ANNEX 1

MAC CHRONOLOGICAL AND GEOGRAPHICAL ACTIONS

CATIE's "CONCENTRATED ACTION MODULES" are defined as a geographical area where conditions are created for an interdisciplinary team of specialists, with the government support and backing through national entities and CATIE, to originate, test and develop adequate and transmittable technology for the small farmer.

The present proposal with the development of a module (MAC) in the Department of Chalatenango, Republic of El Salvador, will carry out-research activities, training and technology transfer within this area.

The strategy that will be used by the present project is based on an expanding area of work. During the first year only one municipio (Tejutla) will be used as area of action, while two others will be on a preliminary phase and two additional municipios on a exploratory action. In subsequent years the geographical area will be expanded in such a way that by the end of the fifth year the whole Department of Chalatenango will be influenced by the MAC.

In the following table and map, the yearly sequence of expanding areas is presented. It can be noted that the expansion of the areas of action is based on a central municipio (Tejutla), where research, training and demonstrative facilities will be located.

The gradual development of the working areas will help the initial process of understanding the local conditions and as the experience of the technical personnel increases, its area of activities will also increase.

MAC CRONOLOGICAL AND GEOGRAPHICAL ACTIONS

DIAGNOSIS, RESEARCH, TECHNOLOGY TRANSFER AND TRAINING  
ACTIVITIES

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MAC'S YEAR OF ACTION	IN DEPTH	PRELIMINARY	EXPLORATORY
Initial*	Tejutla	La Reina, El Pa- raiso, Sn. Rafael	Agua Caliente Las Vueltas
Second**	Tejutla, La Reina El Paraiso, San Rafael	Agua Caliente Las Vueltas	Chalatenango Nueva Con- cepción
Third	Tejutla, La Reina El Paraiso, San Rafael - Agua Caliente, Las Vuel- tas	Chalatenango Nueva Concepción	Remaining Municipios
Fourth	Tejutla, La Reina, El Paraiso Sn. Rafael, Agua Caliente Las Vueltas Cha- latenango Nueva Concepción	Remaining Municipios	---
Fifth	All Municipios from the Department of Chalatenango	-----	---

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\* First Project already approved.

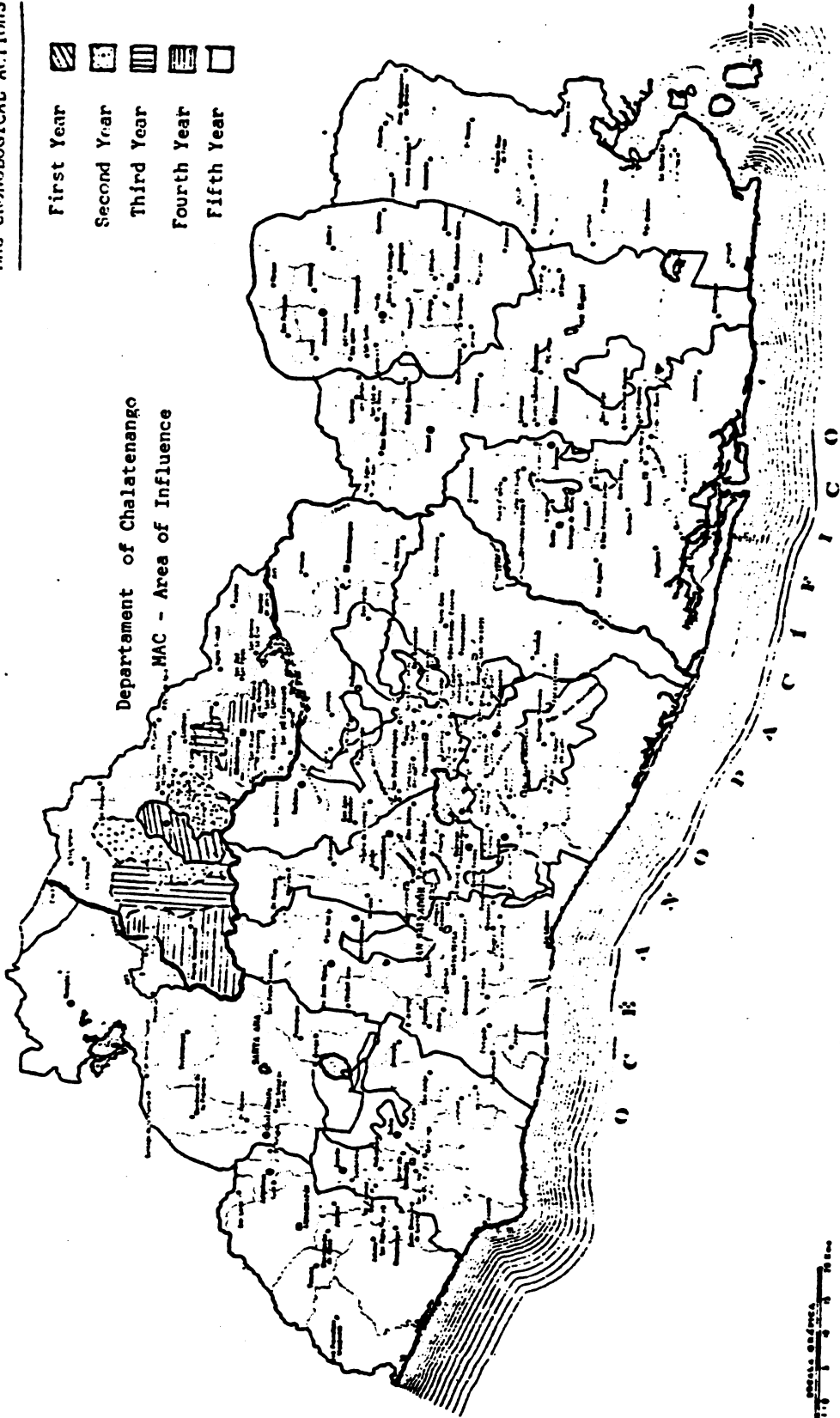
\*\* Second to Fifth, current proposed Project.

FIGURE 1. Republic of El Salvador

MAC CHRONOLOGICAL ACTIONS

- First Year
- Second Year
- Third Year
- Fourth Year
- Fifth Year

Departament of Chalatenango  
MAC - Area of Influence



ANNEX 2

FOUR YEAR BUDGET  
(US\$ THOUSANDS)

A- <u>RESEARCH</u>	<u>YEAR</u>				Total
	1	2	3	4	
- Crop Spec. M.S.	35	35	35	35	140
- Animal Production Spec. (Ing.)	16	16	16	16	64
- Forestry Spec. (Ing.)	16	16	16	16	64
- Field Assistants	12	15	15	15	57
- Vehicles	-	30	-	-	30
- Motorcycles	-	4	-	-	4
- Equipment	3	3	3	3	12
- Country and Regional travel	10	10	12	12	44
- Field research materials	6	8	8	8	30
- Occasional Labour	4	4	4	4	16
- Maintenance and operation of equipment	10	12	12	12	46
	112	153	121	121	507
B- <u>TRAINING</u>					
- Audiovisual equipment	3	-	2	-	5
- Seminars <u>in situ</u>	4	4	4	8	20
- Printed material	2	2	2	4	10
	9	6	8	12	35

	<u>YEAR</u>				
<b>C- <u>TECHNOLOGY TRANSFER</u></b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>Total</b>
2 Information specialists (Ing.)	32	32	32	32	128
- Vehicle	-	10	-	-	10
- Publications, reprints, reports	2	2	2	2	8
- In-country and regional travel	4	4	4	4	16
- Maintenance and operation of equipment	3	3	3	3	12
	<b>41</b>	<b>51</b>	<b>41</b>	<b>41</b>	<b>174</b>
<b>D- CONSULTANT SERVICE</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>24</b>
<b>E- <u>IN-COUNTRY BACKING</u></b>					
- Secretary	8	8	8	8	32
- Office furniture and equipment	9	-	-	-	9
- Office supplies and materials	3	3	3	3	12
- Communications	1	1	1	1	4
	<b>21</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>57</b>
<b>F- <u>BACKING FROM H.Q.</u></b>					
(See annex 3)	83	83	83	83	332
<b>G- <u>INFRASTRUCTURE</u></b>					
- <u>In situ</u> conference room	30	-	-	-	30
- Demonstrative facilities	-	30	-	-	30
	<b>30</b>	<b>30</b>	<b>-</b>	<b>-</b>	<b>60</b>
<b>PROJECT TOTAL</b>	<b>302</b>	<b>341</b>	<b>271</b>	<b>275</b>	<b>1,189</b>

BUDGET FOUR YEAR SUMMARY

	<u>YEAR</u>				
	1	2	3	4	Total
A- RESEARCH	112	153	121	121	507
B- TRAINING	9	6	8	12	35
C- TECHNOLOGY TRANSFER	41	51	41	41	174
D- CONSULTANT SERVICE	6	6	6	6	24
E- IN-COUNTRY BACKING	21	12	12	12	57
F- BACKING FROM H.Q.	83	83	83	83	332
G- INFRASTRUCTURE	30	30	-	-	60
<b>TOTAL</b>	<b>302</b>	<b>341</b>	<b>271</b>	<b>275</b>	<b>1,189</b>



ANNEX 3

BUDGET FOR H.Q. BACKING OF EEC PROJECTS

	1	2	3	4	Total
- Coordination Activities and Headquarter Technical Support	35.0	35.0	35.0	35.0	140.0
- Secretarial Support	10.0	10.0	10.0	10.0	40.0
- Equipment, supplies, and materials	15.0	15.0	15.0	15.0	60.0
- Travel and per diem Head- quarters Staff to support Project Activities	12.0	12.0	12.0	12.0	48.0
- Communications	6.0	6.0	6.0	6.0	24.0
- Computing	5.0	5.0	5.0	5.0	20.0
	<hr/>				
TOTAL	83.0	83.0	83.0	83.0	332.0