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FROM - Rio de Janeiro

SUBJECT - End-of-Tour Report - Ervin T. Bullard
Agricultural Advisor (Production)

REFERENCE - *Ag Research + Extension 5/12-11-110-096*

1. Attached is the End-of-Tour report prepared by Ervin T. Bullard, Agricultural Advisor (Production) on completion of his first tour of duty in Brazil - March 23, 1964 to May 15, 1966.
2. Dr. Bullard has been effective in working with national and state organizations in strengthening their research and extension efforts. Dr. Bullard's untiring ~~efforts~~ efforts and efficient and effective performance has made a material contribution in the efforts to assist Brazil increase agricultural production. Definite progress is already evident in improving federal-state relations and cooperation in agricultural research and extension programs and Dr. Bullard has played an important role in fostering this.
3. Dr. Bullard also served as Acting Deputy Director of the Office of Agriculture and Rural Development on a number of occasions and he ~~has~~ performed in a very satisfactory manner.
4. USAID/Brazil is pleased to have Dr. Bullard return to this post for another tour.

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END OF TOUR REPORTERVIN T. BULLARDAGRICULTURAL ADVISOR (PRODUCTION)

Period covered: March 23, 1964 to May 15, 1966

A. OBJECTIVES

The responsibilities of this position are to:

1. Act as Chief of the Division of Agricultural Production which includes personnel associated with crop, livestock and soils extension and research activities.
2. Assist in evaluating and planning an efficient agricultural production research program for the federal government and the state departments of agriculture.
3. Coordinate the research work being conducted at the different agricultural universities in Brazil.
4. Prepare documentation which includes Country Assistance Program, Project Agreement, Project Implementation plan as well as PIO/P's, PIO/F's and PIO/C's.
5. See that projects are carried out in accordance with the agreements.
6. Act as contract representative for the IRI Research Institute, Inc. Contract and the North Carolina State University Contract.
 - a. Review bio-data of contract personnel and make recommendations for necessary clearances based on their qualifications.
 - b. Review contract budgets and program implementation in order to advise on economical funding and progress of the contract in line with established USAID goals.
 - c. Review contract reports, comment on their value and make recommendations for improvement.
 - d. Provide liaison between the contracts and the USAID Mission.
 - e. Provide the necessary documentation for the efficient operation of the contracts.

PROBLEMS AND DIFFICULTIES

1. One of the major problems limiting agriculture production per

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unit of land area is the high cost of fertilizer in relation to the price the farmer receives for his produce. For this reason it is not economical to use fertilizer on many crops at the present time in Brazil. However, steps are being taken to reduce the cost of fertilizer to the farmer by importing higher analysis fertilizers and by developing fertilizer manufacture, particularly of Nitrogen in Brazil.

2. Salaries of Ministry employees are low in comparison to opportunities in industry and other professions outside of agriculture. Measures are now being taken to correct this problem. Legislation has been enacted to place Ministry of Agriculture employees on a full time basis and raise their salary.
3. There is a lack of incentive to increase the efficiency of government employees such as salary increases for outstanding performance, and there are only three grades an employee can advance from entrance to the highest grade with a differential of only the equivalent of US\$50 between grades, per month.
4. Many of the food crops have had prices controls which are much too low for the farmer to make a reasonable profit. This provides no incentive for the farmer to increase production and is one reason why the farmer cannot fertilize crops profitably. Steps are being taken to correct this problem. Controls have recently been taken off almost all foods, the only exception being milk, for which the price was raised.
5. Legislation at the present time restricts considerably the Ministry of Agriculture from distributing funds directly to state operated experiment stations and non-affiliated agricultural universities for research and extension work. If this law could be changed it would probably increase the efficiency of the whole program and provide badly needed coordination, and a real cooperative spirit.

C. SUMMARY OF ACTIVITIES

1. Agricultural production activities have concentrated on:
 - a. Developing a coordinated system of applied research aimed at providing answers to some of the most pressing problems particularly in soil fertility, introduction and testing of improved food, feed and forage crops, increasing forage supplies and improving animal nutrition.

The coordination of planning and operations of agricultural agencies aimed at assisting the Ministry of Agriculture, State Secretaries of Agriculture, National Extension Service (ANCAE) and its state affiliates, and agricultural universities to develop coordinated extension, research and training programs to implement more effective state development programs in the areas of forage, feed, livestock and food crop production.

2. In carrying out these activities the following tasks and liaison were performed:

- a. Soil Fertility Technical Committee. Acted as head of the soil fertility technical committee during the early stages of operation. A system of cataloguing all fertility experiments on IBM cards has been started. The file will be located in Rio de Janeiro and will be available to all research personnel. Bulletins on fertilizer recommendations will be developed from this information. The information for the state of Rio Grande do Sul has been nearly completed.
- b. Fruit and Vegetable Committee. Acted as chairman of the fruit and vegetable committee during its formative stage. Recommendations have been made to improve vegetable seed production, marketing of food crops and research activities on fertilizer use as well as disease and insect control.
- c. IRI Research Institute Inc. Contract Representative. The contract was in operation when the technician arrived in March of 1964. At that time there were four U.S. technicians in Brazil under the contract. Since that time the contract has had five amendments so that the contract is now operating in all parts of Brazil in the sectors of research and extension. There are now 31 U.S. technicians out of a total of 35 requested under the contract. The personnel are doing a good job in cooperating on 126 experiments with the local technicians in the fields of research and extension. Their main fields of activity include work on soils, livestock and food crops.
- d. North Carolina State University Contract Representative. This is a regional contract with personnel located in Latin America and Africa. The objectives of the contract is to establish soil and tissue analysis laboratories, encourage fertility trials and develop fertilizer recommendations for crops within the countries in which they work. At the present time there is one contract technician located in Recife. A soils laboratory has been established in Rio de Janeiro and one is being established in Recife. A bulletin has been distributed on the fertilizer recommendations for the important crops in Brazil based on soil analysis.
- e. Coordination of Agricultural Agencies: Planning and Operations. An agency has been established called the Convênio Ministério da Agricultura USAID/Brazil. An agency of this type has been needed for many years since its main function is to coordinate and finance cooperative projects of the Ministry of Agriculture, Secretaries of Agriculture and Agricultural Universities. At the present time priority has been established in the agriculture production and economic sectors. The work in agricultural production pertains mainly to extension training and demonstrational type work on soil fertility, livestock and food production. Most of the problems connected with establishing a new agency have been worked out and good technical backstopping will be the key to the success of this agency. It is hoped that the Ministry of Agriculture will completely take over the financing and operation of this agency by 1970 since it is very important to an efficient program of agricultural development in Brazil.

D. COOPERATION WITH BRAZILIAN AGENCIES

Ministry of Agriculture. There have been three Ministers of Agriculture during

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my two years in Brazil. The Minister who took office after the revolution remained in office only two months, the next stayed a year and a half which shows a trend towards more stability in tenure of those responsible for the agricultural program in Brazil. The present Minister of Agriculture is doing an excellent job. The personnel under the IRI contract have received very good cooperation from the present Director General of the Division of Research and Experimentation. Cooperation and coordination have been much improved among federal, state and agricultural universities. These agencies have given good support to development of projects in which ARDO is involved.

ABCAR National Extension. This Agency has cooperated very well with ARDO and the program has been operating for 10 years and has expanded to 16 states. U.S. financial support is being phased out as this organization reaches self sufficiency with the GOB providing increasing funds each year. The efforts of ARDO will be mainly concentrated on developing subject-matter specialists and providing liaison operations between research and extension activities to be sure the farmers actually benefit from the research results. State development and other agricultural production programs will be tied in with and will utilize the personnel of the state extension affiliates of ABCAR in carrying out field programs.

State Agencies. Recent political changes in state governments have improved the working arrangements of ARDO in several of the southern states. Cooperative projects are working well in Minas Gerais, Rio Grande do Sul and Paraná at the present time.

E. EVALUATION OF RESULTS

1. It is always difficult to evaluate results on a short term basis where the main objective is training and institutional development.
2. An excellent job has been done during the past ten years in developing an extension system for Brazil. As a result of programs to improve the efficiency of the Federal extension system, ABCAR has grown from 220 local offices in 12 states in 1961 to 476 offices in 16 states in 1965 with over 1000 agents working in the field. USAID's program of assistance is a year ahead of schedule. In 1962 USAID was providing between 50% and 60% of the budget. The plan called for USAID phase out in 5 years. The Brazilian Government has taken over the obligation of completely financing this program in 1966 instead of 1967 as originally planned.
3. The IRI contract is now functioning effectively. In the early stages of the contract there was a tendency to concentrate on research results and overlook the major goals of training and institutional development. This type of operation is understandable since IRI had worked for 11 years in Brazil under this system. The Director and Deputy Director of ARDO and the writer have spent a considerable amount of time and effort to reorient the operations of

the IRI activities. At the present time the 31 IRI technicians are working directly with 245 Brazilian counterparts at seven different locations. The cooperative results have been very good during the past year.

Substantial progress has been made in soil fertility studies; these reveal the tremendous potential from increased fertilizer use in Brazil. For example, results in Campo ~~Gran~~ Cerrado soils show that corn yields can be increased from 4 bushels per acre without fertilizer to over 80 bushels with moderate applications of complete fertilizer. An accentuated soil fertility program is underway to obtain adequate information so specific local fertilizer recommendations can be developed for farmer use.

A major problem in beef production is providing adequate forage during the dry summer period in Central Brazil and during the winter months in southern Brazil. By improving winter pastures in Rio Grande do Sul cattle can be marketed at the same weight at 24 months off of improved winter pastures compared to 52 months on native pastures. In Central Brazil a strain of Pangola-grass (A-24) introduced by USAID has produced gains of 22 kg. per hectare during the dry summer period whereas cattle on the commonly used molasses grass lost 13 kg. Annual liveweight gains were 424 kg. for this Pangola-grass compared to 221 for molasses grass on unfertilized pastures.

A national soybean seed introduction and testing program sponsored by USAID has shown the way to increase yields by 3 fold. Other results have been forthcoming of equal significance in other production aspects.

4. There is only one individual working under the North Carolina State University Contract but he has made a good contribution in the short time he has been working for the project. His knowledge of the local language and Brazilian soils has made it possible for him to establish two soil testing laboratories, review the fertility trials in Brazil and assist in developing fertilizer recommendations for the major crops.
5. The program of coordinating the planning and operations of agricultural agencies has resulted in the initiation and operation of Federal-state development programs involving intensive demonstration, extension and training efforts in soil fertility, forage, feed and food crop production in eight states.

F. RECOMMENDATIONS FOR THE FUTURE

The following recommendations are those of the writer only and not of the Mission or the ARLO office:

1. One of the most important steps would be to eliminate immediately all taxes and tariffs on all fertilizer imports and mineral supplements and to enact legislation to encourage local investment and foreign industries to establish fertilizer plants in Brazil.

2. Now that legislation has been enacted to place government employees on a full time work schedule, implementation of this legislation should be started immediately.
3. A working system of efficiency rating needs to be established for government employees. A salary scale should be established to give higher salaries to efficient, qualified personnel with M.S. and Ph. D. degrees as well as to employees on the basis of performance.
4. Price controls on most crops should be kept off to give the farmer a fair profit for his efforts, and thereby provide the needed incentives for increased agricultural production.
5. The Department of Agricultural Promotion (DPA) should be discontinued or reorganized. The field stations, which are called "Postos", and are under the direction of this agency should be turned over to the agricultural universities in the States where there are Agricultural Universities, to be used for research work, as well as the production of foundation seed stock and plant material. The "Postos" in states where there are no agricultural universities should be turned over to the AECAR extension service, or those that are not needed should be sold to farmers. The operating funds that DPA now has should be allocated to AECAR so they can utilize these funds to provide logistical support to the AECAR technicians in the field and to finance subject-matter specialists attached to the agricultural universities.
6. The research stations financed by the state secretaries of agriculture should be turned over to the agricultural universities in the states, as well as the funds for operation. The agriculture universities should use these stations for research as well as foundation seed stock and plant material production. The State Secretary of Agriculture should provide funds yearly to the agriculture universities to maintain these research stations.
7. It would be highly desirable for USAID to continue to encourage policy changes to promote a system of research and extension similar to the one in the United States.
8. Legislation should be enacted to allow the Ministry of Agriculture to finance approved research and extension projects carried out by agricultural universities and USAID should continue to encourage Ministry research employees to work directly with University personnel on research projects.
9. Although this does not pertain to the project or the technician, it would seem desirable to enlighten citizens of the international community of the goals and activities, as well as the actual progress of the Alliance for Progress. For instance, it has been pointed out there are many students in the higher grades of Escola Americana who do not know anything about the Alliance for Progress or what is being achieved.

It seems these young people, Americans or of whatever nationality, should be given information in the importance of what we are striving to do, as eventually many of them may be carrying on this work, here or elsewhere. Movies and talks could be presented in the schools or at the American Embassy to make people more aware of the Alliance for Progress.