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AGENCY FOR INTERNATIONAL DEVELOPMENT
UNITED STATES OF AMERICA A. I. D. MISSION
TO EL SALVADOR
C/O AMERICAN EMBASSY
SAN SALVADOR, EL SALVADOR, C. A.

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July 11, 1975

TO: Mr. John R. Breen, AAA/LA/DR
FROM: Norman Cohen
Albert L. Brown

May 13, 1975 - 237-
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eval. of CENTA

SUBJECT: Appraisal Trip Report on El Salvador Agricultural
Development - Research, Education and Extension Loan,
No. 519-L-018

519-22-110-164

I. Purpose of Appraisal Trip

On October 16, 1974, the Deputy Administrator's Loan Pipeline Review Team established September 30, 1975 as the terminal date for requesting the opening of commitment documents under this loan. Any further extension would require the approval of the Deputy Administrator. Then, on April 28, 1975, the Centro Nacional de Tecnología Agropecuaria (CENTA) submitted a report on the progress of this loan project and requested the extension of the Terminal Commitment Date (TCD) to June 30, 1976 (from June 30, 1975) and the Terminal Disbursement Date (TDD) to December 31, 1976 (from December 31, 1975). Following, on May 23, 1975, the Mission approved and submitted to AID/W a Project Appraisal Report (PAR) on this Loan which raised questions, particularly regarding the GOES support of CENTA, but concluded that the project's "stated purposes will be largely achieved."

Because of the issues raised in the PAR, AID/W agreed to extend the TCD only to August 31, 1975 leaving any further extensions of the TCD and TDD to be resolved by an AID/W Appraisal Team which would make an in-country review of the project and prepare a report of its findings. The team members, Norman Cohen, PPC/DPRE and Albert L. Brown, ATAC, visited El Salvador during the week of July 7 - 11, 1975 and are submitting this report.

II. Summary and Recommendation

During the week of July 7-11, the Appraisal Team met with the Minister of Agriculture and his staff, the Director General of CENTA and the heads of research, education and extension, and visited CENTA headquarters and field facilities. We also met with the head of CONAPLAN, the GOES

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National Planning agency, U.S. Ambassador Campbell, USAID Director Anderson and USAID staff. The message communicated to the Team is that CENTA is an important organization within the Ministry of Agriculture, is gaining growing GOES support and U.S. assistance of CENTA is desired by the GOES.

While the original plan to make CENTA a semi-autonomous unit would have given CENTA greater flexibility of operation, it does not appear that CENTA suffers as a division of the Ministry of Agriculture (MAG). It controls a substantial portion of the personnel and is allocated a sizable budget. Autonomy may come, but, until it does, its inter-relationship within the organizational structure of the Ministry appears logical and appropriate.

CENTA's three major functions - research, education and extension - seem to work well together, utilizing the staff and information flowing from one to another. The graduates trained at the Escuela Nacional de Agricultura (ENA) move into the extension and research offices and the results of laboratory and field experiments flow to the extension offices. The staffs in the extension offices use a variety of methods to communicate new data to the farmers. While staff turnover rate has been high, recent salary increases to a competitive level, the prospects of additional facilities, and the purchase of vehicles (due to arrive next January) have reduced staff loss considerably.

Though CENTA has had a somewhat slow and shaky start, the present environment is decidedly positive, though certain success can not be guaranteed. Periodic semi-annual evaluations should be made to assure continuation of current progress. This blends well with the progress being made on the development of new facilities and the procurement of equipment for the facilities and vehicles. Additionally, the GOES has committed itself (letter ^{expected} from the Minister of Agriculture and GOES budget projections) to providing additional resources to meet substantially increased costs and to complete the regional and support centers. Finally, AID commitment of loan funds to this project now exceeds \$1.0 million, of which \$736,600 is tied up in vehicle purchase contracts for delivery in January 1976. Commitment of the remaining funds by June 30, 1976 now seems assured.

The GOES request for extension of the Terminal Commitment Date to June 30, 1976, and the Terminal Disbursement Date to December 31, 1976, seems reasonable and AID approval of such extensions are appropriate. The Appraisal Team recommends that the extensions be granted.

III. THE CENTA CONCEPT

The Nathan Report on the El Salvador sector analysis cited the weak research and delivery systems as major constraint on agricultural development, and started a study process to overcome these limitations. The result was the creation of CENTA in December 1971 by combining the agricultural research and extension branches of the Ministry of Agriculture with ENA as the first step of a \$40 million, decade-long, institutional development program.

The basic purposes of this effort were to develop an applied research capability, improve the technology delivery system, develop a critical mass of trained agricultural talent, integrate research teaching and extension, and assist in the continued analysis of agricultural problems.

Several points should be kept in mind in assessing the viability and character of this activity: (1) This loan was cut down and segregated out of a much larger activity, and in the absence of the rigorous design criteria now applied, a good deal of the rhetoric associated with the purposes of the larger activity came through into the CAP; (2) The same lack of design rigor resulted in a decided absence of effective progress indicators in the CAP, while targets are limited to the loan inputs; (3) Some of the assumptions implied in the CAP, e.g., CENTA's autonomy, are of questionable validity, while some conditions, e.g., the need for an advisory council, were considered to be essential to project success, but are really only unverified (and unverifiable) doctrine. In other words, many of the issues which have led people to question whether this is indeed the same project which was initially approved are the outgrowth of poor design, unwarranted or unrealistic assumptions, and perhaps also, to an attempt to isolate an institutional development project from its real life political, social, and economic context.

We have traced the elements of this fairly complex project (indeed, it was once considered to be a subsector project) (see diagram, Annex 1) and find that it makes good sense, despite the formal weaknesses of design and some questionable judgments on the importance of some project elements, the difficulty of architectural design, and the vagaries of the political process.

We conclude that nothing fundamental has changed except timing. The project objectives of establishing effective research, extension, and education capabilities within an integrating framework remain viable, as do the methods for achieving those objectives. It is unfortunate that so much stress was placed on autonomy. While autonomy would surely facilitate the administration of CENTA dependencies, it is not absolutely essential to success of the concept. The decision on autonomy is essentially a national political determination, subject to change (or change back) at any time.

IV Implementation

A. CENTA

1. Structure

a. Autonomy

Autonomy provides considerable administrative flexibility. It permits procurement without pre-audit, budget transfers among objective classes establishment of positions and compensation levels. Budgets continue to be processed and authorized through the same executive and legislative channels, but on a program rather than a line item basis. It is obviously preferred by CENTA, but resisted by tradition.

CENTA is not and has never been autonomous or semi-autonomous, but is one of the major dependencies of the Ministry of Agriculture (33% of internal operating budget, 20% of investment budget, 32% of personnel See Annex 2, Sector Organization) GOES is now preparing a draft law organizing the public agricultural sector under which CENTA may become one of the four major semi-autonomous units which GOES uses to control agricultural development, but passage is at least six months in the future.

Autonomy would be most useful to CENTA, particularly in the competition for professional and sub-professional personnel. In the absence of autonomy, this competition requires a high GOES priority to adjust CENTA salary levels, as was done this year. Current priorities for CENTA are favorable.

b) Incorporation of Complementary Activities

The fact that the CENTA organization did not incorporate all research activities of the Ministry as originally proposed has probably been favorable to CENTA's development. Those research activities not yet transferred to CENTA probably should not be. CENTA research is oriented towards agricultural production. Things like soil conservation, fisheries and forestry would not add enough to offset the diffusion of priorities they would cause. The type of research now conducted in animal husbandry is not comparable in type or quality to other CENTA research. Its transfer to CENTA would be a management problem rather than an asset. CENTA's research arm is developing professionally along priority lines (see Appraisal Section VI), and it is expanding its sphere of operations in a desirable pattern.

This year CENTA's extension service will incorporate approximately eighty livestock extensionists and twenty to twenty-five irrigation extensionists formerly assigned to other parts of the Ministry. These will fit in well with the type of activities currently carried out by extension.

c) Advisory Council

The Advisory Council was named but never functioned, since CENTA never became autonomous. Like the planners, we feel that such a council would be useful but do not believe that anyone has ever proved its essentiality or measured its utility.

d). Integration of Research, Education and Extension

~~CENTA has provided an effective mechanism for integration despite the fact that present headquarters and operating sites are dispersed~~
Completion of CENTA headquarters at San Andrés will bring all units physically together and facilitate continued integration. CENTA operations are moderated by an Executive Committee composed of the Director General, Directors of Extension, Research, and Education, CENTA-AID Project Coordinator, and Director of Planning. The research arm has been organized into teams along major lines of investigation, with the extension specialists and teaching staff included in each team. Research stations and Support Centers are usually collocated with selected extension agencies (See Map, Annex 3). Important improvements in methods and materials developed through research appear to be getting out to the extension agents, and through them to the farmers, with a strong focus on small farmers.

2. Personnel

The number of authorized positions has increased steadily from an average of 460 in 1970-72 to 585 in 1973-75. Of the latter number, 100 (17%) were professional/executive, 280 (48%) were sub-professionals (agrónomos), and 205 (35%) were clerical/Technical. Professional positions have increased at a slightly faster rate than other classes, with most professionals in research. The agrónomo, with three years training at ENA is still the dominant agent in the extension service, as in most technical agricultural positions in El Salvador.

The availability of positions does not mean that these positions are filled. CENTA, particularly the extension service, has always served as introductory employment to recent graduates of ENA, with a fairly high turnover of personnel to other divisions of CENTA, MAG, other public agencies and the private sector. This turnover became critical in 1973 when increased demand from the private as well as the public agricultural sector met with the non-supply of professionals from a closed University of El Salvador.

As salaries were bid up, CENTA extension service became non-competitive and lost 70 agrónomos in 1973 and 65 in 1974. This exceeded the replacement potential of ENA, so actual strength dropped to 83 agents in 1973 out of an authorized strength of 114, and to 66 agents in 1974, out of an authorized 112. Other parts of CENTA suffered significant losses, but not of such relative magnitude.

In 1975, MAG and the Ministry of Hacienda, in recognition of the seriousness of the situation, authorized major increases in CENTA salaries, so that these are now comparable with other public agriculture sector salaries (see Annex 4). The Extension Service has already rebuilt its numerical strength and has been authorized 30 additional slots at higher salaries to help it retain some of its veterans. The availability of vehicles for increased mobility will also help to recruit and retain staff.

It is entirely probable that the extension service will continue to suffer a high rate of attrition (though lower than in the past) as new employees gain experience and move on to more remunerative positions with better perquisites and more favorable locations. This is hard on CENTA but not on the technical assistance function, of which CENTA is only one branch. Agribusiness and other public sector institutions (notably the Banco Nacional de Fomento), to which many former CENTA agrónomos are attracted, also provide technical assistance. This problem will not be resolved until the demand and supply of agrónomos are closely aligned, perhaps in a generation or two.

A potentially more serious problem - loss of professionals by the Research Division - continuously overhangs CENTA. Fortunately, this threat has not been fully realized, although there have been losses. The higher salaries available in CENTA to Ingeniero Agrónomos, the management positions to which they may aspire, more favorable locations, and better perquisites (including graduate training) combine to limit staff loss. There are now ten professionals with M.S. degrees in CENTA compared with two in 1972.

At this point, it appears that disastrous loss of personnel has been averted, and prospects are favorable for continued productive growth in personnel, both at professional and sub-professional levels. The new office and laboratory facilities and improved equipment and vehicles will help provide desirable working conditions. The higher priority for agriculture generally and CENTA particularly, as evidenced by recent salary treatment, should enhance future prospects.

3. Budget

Over the last five years the MAG operating budget has tripled. MAG's investment budget has increased even faster, propelled in part by foreign loans (Table 1, Annex 5). CENTA's operating budget has increased at a compound/annual rate of about 21% since 1972. At 6.6 million colones (\$2.6 million) it is about one-fifth of the total MAG operating budget. However, if transfers to autonomous agencies are excluded, it is about one-third of MAG's regular operations and has maintained this position since 1973. In other words, CENTA has not been disfavored within the Ministry relative to ~~the~~ other MAG functions, but much of the increase to MAG's operating budget is destined to support autonomous programs. This trend will probably continue if the proposed organic law of the public agricultural sector converts CENTA

to autonomous status, and if agriculture continues to hold its current position of political significance. As indicated elsewhere, the GOES agricultural sector priority is high, and the government has consistently made up inflation caused or other unanticipated shortfalls in the project budget from its own funds.

Future projections (Annex 5, Table 2) show a continued healthy growth in operating budget projected through 1978. Investments will be particularly heavy in 1976 as the final disbursements of this A.I.D. loan overlaps with construction and equipment of the GOES seed project.

4. Management

Although the CENTA Director General has changed five times since the organization was formed, the "Institutional" management seems to be effective. The use of an Executive Committee undoubtedly helps keep the operation on an even level. There is a willingness to experiment with varied forms, e.g., the incorporation of all teaching and research staff into part-time teaching and research roles. There is also willingness to abandon such experiments when they prove inadequate.

The fact that CENTA has been able to continue its operations in the face of serious staff attrition over the last two years is significant. With the recent action to equalize salary structures, the promise of new facilities, equipment, and support should do much to ease management problems.

CENTA's internal operating budget seems to be reasonably balanced between permanent salary and operating costs. Permanent salaries have accounted for about 60% of the total operating budget over the last three years. Even when day rate labor is added, non-salary allotments are 26% of total budget. This favorable ratio assures some degree of operating efficiency.

B. Construction

The construction program consists of two parts: (1) construction of a new CENTA headquarters (administration and library building, laboratory, classrooms and maintenance buildings), and 2) regional and supporting centers. The completion of construction is now projected to take two years longer than originally anticipated in the CAP (December 1977 rather than December 1975) because the work required for the final design of all facilities was more difficult than expected and required much redesign. While CENTA was to have done the design work, their in-house staff was unable to cope with the problems and a private consultant, Rodríguez-Lara Berger, was retained under a contract signed in April 1974. Design work and bid packages are now underway for the CENTA headquarters and present projections show final construction work at the headquarters will be completed in October 1976. (including final equipment installation).

Moreover, work on the regional and supporting centers will take longer to complete, expected by late 1977, because of the diversity of locations and difficulty in obtaining good locations to meet the needs of extension offices. Because of substantially increased costs since the loan was authorized in 1972, the CENTA has requested and the Minister of Agriculture concurs, that those A.I.D. loan funds originally earmarked for the regional and support facilities be used for the headquarter's facilities to help the GOES defray a portion of the cost increases there, leaving the GOES to finance the regional and support facilities (originally estimated to cost \$800,000 but now projected at \$1.2 million). The GOES FY 1976 budget contains funds to cover construction and equipment costs for the regional and support centers. There are 38 such facilities planned (4 regional centers, 12 zonal centers and 22 support offices) and sight site locations have now been acquired. The purchase of several other sites is being negotiated.

The Appraisal Team views the regional and support centers as important to the project and believes the project should continue as originally authorized. This would leave the loan authorization and agreement valid with the only adjustments to the project being a greater share of the costs to be borne by the GOES and a revised financial plan from that shown in Annex I of the Loan Agreement.

C. Equipment

Equipment procurement breaks down into two parts: (a) equipment for the CENTA facilities and (2) vehicle procurement.

Equipment lists for the CENTA facilities have been delayed because of the delay in construction activity. Bid documents for equipment will be published in July 1975, with contracts scheduled for signing by November and delivery during 1976. Consistent with the GOES agreement to complete construction of the regional and support facilities, AID will not help finance equipment for these facilities leaving this solely to the GOES.

Contracts for vehicle procurement were signed in January 1975 with delivery scheduled to be completed in January 1976. The \$759,200 purchase cost has been committed and will be disbursed next January.

D. Technical Assistance

Technical assistance also involves two elements:

(1) Consulting engineering contract with Rodríguez-Lara-Berger which costs \$536,303. AID is funding \$120,000 and the GOES \$416,303. Since the engineering contract is for both design and supervision, final disbursement will not be until late 1976, though the A.I.D. funds will be fully spent by December 1975.

(2) Various individual consultant contracts for \$100,000 to assist the Ministry of Agriculture. 13 contracts have been approved and final disbursement is scheduled for June 1976.

E. Training

Short-term training of CENTA personnel (AID loan \$100,000) has moved slowly because of CENTA and Ministry staff changes. While less than \$30,000 has been committed, a revised training plan has recently been submitted and full commitment of AID funds for this purpose will be accomplished before June 30, 1976.

V. Financial Plan

The comparative financial plans below (plan from CAP vs. current projections) show costs for the project as having increased 33%, from \$9.3 million to \$12.4 million. The total increase will be borne by the GOES thus raising their input from \$5.3 million to \$8.5 million, or 58%. In terms of the total project, the GOES will be contributing 68% of all costs.

The Minister of Agriculture has agreed to the additional cost increases and will send a letter to the USAID expressing the GOES' commitment to provide the required additional resources and to complete the construction and equipment of the regional and support facilities.
A subsequent implementation letter from the Mission reflecting AID/W's approval of the extension of the TCD and TDD and acknowledging the Minister's letter should also be countersigned by the Minister.

As of May 31, 1975, six Letters of Commitment had been opened under this loan for \$1,059,361. Aggregate disbursements were \$119,314.

FINANCIAL PLAN (TAKEN FROM THE CAP)
 (Amounts in thousands US\$)

	<u>GOES</u>	<u>A.I.D.</u>	<u>TOTAL</u>
1) Economic Analysis/Planning			
a) Technical Ass't.	--	100.0	100.0
2) CENTA			
a) Facilities	1,585.0	1,585.0	3,170.0
b) Equipment	--	1,150.0	1,150.0
c) Furnishings	163.5	163.5	327.0
d) Vehicles	--	774.0	774.0
e) Add'l. Admin. & Operating Costs	3,616.0	--	3,616.0
f) Training	--	100.0	100.0
g) Tech. Ass't. (enr.)	--	120.0	120.0
	<u>5,364.5</u>	<u>3,992.5</u>	<u>9,357.0</u>

FINANCIAL PLAN (current estimates)
 (Amounts in Thousands US\$)

	<u>GOES</u>	<u>A.I.D.</u>	<u>TOTAL</u>
1) Economic analysis/Planning			
a) Technical Ass't.	--	100.0	100.0
2) CENTA			
a) Facilities	4,298.2 <u>1/</u>	1,585.0 <u>2/</u>	5,883.2
b) Equipment	--	1,150.0	1,150.0
c) Furnishings	140.8	163.5	304.3
d) Vehicles	22.6	736.6	759.2
e) Add'l. Admin. & Operating costs	3,616.0 <u>3/</u>	--	3,616.0
f) Training	--	100.0	100.0
g) Tech. Asst. (enagr.)	<u>416.3</u>	<u>120.0</u>	<u>536.3</u>
	8,493.9	3,955.1	12,449.0

1/ Includes GOES-funded equipment for regional and support facilities.

2/ No longer includes \$500,000 as AID contribution to constructing/equipping regional and support facilities.

3/ No change in this figure from that shown in CAP as no current projections are available. However, the figure is clearly too low given increases in CENTA's staff, higher salaries and inflation since 1972.

VI. Appraisal

A. The Sector

GOES is now embarking on a program of agricultural development that has as its conerstone a realignment of the agricultural public sector to provide a coordinated attack on the serious and persistent development problems of the agricultural sector. This program, which builds on new and old institutional arrangements is directed at many of the problems identified in the sector analysis which led to the creation of CENTA in the first place. However, we find these plans, as sketched by the Minister to be more aggressive yet more realistic than the earlier ambitious but technocratic approaches.

As we understand it, the major thrusts of this program are (1) an attack on the land use problem to get land into the hands of small farmers who will use it and increase its productivity and (2) to provide the facilities and incentives to small farmers to enable them to increase their productivity. The four foundation institutions involved in this effort are (1) the Instituto Regulador de Abastecimientos (grain storage and price stabilization), (2) the Instituto Salvadoreño de Transformación Agraria (land redistribution), (3) the Banco de Fomento Agropecuario (credit and inputs), and (4) the Centro Nacional de Tecnología Agropecuaria (development and transfer of improved methods and materials). All of these institutions are now in place, and the Ministry is working on an organic law of the public agricultural sector to realign them for greater concentration of effort in pursuit of agricultural policy. In the process, it is quite possible that CENTA will receive the autonomy long hoped for, but in a sector system which will make its efforts more productive.

In light of these conditions, we do not believe that the delays in construction and equipment have materially hurt CENTA's development. Indeed, as a result of the master planning which occasioned much of the delay, the facilities will better equip CENTA for an expanded role. And CENTA is receiving new transport and other equipment at a time when its research unit has new materials and methods ready to release and when Governmental priorities and the development of other sector institutions provide complementarity.

B. Research

The lack of adequate materials and methods was one of the critical limitations singled out by the Nathan Report, which led directly to organization of CENTA and the AID loan to support the institution's development. It appears to us that the CENTA research arm has achieved a great deal. Despite the staff turnover problems cited above, it has built, maintained and improved its staff, and development organizational arrangements which have fostered a coordinated and productive attack on

significant problems.

CENTA has developed, tested, and has ready for release synthetic and hybrid varieties of corn whose productivity is much higher than existing lines. It can release at this time two very high yielding varieties of sorghum (white for human consumption, red for livestock). It has tested and is releasing cowpea varieties as lowland substitutes for beans. CENTA has developed a multicropping system unique in the western hemisphere and is moving into widespread dissemination of the system through field demonstrations and a recently issued manual. It is involved in international research networks on basic grains, is carrying out a significant number of lines of work on other crops, and is developing the economic research to back it up.

All told, we would give CENTA research very high marks for a practical research program oriented to its own capacity and the needs of the country.

C. Extension

We are seeing the agricultural extension service at a time when it is just recovering from a devastating loss of staff that reduced its extension agents from a reasonable complement of 110 to 66 - not enough to minimally staff its 75 established offices. In the process it lost both new and experienced staff, including many supervisors. It is a significant tribute to the remaining supervisors and staff that rebuilding is possible at all.

Still, El Salvador has the most favorable extension agency:: farmer ratio of any Central American country, as well as competent leadership and good relations with the research arm. Numbers are being rebuilt rapidly, even with attrition expected to continue, but at a reduced rate. However, we expect efficiency to remain impaired for some time, since it takes time for new agents to learn their territories as well as the intricacies of extension methodology. Fortunately, the Escuela Nacional de Agricultura is providing basic training in extension operations to its students.

D. Education

The Escuela Nacional de Agricultura provides a 3-year curriculum to high-school graduates, who are awarded the sub-professional degree of "Agrónomo". Graduates of ENA are the mainstay of the extension service, other agencies of the public agricultural sector, and agribusiness. (The National University graduates Ingenieros Agrónomos, professionals equivalent to the B.S. - M.S. levels).

ENA has a capacity of about 400 students, leading, after attrition, to an annual graduation of about 80. In recent years, the annual graduation

has been closer to 50 Agrónomos, largely because of space and financial limitations. Students receive full fellowships (food and lodging as well as tuition). However, the drop-out rate is high, tuition (including costs are high, and the student body has been limited, unfortunately, at just the time when demand was reaching new heights and the National University was closed.

For the last two years, ENA professional staff has been absorbed into the research teams, with the intent that faculty would continue research and teach part-time. This experiment has not yielded the expected results when applied across the board, although part-time teaching combined with research is traditional at El Salvador's universities. Consequently, in 1976, full-time teaching staff will be added to the program. This re-staffing of ENA will accompany a special program of recruitment from the three agricultural high schools in the country and proper qualification of candidates to reduce the drop-out rate.

Judging by demand, the school is good. The additional dormitories and other facilities will expand its physical capacity. Whether the budget can keep up with the facilities remaining to be built, or if it should not be abundantly evident that the increased emphasis being given to agriculture will require more trained agriculturalists.

VII. Recommendation

The Appraisal Team makes the following recommendations:

(1) that the terminal commitment date (TCD) be extended from August 31, 1975 to June 30, 1976.

(2) that the terminal disbursement date/^(TDD) be extended from December 31, 1975 to December 31, 1976.

(3) that the implementation letter from the Mission advising the Minister of Agriculture of AID's approval of TCD and TDD extensions include recognition of the Minister's letter committing the GOES to provide funds needed to complete the project and request the Minister to counter-sign the letter.

(4) that a periodic, semi-annual evaluation of this project be conducted by the Mission to assure continuation of present progress of and support for CENTA.