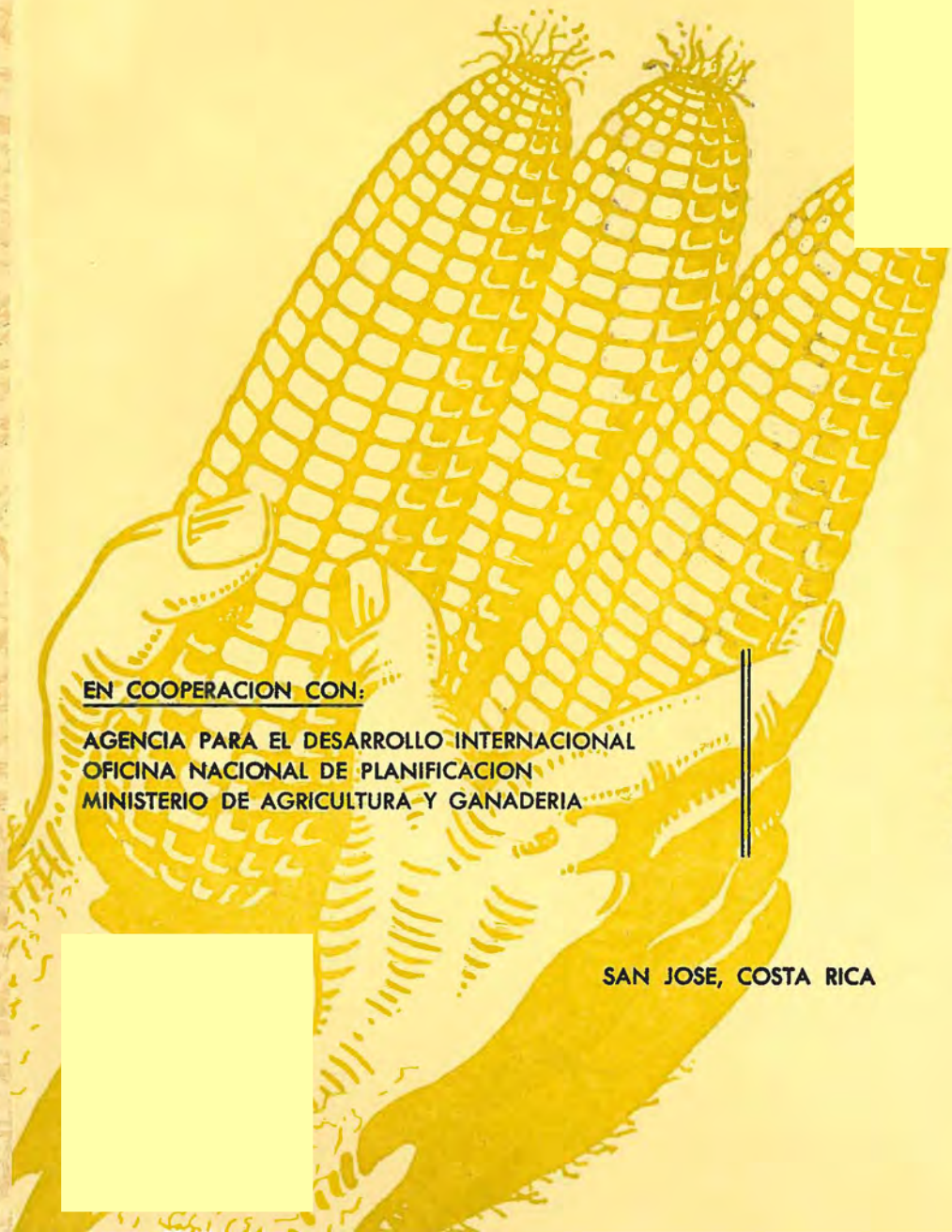
UNIVERSITY OF FLORIDA REPORT

INFORME DE LA UNIVERSIDAD DE FLORIDA

TECHNICAL ASSISTANCE IN AGRICULTURE TO THE GOVERNMENT OF COSTA RICA



BY

VICTOR E. GREEN, Jr.

Agronomist

EN COOPERACION CON:

AGENCIA PARA EL DESARROLLO INTERNACIONAL
OFICINA NACIONAL DE PLANIFICACION
MINISTERIO DE AGRICULTURA Y GANADERIA

IN COOPERATION WITH:

US AID MISSION
NATIONAL PLANNING OFFICE
MINISTRY OF AGRICULTURE
AND LIVESTOCK

SAN JOSE, COSTA RICA

UNIVERSITY OF FLORIDA CONTRACT

Contract AID/la-261

June 15,1968

TO: Robert B. Black, Director
USAID Mission to Costa Rica
San Jose, Costa Rica

THRU: William E. Schaefer
Agricultural Officer
USAID/San Jose

Hugh Popenoe, Coordinator
AID/University of Florida Contract
Gainesville, Florida 32601

James E. Ross
Chief of Party
AID/University of Florida Contract
San Jose, Costa Rica

FROM: Victor E. Green Jr., Agronomist
AID/University of Florida Contract
San Jose, Costa Rica

SUBJECT: REPORT: Technical Assistance in Agriculture to the Government of Costa Rica

FOREWORD

Name: Victor E. Green, Jr.

Position Title: ~~Agronomist~~, ~~Advisor~~ in Agriculture

Country of Assignment: Costa Rica

Prior Country Assignments: None

Tour of Duty Began: May 28, 1965

Tour of Duty Ended: June 28, 1968

Synopsis: -- Under Contract AID la-261, the Agronomist spent 37 months less home leave in Costa Rica as Advisor in Agriculture to the following GOCR agencies: Ministry of Agriculture, University of Costa Rica College of Agriculture, National Production Council and the Institute of Lands and Colonization. He also counseled the Nicoya Development Association and the USAID Mission to Costa Rica, as well as serving as Advisor to the National Corn Comission, commissioned by the President of Costa Rica. This last position occupied about two-thirds his time in planning and helping to implement a National Corn Campaign, reputed to be the largest and most successful effort in Central America thus far in increasing the supply of basic food crops. The other third of his time was spent doing technical assistance duties such as planning and executing experiments in basic food crop production with counterparts at the four experiment stations in the Republic.

Every effort was made to cooperate with private industry so that it would have a large part in the agriculture of Costa Rica and its development.

He helped write the work plan of the Contract, and was instrumental in bringing many of the short-term specialists to Costa Rica. He was called upon frequently to advise the Minister and the Dean in the organization, reorganization, and conduct of administration, research and teaching activities of the Ministry and the College.

He provided thousands of technical bulletins, booklets and books to his counterparts and to libraries. He took the lead in making a color film by the Center for Tropical Agriculture of the Institute of Food and Agricultural Sciences of the University of Florida, a film that that has received wide acclaim in Florida and throughout Central America.

Hundreds of varieties of corn, swwet corn, sorghum, rice, castor bean, sesame, sunflower, soybean, okra, peanut, sorgo, grass, legumes, vegetables, and fruits were caused to be introduced, many for the first time.

The Minister of Agriculture presented the Agronomist a Diploma of Appreciation at the 1967 Annual Meeting of the Central American Cooperative Program for Basic Food Crop Improvement (PCCMCA), stating that it was the first such diploma presented to an advisor from an international agricultural development agency. The Advisor is humbly grateful to have received this honor.

ACTIVITIES

After a very short period subsequent to 28 May 1965, a week after the Contractwas signed, the Agronomist began what is hoped has been a successful three years of technical assistance to individuals and agencies of the GOCR. During the first month, he and the Livestock Advisor, Dr. N.C. Fine prepared a document that has been used as a request for short term advisors, and they prepared iteneraries for the leaders of the IFAS first orientation visit. This same month he began a series of many field trips to research stations and outfield plots in the host country. His contributory time to the research, extension, and teaching programs was interrupted by administrative duties as Acting Chief of Party during: May 28-July 6, 1965; May 3-17, 1966; August 17-September 12, 1967; January 17-26, 1968; from May 19-June 3, 1968; and from June 17-30, 1968.

Three weeks of this tour were spent as a delegate or special guest at the meetings of the Central American Cooperative Program for Basic Food Crop Improvement (PCCMCA). These dates were: Managua-March 28-April 2, 1966, San José-February 28-March 4, 1967; and Tegucigalpa-February 27-March 1, 1968. This group offers much promise in planning on a regional scale in basic food crop production. Already, this group has asked for a regional seed technology course which will be given by the MSU/AID Contract in Zamorano, Honduras beginning in September 1968.

Research work was already in progress at four experiment stations in Costa Rica by the time the Agronomist arrived. Except for the work under the supervision of the Livestock Advisor, and that of the Tropical Crops Advisor, Dr. Russell Desrosiers, he reviewed the plans and programs of all the experiments. It soon became obvious that the technicians had huge accumulations of data in their office areas, but that very little publishing had been done to bring the data to the attention of the farmers. It also became obvious that no rewards are given here for publishing. Rather, one was graded or guaged on the number of days he spend in the field or travelling from field to field. Part of this problem has been solved in the formation of the Regional Agricultural Centers where one can be in the field, and yet be able to do library work, greenhouse work or laboratory work.

No remarks in this report will be made on agricultural yields, trends and institutions since University of Florida reports have already been prepared and other studies are planned in this area.

The facilities of the University of Florida were called upon a number of times to satisfy requeriments not possible in Costa Rica. A few examples will suffice. Soil samples from areas thought to contain toxic amounts of copper were analyzed at the Citrus Experiment Station. Coffee beans were analyzed at the University of Florida for possible toxic amounts of arsenic and lead to humans. The Florida State Department of Agriculture cooperated in analyzing samples of pesticides, especially DDT and Aldrin for guaranteed amounts of toxicant.

COMPLETION OF WORK PLAN OF SEPTEMBER 17, 1965

Since less than one-third of the time allotted was spent in completing the items enumerated in the work plan, the plan had to be changed as provided for in paragraph 4. Even before the plan was written, it was recognized that not all items could be completed, and that the plan would have to be revised, and that not all the items could be implemented in depth. For instance, it soon became apparent that the work planned in formulating uniform laws for the use of pesticides, fertilizers, seeds, etc. fell into the province of ROCAP/USAID, and that neither ROCAP, SIECA, nor OIRSA was doing anything about uniform laws for the CACM countries. Therefore, technical assistance was requested from the University of Florida to formulate a law covering the safe use of pesticides in Costa Rica. ROCAP must have agreed in the choice, since it soon had a PASA contract team working on the problem, but only after the suggested law for Costa Rica was completed. The other recommended uniform laws, along with that for the classes and grades for vegetable standards should be formulated at regional level.

No program for 5 and 10-year projection of research was possible due to the rapid changes in the policy of the GOCR and USAID, with changing administrations affecting the projections.

Prior to the passage of 5 months in Costa Rica, the Agronomist was instructed to decrease time spent on technical assistance to agronomic research and to concentrate on planning and implementing of crop campaigns. For this reason, many facets of the technical assistance in the work plan remain to be accomplished.

It is extremly difficult to gauge success in programs of an advisory nature. A foreign Advisor is somewhat limited in what he can do in a given country. First, the language barrier is a real handicap. The Agronomist overcame this to some exent in that he studied the language until he could direct conferences and seminars and present scientific papers in Spanish at international gatherings. Since he knew that the only power he had was the power of persuasion, of suggestion, of encouragement, etc., he exploited these to their utmost. This was not a difficult job since he was working with Costa Ricans, a friendly, ambitious people, many of whom seem to sincerely want to have their country progress rapidly.

Readers of this report need not look for quantitative data regarding the activities of the Agronomist. If he had control of all the factors necessary for success, that would be possible. First, he had no control at all of the weather, one of the most important factors in agriculture. This, for instance, caused 26 inches of water to stand over the agronomic experiments at the Taboga Experiment Stations for a matter of weeks in both 1966 and 1967. Neither did he have any say in the selection of the site for that station. Neither does he take any credit or blame for the location or of the absence of the roadnet, a most important factor in transportation of production impeptus to farms and the route out for the produce of the farms. Only one more factor need be mentioned, also over which he had no control, and that is credit for agricultural production. What he did have, on the positive side, was a very good working arrangement with the GOCR technicians, many or maybe most of which have become close, lasting friends. He attempted, to get their confidence and to show them a way to do a given

job, but not necessarily the way he did the same job in the USA. Many times, this had to be modified to take into consideration the 200-inch annual rainfall at Los Diamantes or a 30-40% slope on a small corn field in the mountains, etc.

He established offices at the College of Agriculture of the University of Costa Rica and in the Crops Departament of the Ministry of Agriculture, and depending upon the day and the job, used one, the other, or both. He could not afford to favor one agency over another, since, for instance, all the bean work done at the UCR and all the sugarcane work done at the MAG. Corn work was done as a cooperative venture between the two.

EXPERIMENTS

The Advisor arrangement does not leave much of a chance for doing one's own research. However, the advisor attempted to run a few tests on his own while on assignment. These concerned two tests with corn at Los Diamantes and a test each with okra and sunflower. Cooperative tests were run with soybeans, peanuts, castor beans, and cowpeas. The corn tests served only to confirm results obtained earlier by corn specialists there. The okra test was eaten to the soil level by iguanas when the plants were about a foot high and was not replanted. The sunflower test was preliminary variety trial, but no variety performed so well as to warrant another test. This test was grown at Taboga during the dry season under irrigation, as was the okra and other tests. The peanuts were varieties of Paraguayan lines reputed to be of low oil content and maybe useful for low calorie confections. These were under 26 inches of flood water for weeks and died. The castor beans were grown cooperatively with the Taboga Station and with that of CIME at San Vito de Java. This crop needs drier weather to produce disease-free flowers than that afforded at those two locations during the rainy season. Fungicides did not control the diseases economically. The soybean test data are not yet available, and will form part of a thesis for a UCR student. The cowpea test was grown to test the adaptability of Texas Cream 40 and California Blackeye 5. These grew well and tons of fresh produce could have been harvested from these plantings for freezing (if there were a freezer plant in Costa Rica in private industry), or for canning (if No. 2 cans did not cost US 11 cents each), or for the fresh market if the demand had existed. These obstacles were responsible for the decision to let the beans dry on the vine, which they did not do due to the absence of the usual dry spell in the La Garita area of Alajuela Province. A later planting would have yielded tons of seed or dry beans. This is a much higher yielding crop than black or red beans. Various leguminous cover crops were planted between the rows of African oil palms at Los Diamantes and compared to rice as an intercrop to utilize the excess land area in young palm plantings. In developing countries, rice seems to be more important as a user of the land in cleared areas planted to palms due to socio-economic problems, present and expected.

TRAINING OF AGRONOMISTS

Since he does not believe that the GOCR should be wholly responsible for the conduct of agricultural research, especially since the Congress has never made enough funds available except for a rather restricted program, he appreciated the opportunity to counsel dozens of young agronomists who spent short times in the employ of the MAG before beginning careers in the research or service departments of the many agricultural chemical companies. These companies pay much higher salaries than the GOCR agencies, which may prove to be the factor necessary to provide the impetus for dedications among the technicians. No system of awards, either monetary or consisting of certificates or plaques, is going to motivate a young technician to any level of dedications as much as an assured wage on which he can support himself and his family, without having to resort to "moonlighting" in 2 or 3 other jobs.

COPPER TOXICITY IN RICE ON OLD BANANA LAND

Soon after arrival in Costa Rica he began cooperating with the Agronomy Department on a suspected toxicity of rice near Parrita on the Pacific Coast near Quepos. Samples of the soil were sent to the University for analysis. The condition noted here seemed worse on old banana land where large amounts of Bordeaux Mixture had been added for about 25 years. Spectrographic analysis should 0.8% Cu content, or in the furrow slice of 8 inches--22,333 lbs. He suggested experiments that would include methods to allievate or eradicate the symptoms by tying up the copper into insoluble compounds, increased organic matter additions, adding calcium compounds to raise the pH value, adding high amounts of phosphatic compounds, very deep plowing and very deep disking to distribute the copper thruout the 25-inch topsoil layer. The study was published in the Proceedings of the 13th Annual Reunion of the PCCMCA: 77-80, 1967, and field studies are continuing.

SEMINARS AND LECTURES PRESENTED

For a short time there was a weekly series of seminars in the Rural Development Division of USAID/Costa Rica. The Agronomist gave three of the six seminars, with Dr. Smith, Dr. Desrosiers and Dr. Fine giving one each. The Agronomists lectures were concerned with the plans of the National Corn Campaign. He also gave three presentations to the weekly Agricultural Task Force Meetings on the results and appraisal of the Corn Campaign, with University of Florida scientists giving many of the other presentations to this group.

Group discussions have been held with many other groups in Costa Rica including OTS, TSC, ACM/CAFP, Turrialba, Agricultural Missionaries at the Language School, FERTICA, Experiment Stations workers at the Stations: El Alto, Los Diamantes, Taboga, that of the UCR, and others.

COLOR CORN FILM: PRODUZCA MEJOR MAIZ

At the organizational meeting wherein it was decided to have a pilot campaign to pre-test the procedures to use in a National Campaign, responsibilities were assigned the various agencies involved. Since the UF Contract was involved, it naturally had to do its share if it was advising other agencies to do their share. It was agreed after all other agencies had subscribed to the program that the best contribution the UF could make was to produce a 15-minute color sound movie on corn production by small farmers using hand methods, as was recorded in the Monthly Report for May 1966. The Center for Tropical Agriculture of the University of Florida decided to underwrite the cost.

According to all who have seen it, including eminent scientists in Florida Central America, etc., it has been acclaimed as the most informative and interesting corn film made for the small land holder in Latin America. Copies have constantly circulated in Costa Rica, being shown almost every week in one place or another to most Costa Ricans. It has shown its colors under Guanacaste trees using gasoline generators as a source of current as well as on two television channels and their repeaters to armchair corn growers.

Peace Corpsmen continue to show the film as a part of a program to obtain accurate costs of corn production for the first time in Costa Rica. It was shown at the Cooperative Central American Program for Basic Food Crop Improvement at its 14th Annual Reunion at Tegucigalpa, Honduras recently.

Dr. I. D. Clement, an eminent geneticist with the National Science Foundation. and former Harvard University corn breeder in Cuba, said it was the only sensible basic food crop movie ever filmed for use in Latin America.

REPORTING

A goodly amount of the time of the Agronomist in the host country was spent writing reports. He helped write 36 monthly reports, 3 semi-annual reports, and 2 annual reports. Moreover, he was called upon to report, in addition to those outlined above, every week from December 19-24, 1966 to the week ending September 15, 1967 to the Agricultural Officer and semi-monthly (every 2 weeks) to that office from the period February 19-March 8 to the period ending May 31, 1968.

He also submitted the following reports for the 1967 University of Florida "Blue Book", which constitutes our Annual Report and individual reports of the short-term specialists:

The Costa Rican Corn Situation, by Victor E. Green, Jr.

1967-The Year of Corn in Costa Rica, Results and Appraisal of the Campaign, by Victor E. Green, Jr.

Shadow Plan for 1967 Costa Rican Corn Campaign, University of Florida Contract Team.

HOME GARDENS AND GARDENING

Everyone knows the story about the ant and the grassshopper, and knows the old adage about making hay while the sun shines, or has sense enough to make silage in those areas where haying is not possible. But not everyone takes the necessary steps to do these things. Other than having an abundance of coal, oil, and iron ore, nothing is more important to the development of a country than the growing and preserving of food. Besides not growing nearly enough food, Costa Rica preserves very little of what it grows. Most of the preservation facilities are in the hands of the government. Barns are almost non-existent, silos are a rarity, as are on-the-farm grain bins. One may see vegetable gardens at the schools, but very seldom near homes. Many vegetable patches are merely truck gardens for the markets of the cities. The only cans or jars of preserved food one can see are at 4-S Club fairs or exhibitions. The absence of ice and snow and very cold weather can act as a false security, as it certainly has here. A chayote vine or two can hardly be classed as a garden, especially since it yields only a watery vegetable.

The advisor furnished through the Contract about $200 worth of seed of leaf, stem, seed and root vegetables to the Limon Development Project and to the MAG Radio Program for distribution. The hoped-for impact from this program was hundreds of gardens in the rural area with plenty of dried or canned or jarred vegetables that would tide over families between rainy seasons.The expected impact was only to dent the surface and to act as a beginning.

Dr. Orsenigo sent many pounds of seed which were excess to his program and that and other horticulturists at the Everglades Experiment Station.. Mr. Fred Derby of Catholic Relief Services has caused to be shipped to Costa Rica 6,000 quintales of green-bean seed to be used in gardens here.

TAMAC STUDY AND PROPOSALS

Following closely the need for greater production and preservation, the Tropical Agricultural Management Co., Inc. made a study of the possibilities of growing certain crops here. The Agronomist assisted this effort almost full-time for more than three weeks, including weekends. This group found that opportunities were unlimited for the production and sale of horticultural products, lacking but the capital and processing facilities. Large markets exist in the CACM countries and in the USA. Once tooled up to produce for the export market, the industries could produce for the local market, such as is being done by Del Campo. The study was translated and reproduced by this office and the MAG.

COUNSEL, GUIDANCE, AND ENCOURAGEMENT TO FARM IN COSTA RICA

Many US citizens spent literally weeks in my office asking for information, to be put in contact with farmers, machinery companies, agricultural research people, to be given documents, etc. This type of business is more demanding in time during the coldest weather in the USA, and was quite

time-consuming during the cold weather in 1965, 1966, 1967, and 1968. No farmer or prospective grower of food crops was turned away without some information or at least, good referrals, It was thought that any development, whether by nationals or by foreigners, would be useful. It is estimated that two working months were spent on such. It is the agronomist's opinion that many US citizens have started farming in Costa Rica, after much mulling over of the possibilities, due to the presence of the University of Florida in this country. Maybe the Export-Development Center can take over this type of consultations after the UF Contract Office is closed in the MAG building in June 1968.

COFFEE PRODUCTION TREND STUDY

In May 1967, one week was spent in helping make a study of projecting coffee production in Costa Rica for 1967/68 to 1970/71. Dr. James E. Ross designed the questionaires and the Agonomist helped pre-test them and also helped fill them out at coffee fincas and processing plants, and at Extension and Bank Offices. The section of the country that he helped survey was San Ramon-Palmares-Naranjo-Tilaran area. It was during this study that he decided that diversification was going to be a slow, difficult process of change. Actually, on most of the land that he surveyed, coffee would seem to be the best crop. At least, only a treecrop would be suitable. The land is too steep for row crops or pasture, with the attendant erosion possibilities. It is also too steep for mechanical equipment other than knapsack sprayers and the like. It would seem that the cheapest and most efficient way to reduce the supply of coffee would be for the Legislative Assembly to pass a Coffee Act, which would limit the area planted and the amount marketed. The decision as to what use to make of the land from coffee production would be left to the individual finca owner, just as it is done with acreage removed from cotton in the USA, our point of reference. If he would like to use the land for tree fruits such as health-giving mango, mango, papaya, citrus, avacado, banana, plantain, guineo, guava, cherimoya, mamey, mamoncillo, naranjilla, pomegranate, zapote, etc., for his family and workers to eat in abundance, or for the local or export market, so much the better. Or he could plant vine crops such as blackberries, boysenberries, raspberries, or granadilla to name a few; or he could plant cashew, macadamia, lychee, or nutmeg if he wished. To increase the protein in his diet and of his workers, he could let them plant pigeon peas, a perennial legume shrub. The list is endless, and all the above-listed food crops can replace any land lost to coffee, with only a little effort, and quite without the resources of the United States.

SHORT TERM ASSISTANCE

Attached as Appendix C is a list of scientists from the UF who made 54 different trips to Costa Rica, not including those of the Contract administrators. For each of these trips the Agronomist had to do one or more duties to make the stay more profitable, enjoyable or efficient. These duties included helping a counterpart person or agency get a copy of the request form, encouraging the counterpart to fill it out, fill it out for him, having his supervisor order him to fill out, having him send

it to me or to my superiors, or go get it, send him briefing material to Florida, remind the agency when the scientist was coming, get hotel reservations, get special low rates at the hotel, taking the short termer to San Jose from the airport, taking him back to the airport, arranging for desk space and transportation for both the scientist and his counterpart, getting typing assistance, doing commissary shopping or furnishing a ride there, or getting him a card so that he could shop there himself, translating or interpreting from English to Spanish or vice versa, taking him on a protocol or introduction visit to USAID officials and those of the counterpart agencies up to Minister level and when he was ready to leave a similar farewell or de-briefing tour to these same persons, briefing him on the geography, ecology, mores and customs, history, agriculture and its problems, etc. of Costa Rica so that he would be better prepared to do an efficient job in a limited time. Not all of these duties were done for every person, and Dr.s Smith and Ross performed similar tasks every day they were in the host country. Neither is the above list all-inclusive, as anyone similar with such duties well knows.

He estimates that the equivalent of 3 months during his assignment were spent on tasks similar to those outlined above. This, of course, includes much Saturday and Sunday work, as our short termers were encouraged to travel on weekends when it would not interfere with normal work days.

The most fruitful trips were made by those persons who among other things: had a knowledge of Spanish, spent a least 2 and preferably 3 weeks, had a record of good field work in Florida and did not mind sleeping at the Experiment Stations or at other field locations, and who were tolerant and understanding. This is not to say that those who did not have all the above attributes were not effective. Another mark of fruitfulness was multiple trips.

Each of these trips resulted in a report with recommendations for the GOCR, and these reports represent most of the reporting within USAID/Costa Rica in agriculture except for end-of-tour reports of full hire technicians. These reports are sought after, and have to be repeatedly mimeographed to keep up with the demand.

COOPERATION WITH OUTSIDE ORGANIZATIONS FOSTERING THE STUDY OF BASIC FOOD CROPS

Since a number of other organizations in Costa Rica are involved with studies or programs involving basic food crops, every effort was made to maintain close contact with them and to encourage their further participation. Two examples should suffice.

When the Advisor arrived in the host country, a program of rural develpment of the Nicoya Peninsula was being implemented. Although Thomas Gage had preached in the Church in the city of Nicoya as early as 1530, little progress had been made in the area since then. USAID/Costa Rica was implementing an area development plan that included resource inventories, rural electrification, feeder road construction, organizing local chapters of a development association and building of community centers, and the like. The contributions of the USAID and the IICA were interknit to form an integrated contribution. IICA was represented largely

by Dr. C. V. Plath and his graduate students. AID was likewise represented by Pedro Tirado and V. E. Green, Jr.. The steps in the sequence and the agency responsible were:

1. Formation of the Association	USAID
2. Mass Fertilizer Demostration of 3000 plots	USAID
3. Socio-economic Study of Corn Practices	IICA
4. Land-use Study of the Rio Cañas Watershed	IICA
5. National Corn Campaign	CAN/USAID-UF
6. Study of Impact on the Farmers	IICA/UF
7. Plans for the Area for 1968	USAID

Since the Central American Field Program of the Associated Colleges of the Midwest was looking for projects to give its honor students, the leaders of that program were encouraged to make studies of all phases of corn production and its costs. Many interesting studies grew from this program at very little cost to the government and added immeasurably to the knowledge regarding corn.

ROADBLOCK NUMBER ONE AND MEANS OF SURMOUNTING IT

In the estimation of the Agronomist the number one obstacle to agricultural progress in Costa Rica has been inability of the farmer to obtain means of production, especially agricultural chemicals, at prices that he could afford and at locations close enough to his finca so that he could use them on this own fields. This situation was most critical outside the coffee-producing area in Costa Rica. It is the opinion of many, including the Agronomist, that the most encouraging develpment in agricultural progress has been the establishment of AGROSERVICIOS by Fertilizantes de Centroamerica, S. A., not only in Costa Rica but all over Central America, wherein plant food, pesticides and seed are stocked in the outlying areas within cart range of most farms. Now, farmers are no longer at the mercy of the purveyors of sugarbeet fertilizers not needed in Europe. Also available to the farmers is a group of technicians that may out number the extension agents of the governments, relieving them of the burden of much extension work. Every effort should be made to cooperate with FERTICA. An example of assistance to it could be to furnish RTAC materials for distribution at the rural centers, which already outnumber the agencies of extension.

DISTRIBUTION OF RTAC MATERIALS TO TECHNICIANS AND FARMERS

Since the time available to the Agronomist for technical agronomic assistance was limited, materials prepared by the Regional Training Aids Center of USAID/Mexico were utilized very advantageously to impart instruction of a technical nature to employees of the MAG, UCR, and the CNP, and of a less technical nature for distribution through the Agricultural Extension Service. Appendix B to this report shows the nature of the books, booklets, and pamphlets that were ordered and distributed. The material varied from the very technical book entitled Experimental Designs to the popular Be Your Own Corn Doctor. These materials are extremely well received, especially since the budgets of the Ministeries thruout Latin America are small.

The Agronomist was instrumental in having RTAC translate and distribute two important documents of the Florida Agricultural Experiment Stations, which are just coming off the press. These included the classics on Nematodes and Citrus Disorders. This will be the first time that books on these subjects will be available in Spanish for popular distribution.

Thousands of these bulletins were made available to the Ministry Radio Program for supplying to listeners upon unsolicited request. Many subjects covered by these RTAC materials are not avilable in Spanish at any price. Not only were these bulletins sent through the mail, but portions or all of them were read over the air for those farmers who could not read them. It is thought that radio reaches more people in Costa Rica than any other form of communication.

JUNGLE CLEARING PROJECT FOR BASIC FOOD CROP PRODUCTION

The agronomic advisor worked closely with the resident manager of the Caterpillar Americas Company in a project sponsored jointly by that group and USAID. The project occurred at the ITCO colony called Cariari in the Rio Tortuguero Watershed west of Guapiles wherein heavy mechanical equipment was used to rapidly clear virgin jungle as opposed to hand methods. The technical assistance rendered by the agronomist included the furnishing of packets for a mass fertilizer demostration with corn and writing circulars on the culture of both corn and rice. The technical aspects of this projects were satisfactory but again, lack of sufficient, timely credit plagued the success of the venture. Whether the farmers will remain colonists planting food crops, coconuts and oil palm will depend upon whether credit is made available to them. If it is not, they will probably revert to banana workers. Two Costa Rican laws have much to do with such a situation. First, good banana land by law must be used only for banana, and second, banana workers earn about half again as much as coffee workers. The origins of these laws would probably reveal some interesting comparisons.

Caterpillar has filmed the principal steps in this project and in addition has available a set of slides showing the relative costs, efficiencies, operating problems and other aspects of the land clearing project with comparisons of land cleared by mechanical means and that cleared by traditional means.

COOPERATION WITH THE CENTER FOR TROPICAL AGRICULTURAL OF THE IFAS

Many studies are being carried out in Costa Rica by graduate students and regular staff members that have a direct bearing on the agricultural and rural development of the host country. Every effort was made to provide at least some logistical support to all CTA visitors because each of them helped with some phase of the program, and at very little cost to the government. Projects on which they worked included spittle bug damage to pastures, nitrogen and phosphorus fertilization of pasture grasses, soil chemistry of the Atlantic Zones, tropical nematode collections, cattle production on the Atlantic side, agricutural possibilities of the

San Carlos canton, research into the causes of swine deaths, alternative crops for coffee-producing areas, etc.

The contribution of the CTA in making a corn movie has been discussed.

NATIONAL CORN CAMPAIGN

Besides the technical assistance rendered as outlined above, the Advisor helped plan and execute a National Corn Campaign within the spirit of the goal of the Alliance for Progress that all peoples in this hemisphere have enough to eat every day. The complete story behind the planning and execution of this effort, as well as recommendations to USAID/Costa Rica for future campaigns to increase supplies of basic food crops is appended to this report. It has been stated by many persons that that campaign could well serve as a model for the developing nations to follow in planning similar campaigns to increase basic food crop production to feed their peoples and to reduce balances of payments deficits.

June 15, 1968
VEG:aemg

APPENDIX A

[redacted] as the elder child of [redacted]. He attended public schools there, graduating in 1939. He attended Louisiana State University where he received the B.S. in 1947 after 4 years army service, and the M.S. in 1948. After serving one year at L.S.U. in charge of sugarcane fertilizer research, he attended Purdue University for two years, receiving the PhD in June 1951. He has served as Assistant and Associate Professor, as well as Professor with specialty in Agronomy at the University of Florida Institute of Food and Agricultural Sciences Everglades Experiment Station between 1951 and 1965. In May 1965, he was chosen as Agricultural Advisor to the Government of Costa Rica. He has served as Vice-president and President of the Soil and Crop Science Society of Florida. He is a member of The American Society of Agronomy, Soil Science Society of America, the International Soil Science Society, Alpha Zeta, Gamma Sigma Delta, and the Soil and Crop Science Society of Florida. He is listed in Who's Who in the South and Southwest, American Leaders in Science, and American Men of Science. He holds a commission as Lieutenant Colonel in the United States Army Reserve. He is the author of about 75 publications in national and international journals. He plans to return to Florida at the end of June 1968.

APPENDIX B

RTAC LITERATURE DISTRIBUTED TO GOCR AGENCIES IN AGRICULTURE, 1965-1968.

NUMBER	CODE	TITLE
30	163-243	Mejoramiento Genetico de las Cosechas
100	64-28-A	El Cultivo del Quimbombo
50	64-28-F	Cultivo Comericial de la Sandia
200	66-89	El Cultivo y Utilizacion del Sorgo
40	66-44	Instruccion sobre Mecanica Agricola
50	60-149-C	Metodos de Enseñanza en Extension
100	65-86	Manual Practico de Agricultura
100	66-60	Coliflor y Brocoli
50	66-69	Control de la Langosta
50	66-71	Exterminio de Orugas
100	66-72	La Seleccion y Mantenimiento Apicultura
500	66-15	Cultivo del Maiz en la Costa
100	66-76	Cultivo del Mango
100	66-79	Plagas y Pesticidas en la Campaña Agric.
100	66-80	Cultivo de la Papa
100	66-138	Como Cosechar por Maquina Combinada
100	66-99	Comedero "Veleta" de Minerales
100	66-116	Parasol Portatil para Cerdos
10	65-09	Chapingo-Centro Nacional
20	164-137	Practicas Aprobadas para la Produc. Porcina
30	163-248	Principios de Genetica
40	162-260	Los Hongos y el Hombre
30	163-237	Diseños Experimentales
50	62-03	Diagnosis and Improvement of Saline Soils
50	66-54	Minerales para el Ganado en Florida
200	63-48D	Cunicultura. La Cria del Conejo
100	64-254	La Fiebre Aftosa
20	66-88	Aplicacion Aerea de Sustancias Quimicas
50	66-154	Cultivo de la Chirimoya
50	65-84	Calculos Financieros
50	63-63A	Necesidades Nutricionales de las Aves
50	66-49	Armazones Exhibidores
25	168-111	Working With Silver
200	68-38	Safflower
500	68-69	Growing Safflower
500	68-98	What is Fertilizer
250	68-44	Contagious Pleuropheumonia
1000	68-99	Be your own corn doctor
10	168-64	The Meat we eat
500	68-122	Vegetable Gardening in the Caribbean Area
100	68-3	Cassava Production and Processing in Ceylon
100	68-2	A survey of Cassava Production and Processing
200	68-69	Tips on Selecting Fruits and Vegetables

RTAC LITERATURE DISTRIBUTED TO GOCR AGENCIES IN AGRICULTURE, 1965-1968.

NUMBER	CODE	TITLE
20	168-128	Rapid Development in Small Economies
40	68-40	Packaging Produce at the Central Warehouse
60	68-88	Beekeeping in the United States
100	168-109a	Getting Agriculture Moving
10	168-109b	Training Manual for Group Study of Above Circular
200	68-148	IADS Newsletter
500	68-146	Protecting Corn from Blackbirds
75	168-137	Flora Toxica de Panama
25	168-114	Tecnologia de la Leche
300	67-70	Dry Bean Production in the Lake and NE States
200	67-71	Irrigating Corn
100	67-114	The Effects of Soils and Fertilizers on the Nutritional Quality of Plants
100	67-115	Equipment for Applying Soil Pesticides
100	67-116	Chemical Control of Plant Parasitic Nematodes
5	67-126	Roadway Manual - Road Life Studies
200	67-161	Growing Eggplant
100	67-163	Raising Livestock on Small Farms

VEG:sr
5/17/68

APPENDIX C

UNIVERSITY OF FLORIDA STAFF MEMBERS

ASSIGNED TO COSTA RICA UNDER CONTRACT AID/la-261

(Chronological Listing)

No.	DATES OF ASSIGNMENT*	NAME AND TITLE	AREA OF WORK
1.	May 21, 1965	Dr. Hugh Popenoe Campus Coordinator	Contract Administration
2.	May 28, 1965 June 30, 1968	Dr. Victor E. Green, Jr. Agronomist	Basic Food Crops
3.	July 7, 1965 July 10, 1967	Dr. Cecil N. Smith Agricultural Economist	Agricultural Economics
4.	November 21, 1965 (1)** December 14, 1965	Dr. J.R. Orsenigo Assoc. Horticulturist	Pesticide Regulation and Week Science
5.	January 13, 1966 February 16, 1966	Dr. W.G. Blue Soils Biochemist	Survey Report on Costa Rican Fertilizers
6.	January 13, 1966 February 14, 1966	Dr. R.L. Shirley Animal Nutritionist	Animal Nutrition Practices & Problems
7.	January 13, 1966 February 16, 1966	Dr. W.L. Pritchett Soils Chemist	Costa Rican Fertilizer Survey
8.	March 16, 1966 (2) March 29, 1966	Dr. J.R. Orsenigo Assoc. Horticulturist	Pesticide Regulation and Weed Science
9.	March 13, 1966 April 13, 1966	Dr. Ivan Stewart Biochemist	Trace Element Problems in Growing Crops
10.	April 1, 1966 April 25, 1966	Dr. A.P. Lorz Horticulturist	Improving Production of Beans and Peas
11.	April 13, 1966 April 21, 1966	Dr. K.R. Tefertiller Chairman Dept. of Agric. Economics	Farm Management in Nicoya Peninsula
12.	April 26, 1966 May 11, 1966	Dr. R.C.J. Koo Assoc. Horticulturist	Research for Initiating Soil Moisture Studies
13.	May 3, 1966 May 20, 1966	Dr. V.W. Carlisle Asst. Prof. of Soils	Possibility of Soil Mineralogy Study

N°	DATES OF ASSIGNMENT		NAME AND TITLE	AREA OF WORK
14.	May 10, 1966 May 19, 1966	(1)	Dr. George T. Edds Chairman, Dept of Veterinary Science	Animal Disease Survey
15.	May 31, 1966 June 30, 1966	(3)	Dr. J.R. Orsenigo Assoc. Horticulturist	Pesticide Regulation and Weed Science
16.	June 26, 1966 July 22, 1966		Dr. Max Langham Assoc. Prof. of Agricultural Economics	Organization of Livestock Farms in the Atlantic Zone
17.	July 2, 1966 July 21, 1966		Dr. A.H. Krezdorn, Chair. Department of Fruit Crops	Growing Fruit in the Atlantic Zone
18.	July 4, 1966 July 22, 1966		Dr. W.K. Robertson Soils Chemist	Growing Fruit in the Atlantic Zone
19.	July 5, 1966 July 30, 1966	(1)	Dr. J.A. Winchester Assistant Nematologist	Nematode Research
20.	July 12, 1966 October 15, 1966	(1)	Mr. L.A. Reuss Agricultural Economist	Growing of Fruit in the Atlantic Zone
21.	July 29, 1966 September 2, 1966	(1)	Dr. A.E. Kretschmer Agronomist	Evaluation Tests of Legumes and Grasses
22.	August 8, 1966 August 10, 1966		Dr. W.G. Eden Chairman, Dept. of Entomology	Establishment of a Biological Control of Insects Laboratory
23.	August 15, 1966 September 7, 1966	(1)	Dr. Shaw E. Grigsby Ext. Train. Specialist	Continuing Education of Agri. Technicians
24.	September 11, 1966 September 23, 1966	(1)	Dr. John Gerber Assoc. Climatologist	Short-term Asst. Provided the National Meteorological Service
25.	October 13, 1966 November 4, 1966	(2)	Dr. Shaw E. Grigsby Ext. Train. Specialist	Continuing Education of Agric. Technicians
26.	October 16, 1966 January 31, 1967	(2)	Mr. L.A. Reuss Agricultural Economist	Demonstration Farms in Nicoya Peninsula
27.	October 20, 1966 October 31, 1966		Mr. George C. Young Consultant in Livestock Marketing	Planning for a Live-Stock Marketing Facility in Nicoya Peninsula
28.	October 25, 1966		Dr. James E. Ross Agricultural Economist	Agricultural Policy and Planning

No.	DATES OF ASSIGNMENT		NAME AND TITLE	AREA OF WORK
29.	October 28, 1966 November 21, 1966	(2)	Dr. A.P. Lorz Horticulturist	Improving Production of Beans and Peas
30.	October 30, 1966 November 18, 1966	(2)	Dr. George T. Edds Chairman Dept. of Veterinary Science	Animal Disease Survey
31.	November 1, 1966 November 27, 1966		Mr. Walter A. Krienke Assoc. Dairy Technologist	Processed Cheese Manufacture at Arenal
32.	November 6, 1966 November 16, 1966		Dr. Richard E. Bradley Assistant Parasitologist	Survey of Animal Parasites
33.	November 14, 1966 November 18, 1966		Mr. W. Travis Loften Chairman, Dept. of Agric. Education	Vocational Agriculture Education Programs.
34.	December 4, 1966 December 18, 1966		Dr. J.N. Busby, Acting Director, Agric. Ext. Service	Planning for Regional Extension Centers
35.	January 6, 1967 January 26, 1967	(2)	Dr. J.A. Winchester Assistant Nematologist	Nematode Research
36.	February 7, 1967 February 28, 1967	(2)	Dr. A.E. Kretschmer Agronomist	Evaluation Test of Legumes and Grasses
37.	March 5, 1967 March 11, 1967	(1)	Dr. W.W. McPherson Graduate Research Prof.	Agricultural Policy and Planning
38.	March 5, 1967 March 22, 1967		Dr. W.H. Gurley Estension Agronomist	Evaluation of Progress in Corn Campaign
39.	June 19, 1967 July 16, 1967	(4)	Dr. J.R. Orsenigo Horticulturist	Pesticide Regulation & Weed Science
40.	July 3, 1967 August 10, 1967	(2)	Dr. W.W. McPherson Graduate Research Prof.	Coffee Diversification
41.	July 3, 1967 November 3, 1967		Mr. John Bieber Research Assistant	Coffee Diversifica-
42.	July 3, 1967 August 4, 1967		Dr. S.K. Seaver Visiting Professor	Agricultural Education (University Level)

No.	DATE OF ASSIGNMENT	NAME AND TITLE	AREA OF WORK
43.	July 23, 1967 July 28, 1967	Mr. George R. Freeman Assistant Director Experiment Stations	Agricultural Education (Physical Facilities)
44.	July 24, 1967 August 21, 1967	Dr. James E. Christiansen Assistant Professor Agric. & Extension Educ.	Agricultural Education (Vocational Agriculture)
45.	August 18, 1967 (3) September 6, 1967	Dr. Albert E. Kretschmer Agronomist	Evaluation Tests of Legumes and Grasses
46.	August 19, 1967 September 1, 1967	Dr. James F. Hentges, Jr. Professor, Animal Science	Agricultural Education (Animal Science)
47.	September 6, 1967 September 20, 1967	Dr. Charles J. Wilcox Associate Geneticist	Dairy Production
48.	September 4, 1967 September 22, 1967	Dr. Daniel E. Alleger Agricultural Economist	Agricultural Education (Manpower Needs)
49.	October 24, 1967 November 19, 1967	TAMAC, Inc. Team Dr. John M. Bellows Ing. Eric Wright Ing. Federico Poey	Coffee Diversification Possibilities
50.	October 29, 1967 December 29, 1967	Dr. Ralph A. Eastwood Extension Economist	Dairy Economics
51.	February 1, 1968 (1) March 14, 1968	Mr. Albert S. Mfller Emeritus Professor	Agricultural Education, Zamorano Type
52.	February 5, 1968 (2) February 16, 1968	Dr. John F. Gerber Assoc. Climatologist	Meteorological Service
53.	May 5, 1968 (2) Two Months	Mr. Albert S. Muller Emeritus Professor	Agricultural Education, Zamarano Type
54.	May 27, 1968 (4) Six Weeks	Dr. A.E. Kretschmer, Jr. Agronomist	Agrostology

* Except for Dr. Popenoe, Campus Coordinator, dates refer to arrival and departure from Costa Rica.

** Numbers in parenthesis refer to staff members who have had more than one assignment in Costa Rica under the contract.

May 1968 from No. 49 V. E. G. Jr.
Annotated from J. Ross 1/2/68