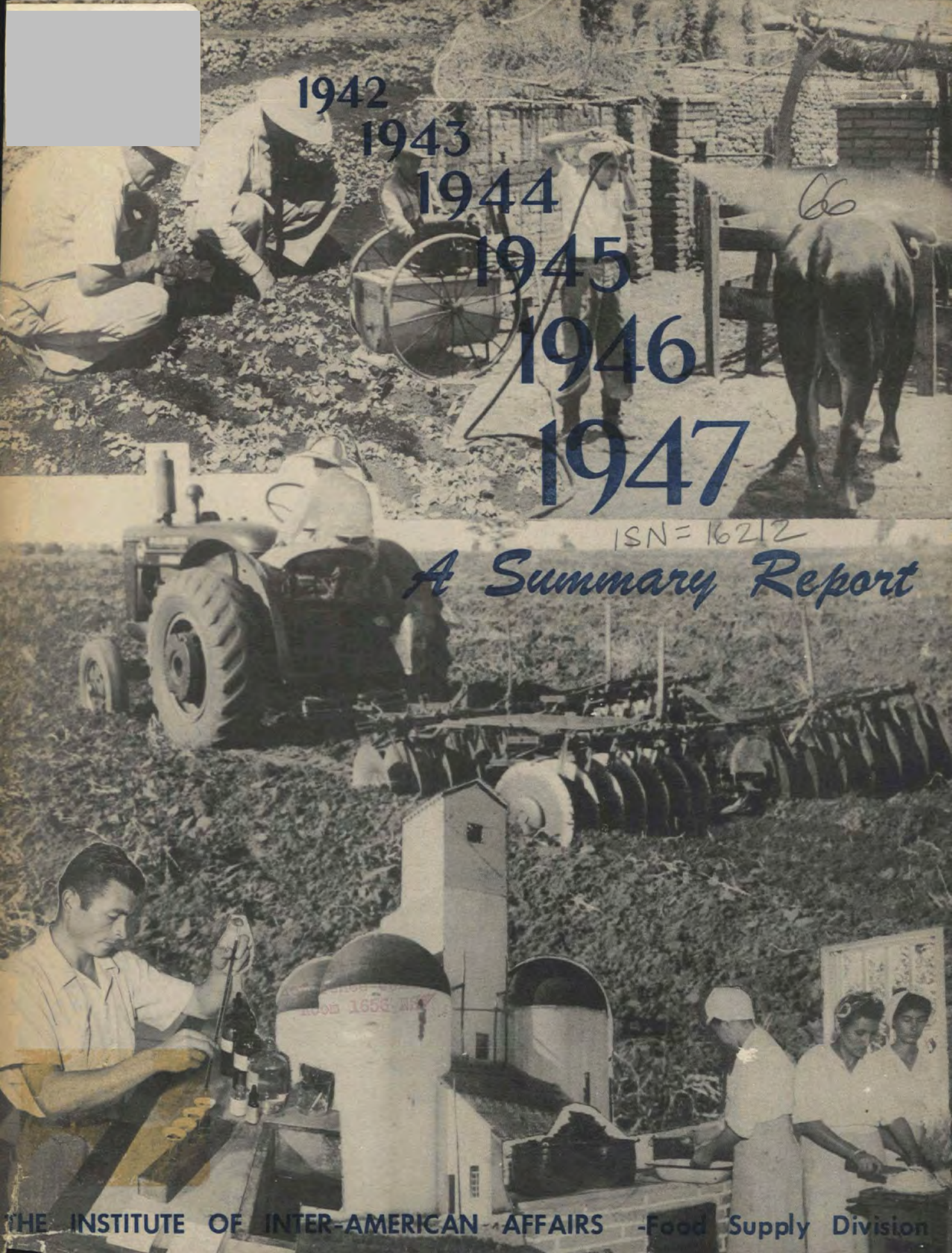

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A Summary Report

THE INSTITUTE OF INTER-AMERICAN AFFAIRS - Food Supply Division

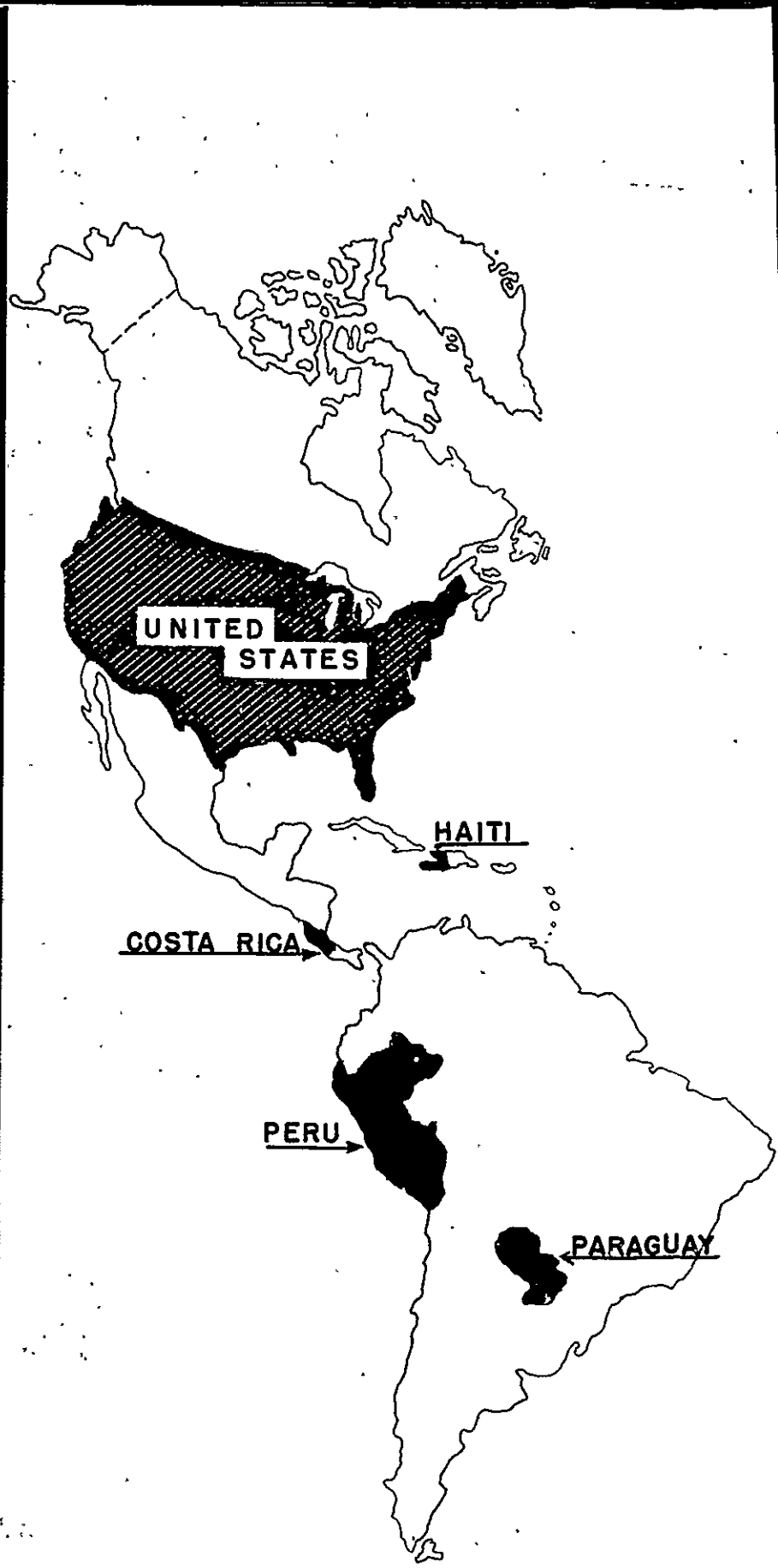
THE FOOD SUPPLY DIVISION
- A Summary Report -

Contents

The activities of the Food Supply Division of The Institute of Inter-American Affairs are reviewed in this report, which takes the place of the November and December issues of the regular Monthly Report.

The Institute of Inter-American Affairs was created under the laws of the State of Delaware on March 31, 1942, pursuant to authority contained in the Third Supplemental National Defense Appropriation Act, 1942 (55 Stat. 818). On August 5, 1947 it was reincorporated in accordance with Public Law 369, succeeding itself and absorbing the Inter-American Educational Foundation, Inc. A non-profit Government corporation, it is empowered to execute cooperative agreements with the other American Republics to carry out food, education, health and sanitation programs.

Washington 25, D. C.
December 1947



The Food Supply Division

OBJECTIVES

To further the growth of democracy by raising the levels of living in other American Republics--this is the basic aim of the Food Supply Division and the other Divisions of The Institute of Inter-American Affairs. Among many of the 133,000,000 citizens of Latin America low levels of living prevail, breaking down their defense against disease, weakening their power to produce, and exposing them to the propaganda of anti-democratic forces. Disease-ridden, undernourished, illiterate people are hard pressed to maintain themselves and consequently contribute little to the economic well-being of their country, the political stability of its government, or the growth of international understanding. By working to raise their living level the Institute, of which the Food Supply Division is an operating arm, serves as an implement of U. S. foreign policy designed to secure the peace and prosperity of this hemisphere.

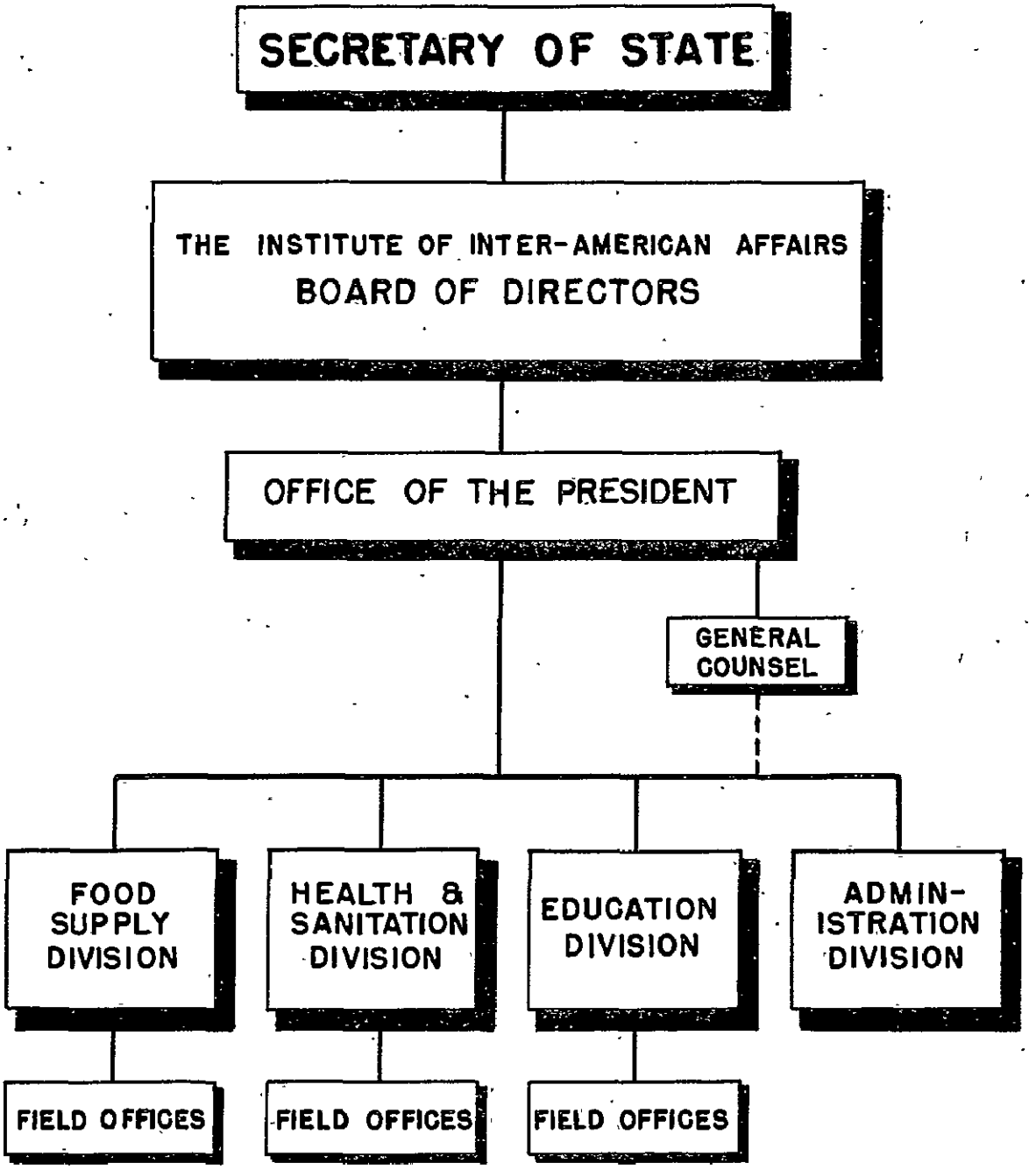
To further the development of agriculture in the other American Republics--this is the immediate objective of the Food Supply Division. Agriculture is the basis of livelihood for more than two-thirds of the citizens of Latin America, the only source of daily food for most of them, and the key to their purchasing power in world markets. Yet patterns of growing, storing, shipping and selling foodstuffs are primitive and food shortages are perennial. By introducing modern agricultural techniques and providing training in advanced practices of agronomy and home economics, the Food Supply Division is increasing production of crops for local consumption and demonstrating U. S. standards which lead to a higher level of living and greater purchasing power for the people. It is also gradually stimulating a demand for U. S. methods and products, extending U. S. influence to persons hitherto not reached, and building good will--one of the most important of a nation's resources.

ORGANIZATION

The Food Supply Division was first organized in June 1942 as a weapon for meeting emergency food problems during the war. Working through technicians stationed in Brazil, Costa Rica, El Salvador, Haiti, Honduras, Nicaragua, Panama, Paraguay, Peru and Venezuela, it succeeded in increasing the production of food crops for workers engaged in procuring strategic war materials and for U. S. armed forces at military and naval bases throughout the hemisphere.

Complementary to these efforts of the Food Supply Division were those of the Health and Sanitation Division, which was originally formed to combat ailments hampering the production of strategic war materials. It has continued into peacetime with a staff of U. S. professional employees and local technicians in the other American Republics who work to raise liv-

ORGANIZATION CHART 1947
THE INSTITUTE OF INTER-AMERICAN AFFAIRS



ing levels through such projects as anti-malarial campaigns, hospitals, health centers, sewerage disposal, and water supply.

Both of these Divisions function as component parts of The Institute of Inter-American Affairs, which evolved from a resolution of the conference of American foreign ministers at Rio de Janeiro in January 1942 urging cooperative effort by the American republics to elevate nutrition and public health as a first line of hemispheric defense. Under the control of the Office of Inter-American Affairs and with the assistance of the Department of State, the Institute, a non-profit corporation created under the laws of the State of Delaware on March 31, 1942, negotiated agreements for cooperative health and sanitation programs in 18 of the other republics and for food supply programs in 10 of them during the war.

ORIGIN OF THE INSTITUTE

On May 20, 1946 President Truman authorized termination of the Office of Inter-American Affairs and transferred the control of its corporations to the Secretary of State. These corporations included The Institute of Inter-American Affairs and the Inter-American Educational Foundation, organized to attain higher living levels in the other American republics by initiating programs for better basic education.

A little over a year later--on August 5, 1947--the President of the United States approved legislation granting a Federal charter to The Institute of Inter-American Affairs for a period of three years. Under terms of the act (Public Law 369) all of the cooperative education programs of the former Inter-American Educational Foundation are continued by the Institute under the direction of its new Education Division.

A NEW CHARTER

The Institute thus consists of three operating divisions--Food Supply, Health and Sanitation, and Education--which are all serviced by an Administration Division. The latter controls the expenditure of funds and handles the processing of personnel through its Budget, Accounts, Audit, and Personnel Sections. It also maintains a Service Operations Section whose functions include arranging travel accommodations for employees of the corporations, procurement and shipment of materials for field parties and general office services. The organization of the Institute also includes a General Counsel's Office which directs the legal aspects of the corporation's work, drawing up the cooperative agreements with foreign governments under which the field parties of the Operating Divisions work.

Management of the Institute is vested in a Board of Directors of not less than five in number who are appointed by the Secretary of State from among officials and employees of the State Department or other U. S. Government departments or agencies. One of these directors is designated as Chairman of the Board by the Secretary of State, and all other officers are elected by the Board, who also elect an Executive Committee of five members from among their number.

Reincorporation of the Institute affected only its organizational structure;--its purposes remain the same: "To further the general welfare of, and to strengthen friendship and understanding among, the peoples of the American Republics through collaboration with other Governments....in planning, initiating, assisting, financing, administering, and executing technical programs and projects, especially in the fields of public health, sanitation, agriculture, and education."

METHOD OF OPERATION

A unique characteristic of The Institute of Inter-American Affairs--and hence of its Food Supply Division--is the "cooperative action technique" adopted as its method of operation in the other American Republics where field programs have been undertaken. This technique implies *cooperation* on both a governmental and individual basis in carrying out a specified

On December 11, 1947 Dillon S. Myer was elected President of The Institute of Inter-American Affairs by the Board of Directors to fill the position left vacant by the resignation of Col. Arthur R. Harris.

Mr. Myer, who assumed the duties of his position on December 31, has been a Government official for many years. Until recently Commissioner of the Public Housing Administration, he served as Director of the War Relocation Authority during the war years, and from 1935-41 held executive positions with the Soil Conservation Service of the U.S. Department of Agriculture. Much of his earlier professional work had been concerned with agricultural development: for twelve years he was connected with the Agricultural Extension Service at Ohio State University, for eight years a county agricultural agent and leader in Indiana and Ohio, and for two years after obtaining a B.S. degree from Ohio State University he taught at the University of Kentucky College of Agriculture.

program agreed upon by the U. S. and the host country where aid in food production, health and sanitation, or education is needed. It also implies that this program will be concerned with more than advice and research--it will entail *action* for the desired ends. Demonstration farms, food marketing systems, and agricultural extension services will be actually built, staffed and operated. All of the work will be practical.

This method of operation has been put into effect in the four countries in which the Food Supply Division is currently authorized to operate in the following manner: When evidence shows that United States agricultural cooperation with one of the other American republics would be to the interest of both countries, and that a technical mission would be welcomed by the other country, the Institute submits an agreement proposal to the Department of State for approval. If this proposal is satisfactory, formal notes are exchanged between the U. S. Ambassador and the Minister of Foreign Affairs of the other country. On the basis of these notes the Minister of Agriculture or some other representative of the host country and an Institute representative hold discussions, and, acting for their Governments, sign an agreement, which is approved by the U. S. Ambassador.

BASIC AGREEMENT

The agreement describes the manner in which a group of technical specialists of the Food Supply Division will cooperate for a stated length of time with certain agencies of the other Government. The fields in which the cooperative program will be developed, the types of technical aid, and the sources and extent of financing to be contributed by each Government are outlined. It is stated that the program will consist of separate projects, each of which must be agreed upon in writing by a designated official of the host Government and the chief of the Food Supply Party.

After the basic agreement for cooperation has been signed between the United States and the host Government, the U. S. technical specialists who will form the Division's field staff in the other American republic are chosen. The Institute tries to set up and maintain for each country a small but well-integrated mission capable of developing a balanced program of action.

FIELD PARTY

The typical field party for a small country consists of a chief of party chosen for administrative ability and broad agricultural experience, an administrative officer, and a minimum of three or four technicians, one of whom is generally an agricultural extension specialist, and one an agricultural engineer, while the others are specialists in such fields as

agronomy, animal husbandry, or soils. The Chief of Party is alone responsible for overall policy related to the program, and for liaison with the Washington Office, the local U. S. Embassy, and officials of the host government. When a program develops the need, the basic field party is expanded to include other specialists, such as agricultural economists, plant pathologists, home demonstration agents, and food storage specialists.

SERVICIOS

In South America the Food Supply field party staffs operate as members of Servicios. The Servicio is a special Inter-American cooperative service established with contributions from both governments and staffed by nationals of both countries. It is an integral part of the host government, but its director, who is appointed by that government, is a U. S. citizen and the chief of the field party of U. S. technicians. In Peru this organization is known as the Servicio Cooperativo Inter-Americano de Producción de Alimentos, or SCIPA, and functions as a separate entity in the Ministry of Agriculture. Here the Food Supply Chief of Party has been appointed by the Government of Peru as Director of the Servicio. The Food Supply technicians in Paraguay serve as members of STICA, the Servicio Técnico Inter-Americano de Cooperación Agrícola, organized as an agricultural service within the Paraguayan Ministry of Agriculture. The Chief of the U. S. field party is also Director of STICA.

All Servicio funds are spent under the terms of project agreements signed by the Chief of the United States technical mission and a designated officer of the local government, usually the Secretary of Agriculture. The trend is increasingly toward greater financial participation in programs by local governments, a step which must precede their assumption of administrative and technical operation of the programs.

PROJECT AGREEMENTS

As soon as the chief of party and his staff arrive in the host republic, operations begin with a rapid survey of the general agricultural condition of the country. After necessary studies of local needs have been made, an integrated program is developed embracing specific projects. (Thus, with varying degrees of success, each project adopted either at the initiation of the program or later is planned in relation to all--an advantage not accruing to individuals advising the government on specialized subjects.) This program is presented to the Minister and his staff for their study, suggestions and approval. Compromise is needed in this process and the final result shows clearly the mutuality of interest.

After agreement has been reached, an exact description of the work to be done under each project is drawn up in writing, explaining why the proj-

ect is needed, and how it is to be financed and supervised. (Later, when each project in the overall program is finished, a completion agreement is signed by both parties which usually calls for the continuation of the project by the appropriate ministry.) The technicians are then assigned to carry out these projects in such a way as to provide the greatest opportunity possible for local workers to learn as the program progresses.

NATURE OF PROJECTS

The work chosen for projects depends on local circumstances and differs somewhat from country to country. In general, however, the projects provide a vehicle for giving technical assistance and for teaching by doing in fields such as the following:

1. Demonstration of improved methods of irrigation, drainage, erosion control, and cultivation.
2. Assistance to local producers in obtaining and using seeds, fertilizer, insecticides, and modern farm equipment and machinery from the United States.
3. Assistance in construction or purchase from the U. S. of food storage facilities, and in improvement of distribution and marketing systems.
4. Demonstration of modern methods of livestock care and pasture management.
5. Initiation or expansion of agricultural education and extension work among farmers and their families.
6. Training of nationals to carry on future activities.

As these projects get underway, the program may not develop on a country-wide basis. Instead it may be limited to one or more areas where agricultural problems are acute. But in each country the program is designed to develop agriculture so that the production, storage and distribution of foods needed to improve the nutrition of the people will be encouraged, expanded or improved, and U. S. techniques and standards will be adopted.

PROGRAMS IN OPERATION

During 1947 Food Supply Division programs have been carried on in Costa Rica, Haiti, Paraguay and Peru, and it is anticipated that each of these will be continued throughout the coming year since U. S. authority for their continuation has been granted under the new Charter until August 5, 1950. Arrangements for fiscal contributions and re-evaluation of projects must be made periodically with cooperating governments.

Present arrangements expire on December 31, 1947 in Costa Rica, and on June 30, 1948 in the other three countries.

OPERATING PROBLEMS

Throughout the life of the Institute one of the major problems of operation has been the uncertainty resulting from the emergency basis on which it has functioned. It has been necessary to outline programs on a year-to-year basis, thus preventing sound long-range planning of an efficient and comprehensive nature. Cooperating governments, whose fiscal years usually do not concide with those provided for in the Agreements, have not known whether to include provisions for the programs in their annual budgets. It has been impossible to offer personnel any tenure of work, opportunities for permanent advancement or the psychological asset of knowing that plans made for each succeeding year had any chance for fulfillment; personnel turnover has been high. Technical progress has often been impeded by the fact that supplies could not be ordered, no matter how urgent their need, because of uncertainty as to the time available for acquisition and the short term remaining for operation.

Many of the problems facing the Institute are common to all organizations having foreign operations. To exchange ideas, to insure cooperation, and to prevent overlapping or duplication, Consultative Committees composed of representatives of such other agencies have recently been formed by the Institute, one for each of the three operating Divisions of Food, Health, and Education. These groups should be helpful in finding ways to overcome operational hazards confronting staffs working in each field.

On November 12 the first meeting of the Food Supply Consultative Committee was held in Washington at the Institute offices, and it is planned to hold such meetings at regular intervals in the future. Members of this Committee include representatives from the Department of State, the Inter-departmental Committee on Scientific and Cultural Cooperation, the Department of Commerce, the Department of Agriculture, and The American International Association for Economic and Social Development.

Costa Rica

The Costa Rica program of the Food Supply Division was established in October 1942 with the aim of maintaining a steady flow of surplus perishable foods to United States troops in the Canal Zone. An incidental but vital adjunct of this procurement operation was the technical assistance provided cooperating farmers in an effort to obtain maximum yields of crops destined for export. By June 30, 1946, when reduced peacetime requirements brought about the termination of this activity, approximately 5,000 net tons of fruits and vegetables valued at $400,000 had been shipped to the Canal Zone, and an additional 1600 tons worth $160,000 had been made available to the Inter-American Highway organizations within the country.

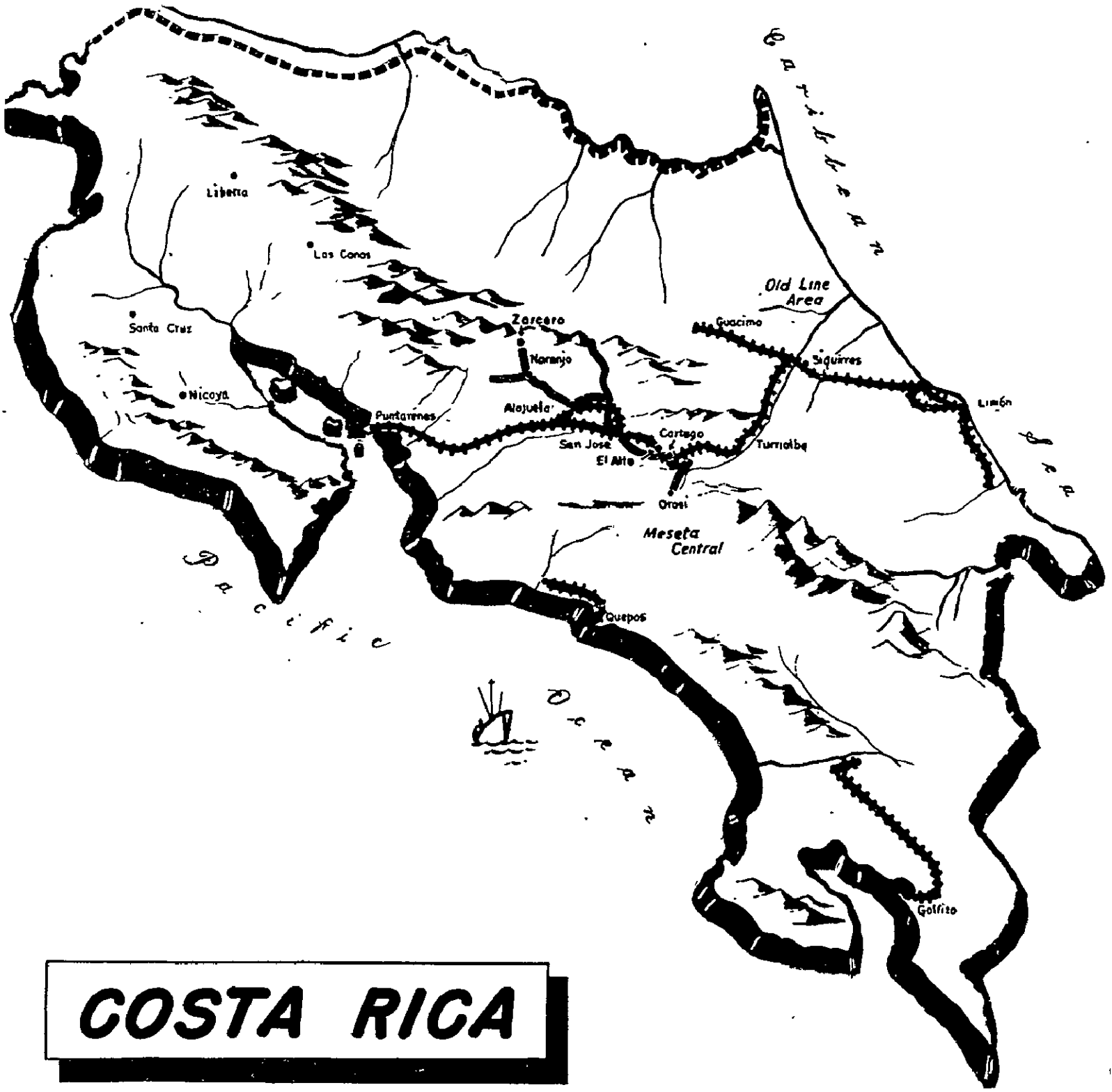
* * * * * *

In 1947 the extension of improved agricultural practices, which evolved as a by-product of the emergency food procurement program, has become the heart of the Division's work in Costa Rica. As the Food Program enters its sixth year, the expansion of this assistance into a permanent, country-wide service and the continued operation of a dairy improvement center and a corn production and drying project constitute the major steps being taken by the Institute to further the development and more effective utilization of Costa Rica's agricultural resources.

AGRICULTURAL EXTENSION

When a Costa Rican farmer requests aid in carrying out an improvement on his farm, the Institute staff supplies the U. S. technical "know-how" and the farmer provides all the necessary labor and materials. This assistance may entail the solution of a single outstanding problem or the development and execution of a complete farm plan. As the program develops and its influence spreads from farmer to farmer, increasing emphasis is being placed on complete farm planning. A tour through any of the areas where work has been concentrated provides convincing evidence of the effectiveness of the agents' work. Hillside ditches, terraces, and contour cultivation are dominant features of the landscape. New requests for assistance are increasing each month and even the few individuals who opposed the improvements originally are now among the more enthusiastic cooperators.

At the present time the Institute maintains extension offices in three agricultural centers in the Meseta Central--Costa Rica's most densely populated area--where farmers may come for information and advice and to purchase the hard-to-get agricultural supplies and equipment which are imported by the Institute and sold at cost. Each field office is staffed by an extension agent, his two assistants, and a junior agent whose duties involve the training of new employees. The chief objective of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Las Canas
Santa Cruz
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Puntarenas
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Naranjo
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San Jose
El Alto
Cartago
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Guacimo
Old Line Area
Siquirres
Limón
Orosi
Meseta Central
Quepos
Golfito
Pacific Ocean

COSTA RICA

this set-up, which was instituted by Howard M. Gabbert, Chief of Party, last September, is to "develop all-around extension agents and to eliminate the tendency for engineers to confine their attention to slide rules and transits, and for the *agronomos* to become so engrossed in crop production that they are unable to run a few simple contour lines or ditches. This is in line with the extension program's general policy of demonstrating practices and methods that the small farmer can readily comprehend and carry out himself.

"With probable extension and enlargement of the program in the offing, it was deemed essential to set up an organizational structure capable of being rapidly expanded. Regardless of the extent of the program's future growth, it is believed that the basic organizational structure is now sufficiently flexible to take care of it.

"In addition to providing for the training of new men in Extension work, an opportunity is also provided for training supervisors (Area Extension Agents) to assume a certain amount of administrative responsibility for their respective offices and for training the assistants to work cooperatively under their respective supervisors. In other words, it facilitates training along the lines of organizational fundamentals; it trains future leaders who can step out and assume responsibility for their own area offices.

"The importance of this phase of training cannot be overlooked if the Institute is to successfully attain its objective of developing a strong local organization that will be capable of eventually going ahead under its own steam. A group of well-trained *tecnicos*, but without properly balanced leadership and appreciation of cooperative action:--knowing what it means to work with the other fellow--will not go far in attaining the foregoing objective." (Monthly Report of Costa Rican Field Party for September 1947).

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The major types of technical assistance which are being provided by the Food Supply Division's field staff in Costa Rica and which are receiving widespread acceptance are: soil conservation and improvement, irrigation, disease and insect control, introduction of new varieties of crops, and the use of animal-drawn farming equipment.

SOIL CONSERVATION

The need for extensive application of soil conservation methods in Costa Rica is urgent, owing to the broken terrain, the intensive cultivation of slopes and the poor agricultural practices now employed. The greatest difficulty encountered by the Institute in this regard has been to convince farmers that much erosion is man-induced.

For many areas in the Meseta Central *simple contour plowing and planting* have proved effective, especially on certain volcanic slopes with deep, porous topsoils where infiltration rates are unusually high. During the past year 40 such projects covering 395 acres were established, not many acres by U. S. standards, but the family-size demonstrations in Costa Rica's heavily populated Meseta Central are important in their effect. Actually, the soil conservation program is beginning to make a decided change in the appearance of the landscape. Many reports have been received from airplane travelers who have noticed and asked about the extensive areas under contour cultivation with their smoothly curving hillside ditches and terraces.

A soil conservation project now underway on a farm in Santa Cruz de Turrialba is being observed with interest by nearby farmers. Located in the center of a large area in need of soil conservation work, the farm is serving as an excellent demonstration of sugar cane on the contour, with tractor equipment in use. The usual practice consists of digging trenches by hand and involves a fantastic amount of labor.

Where soil, rainfall or slopes make added protection desirable, *hillside ditches* are constructed on a flat grade in order to intercept excess runoff and carry it out to a safe disposal area. These ditches also serve as guides for contour plowing. No vegetative barriers are used ordinarily, although most of the ditches are permitted to stabilize themselves with grass.

Another soil-saving practice introduced by the Institute in Costa Rica is the *bench terrace.* Because of the initial cost of installation, farmer response to this practice has not been as rapid as to that of simple contouring. Nevertheless, bench terraces constitute one of the most effective methods of erosion control in Costa Rica and are wholly feasible on small, intensively used areas where power machinery is not employed. A measure similar to bench terraces, and locally called *contour beds,* has met with more enthusiastic response. The contour bed is essentially a modified bench terrace with less cut and fill and, therefore, with less disturbance of the soil profile. It has proved especially effective in conjunction with irrigation.

When a farmer sends in a request for technical assistance, a survey is conducted of his farm and a complete analysis is made of the soil samples obtained. The results are tabulated and returned to him with complete recommendations as to the type and quality of fertilizer to use and the proper method of application.

System for planting onions on the contour introduced in Costa Rica by *agentes agricolas* of the Institute. This system facilitates more economical and efficient use of irrigation water and prevents loss of valuable topsoil from erosion.

In the Santa Ana area near San José, where a large number of onion growers are located, many farmers have installed contour beds under the direction of Institute agents. This system of irrigation layout and erosion control is especially appealing to farmers since it reduces labor costs for irrigation to one-fourth the amount formerly spent. Under the new layout fields are irrigated once every eight days, whereas with the customary serpentine ditch irrigation was necessary every other day. The contour beds also permit night irrigation without attendance, a factor which is of considerable importance in this area owing to the shortage of daytime irrigation water. *As a result of the effectiveness of this project, requests for similar assistance are now pouring in from other parts of the country.*

SOIL IMPROVEMENT

The lack of sufficient organic matter in the soils of the Meseta Central is one of the principal problems of soil management in Costa Rica. Three approaches have been made by the Institute to its solution: the use of compost, of commercial fertilizer, and of green manure and crop rotation.

COMPOST. - An important phase of all technical assistance work of the Institute has been the establishment of demonstrations for making compost. The policy followed by IIAA technicians has been to persuade farmers that more compost means improvement of the general condition of the soil and provides a better medium for soil organisms, for increasing the water-holding capacity of the soil, and for increasing the resistance of the soil to erosion. Compost has not been advocated as a complete substitute for chemical fertilizers. On the contrary, chemical fertilizer recommendations, preceded by soil analyses, are important features of the work of the extension agents.

COMMERCIAL FERTILIZER. - To date more than 1200 soil samples have been analyzed using the Morgan quick-test method. When a farmer sends in a request for assistance, a survey is conducted of his farm and a complete analysis is made of the soil samples obtained. The results are tabulated and returned to him with complete recommendations as to the type and quality of fertilizer to use and the proper method of application for each crop he expects to grow. The farmer may then purchase the fertilizer at cost from one of the three extension offices. One farmer using a formula recommended by the Institute reported that his last potato crop yielded 82 sacks per manzana in an area where the average is 20, illustrating the great strides that can be made through the application of improved methods.

GREEN MANURE AND CROP ROTATION. - In the western section of the Meseta Central there are so few farm animals that the production of compost is

not feasible. Instead, the growth of green manure crops has been recommended. One of these crops which seems to fulfil the local need is rice-beans, a fast-growing legume which produces a large volume growth in about three months and is relatively easy to plow under. This year one of the cooperating farmers has volunteered to grow a seed crop for sale at cost to his neighbors. An attempt has also been made to introduce crop rotation although the desire of farmers to obtain two crops a year and the limited land available have hindered its adoption.

DISEASE AND INSECT CONTROL

Because of favorable climatic conditions which permit a year-long growing season, the control of plant diseases and of damaging insects are pressing problems of tropical agriculture. Generally, fungi attack in the rainy season and insects in the dry season. The result is a continuous fight against one or another of these plant enemies.

The routine work of the extension agent includes periodic visits to farms in his territory to supervise spraying and dusting of seed beds and vegetable crops. Suggestions are made in regard to appropriate insecti-

The routine work of Institute extension agents in Costa Rica includes periodic visits to farms to supervise spraying and dusting of seed beds and vegetable crops.

cides and fungicides and instruction is given to farmers unfamiliar with their use. Needed equipment is rented to the farmer by the Institute and the materials required are delivered to him by the agent who collects the cost price at the farm.

With both potatoes and tomatoes--important sources of income for Costa Rica's small farmers--spraying often means the difference between the success or complete failure of a crop. Blight, always a serious problem in Costa Rica's principal tomato-producing region of San José, was unusually severe this year. Heavy rains in July, with generally high humidity, provided ideal conditions for the development of the dreaded fungus *Phytophthora infestans*, locally known as Apagón, which attacks tomato plants, causes fruit and leaf spots, and results in ultimate crop failure. Due to an intensive spraying campaign conducted by rural agents of the Institute food program in Costa Rica, 75 per cent of the estimated 25-ton crop was saved. By the first of October, 60 days after the normal harvesting period had ended, locally-grown tomatoes were still available in San José markets and growers were reporting all-time high incomes because of the greater volume of tomatoes produced.

A few demonstrations conducted in the control of mildew in cabbage with copper compounds have proved effective as has the help given citrus fruit growers in controlling fungus diseases. As the result of these Institute demonstrations an increasing number of growers are buying their own equipment and are incorporating spraying in their regular farm activities.

A typical example of insect control work is the project underway at Alajuela to curb leaf-cutting ants by applications of arsenic and sulphur with a Squier pump. A number of farmers have learned to operate this equipment and are now working independent of Institute supervision. Onion thrips, bean beetles, cabbage worms, and other damaging insects are being curbed effectively with Gammexane, DDT or various copper compounds used as a spray or in a dust. Indicative of local interest in this campaign to reduce losses from insect damage is the recent donation by an Alajuela agricultural supply dealer of 68 pounds of insecticides for use in future trials by Institute technicians. This is also recognition of the fact that the distribution of implements and material at cost is viewed with favor by commercial interests. It has become obvious that in reality the extension work redounds to their benefit.

Another important phase of the Institute's technical work is the field trials which are made of new varieties of vegetables, legumes, and cereal

FIELD TRIALS

crops to determine their adaptability to local conditions. The majority of these trials are conducted by progressive farmers living near one of the extension offices. This procedure enables the agent to supervise the planting and permits the carrying out of more extensive experiments than would be possible by a single individual. Among the crops tested to date are *yuca*, open-pollinated corn (Mayorbela and Venezuela No. 1), hybrid corn, tropical kudzu, soybeans, and four legumes: guar, crotalaria, rice-beans, and velvet beans. In a similar fashion, tests of different mixtures of fertilizers have been carried out in order to form a more adequate basis for fertilizer recommendations to farmers.

SMALL FARM IMPLEMENTS

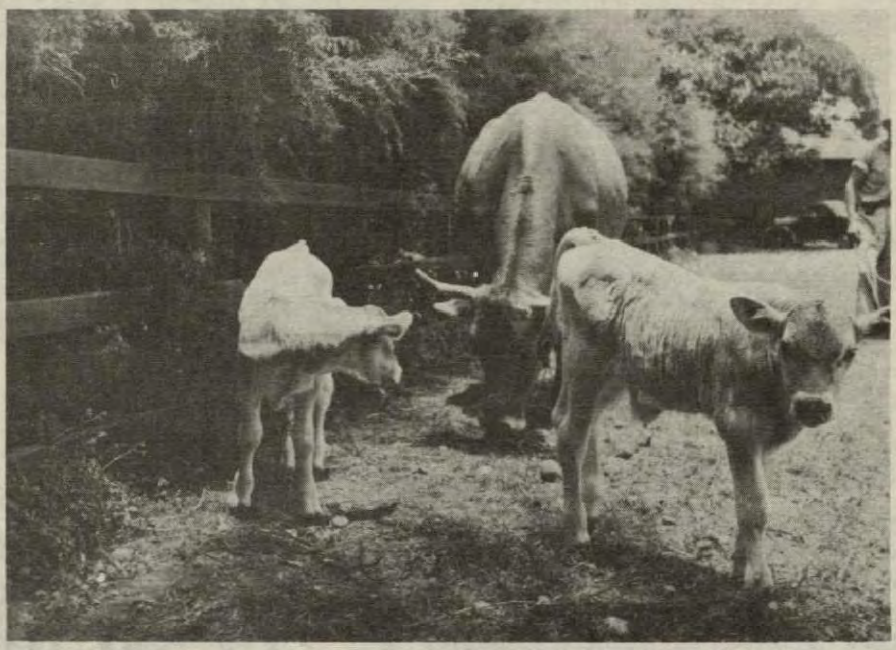
Operations on most small farms in Costa Rica are characterized by excessive manual labor. For this reason, an increasingly important activity of IIAA extension agents is to persuade farmers to adopt small animal-drawn machinery and improved hand equipment. According to tests conducted by the Institute, the adoption of such a simple practice as the use of a middle-breaker plow drawn by a single ox reduces the cost of land preparation to one-third the amount usually spent for hand labor.

Greater emphasis and more demonstrations are planned for this project at the beginning of the next cropping season. To date sprayers, dusters, rakes, shovels, axes, and machetes have been more readily accepted than animal-drawn equipment, although the latter is more important in effecting greater economy of operation on Costa Rica's small farms.

DAIRY IMPROVEMENT CENTER

At El Alto, a 270-acre government-owned tract of property located on the Inter-American Highway between San José and Cartago, the Institute operates a demonstration farm which has served as the base of the technical assistance program during the past year. Here technicians have initiated experimental plantings of corn, potatoes, and other crops and have conducted demonstrations of pasture improvement, dairy operations, livestock production, soil conservation, and the operation of small farm machinery.

Since the authorization a year ago of $19,525 by the Costa Rican Congress for the establishment of a dairy and artificial breeding center at El Alto, general farming activities have been reduced to limited areas devoted to vegetable production, fertilizer and variety trials. Local producers have cooperated enthusiastically in the dairy program by donating more than 40 high-quality calves and heifers valued at $40,000. All are either purebred or high-grade stock of Guernsey and Jersey breeds. As a stimulus to the breeding program the Institute has imported from the U. S. during the past six months two pedigree bull calves.



Brown Swiss calves produced by artificial insemination at the El Alto dairy improvement center.

There has been a steady flow of visitors to El Alto during recent months and all seem enthusiastic with the prospects for cattle improvement which the center will soon be able to offer breeders. As soon as the project is in full operation, groups of dairy producers will be brought to the farm to observe demonstrations of proper animal care and feeding, sanitation, artificial insemination, and pasture improvement.

CORN DRYER

Because food production activities of the Institute were organized on an emergency basis at the start of the program, it was impossible to undertake a comprehensive program of assistance in the production of basic food supplies, although it was realized that this is one of the most vital needs of the country. Available funds and personnel were limited and the requirements of the Army were urgent. Nevertheless, late in 1943 a pilot program was begun in the Old Line Area near the Atlantic coast, where farmers were dependent on corn as a cash crop. Investigation revealed that the climate of this region was favorable for the growing of two crops a year, but the extreme rainfall--sometimes higher than 150 inches a year--caused the corn to sprout in the ear before harvesting. Harvested corn was often damaged by mold before it could be transported to the highlands. It was not unusual for 30 to 50 per cent of the crop to be lost as a result of this excessive moisture.

In an effort to demonstrate how to meet the problem the Institute constructed a drying plant at Guácimo which began operation in June 1944. The effect on the region's corn supply was almost immediate. Because farmers received higher prices for their corn and sustained fewer losses, they were encouraged to plant an estimated 30 per cent increase in acreage the next season.

The dryer built by the Institute at Guácimo, Costa Rica has encouraged increased production of corn by reducing losses due to extensive moisture.

Despite ample evidence that the basic idea was sound, the corn dryer cannot yet be termed a success. The task of convincing the farmer that corn drying is beneficial and logical is one thing; to convince the buying public and the Government of the extra value of the dried product has proved to be a different matter. In 1947 the price of dried corn was fixed at a level which, in comparison with the established price of regular corn, provided little incentive to farmers to dry their corn. As a result the corn dryer did not operate at capacity during the harvest seasons. Only the faith of the cooperating farmers, who have formed an association for the express purpose of purchasing and maintaining the dryer on a cooperative basis, permitted operation at all.

PRESENT ECONOMIC SITUATION

No objective student of Haitian conditions can escape the conclusion that, the major source of Haiti's troubles is basically economic. Here is a country with an area of approximately 11,000 square miles inhabited by a population of about 3,000,000 people which is constantly increasing. Only a part of that area, perhaps 40 to 50 per cent, is tillable; soil erosion, due mainly to deforestation, reduces each year the tillable area, of which only a fraction is irrigated although there exist many possibilities for irrigation.

SOIL EXHAUSTION

Gradual exhaustion of the soil has resulted from failure to use fertilizers and to apply elementary methods of conserving soil fertility. Ignorance of methods of plant selection and breeding, lack of proper preparation, preservation and marketing of various agricultural products coupled with the use of obsolete agricultural implements constitute additional facts which explain the stagnant character of the agricultural production of the country. Of additional significance is the fact that this production depends almost exclusively on the peasant class, the great majority of whom are illiterate with their productive capacity affected by chronic diseases such as malaria, yaws, and intestinal worms, as well as by a deficient diet.

SUGGESTED SOLUTIONS

In the opinion of the Food Supply Division's technicians who have been working in that country, there are two general lines of attack toward helping to solve Haiti's agricultural problems: one would consist of improving the land already in use, and the second would emphasize the subjugation, reclamation and effective utilization of lands not now under cultivation. Because of sociological difficulties, such as illiteracy, the strength of old habits, and the opposition to changes introduced by foreigners, it has seemed wisest to leave the job primarily to the Haitians themselves, helping only through assistance in planning, by demonstrative projects, and training programs. In the task of bringing to agricultural life the unused lands of Haiti so greatly needed for production, U. S. technicians on the Food Supply Mission have made a good start.

On October 8, 1947 in an editorial appearing in the Haiti newspaper *Le Continental* and entitled "What We Think of the Food Supply Division," a Haitian journalist stated after a visit to the Artibonite Plain, scene of the Division's most extensive work at present:

> "Anyone who has not visited the work done by the Food Supply Program at La Gonave and at Bois Dehors, in the Artibonite,

HAITI


ILE DE LA TORTUE
Port-de-Paix
Mole St. Nicolas
Cap-Haitien
Limbe
Trou
Plaisance
Gonaives
St. Michel
de l Atalaye
Hinche
Pte. Riv. de
L'Artibonite
St. Marc
ILE DE LA GONAVE
Mirebalais
Jérémie
Port-au-Prince
Dame Marie
Anse D'Hainault
Léogane
Kenskoff
Miragoane
Camp
Perrin
Tiburon
Seguin
Jacmel
Cayes

Overgrazing has taken its toll of Haiti's tillable land.

cannot appreciate the importance of this Program to a country which is essentially agricultural. On Tuesday, September 30, we were able to see for ourselves the work accomplished by the Food Supply Program at 'Bois Dehors.' It is amazing.....

"The Food Supply workers remind us of the pioneers of the Southern United States who, after the war of 1812, had to draw out of a barren ground the secrets of prosperity and happiness. Like these Southerners, the Food Supply men are waging war on the land at Bois Dehors. They will win this fight, if we may judge from the work they have already accomplished. Is it not gratifying to see corn and millet growing, as mushrooms do in the trunk of a dead tree, on those lands thought to be unfit for cultivation? In our humble opinion, this work will be the most important and the most profitable ever accomplished in our agriculture....Only agriculture, with industry as its corollary, can save this country."

* * * * * *

AN EMERGENCY BEGINNING: 1944-45

When the Food Supply program was established in Haiti in August 1944 it began as emergency aid and there was little chance for analysis of the country's long-range economic needs and choice of ideal solutions. With the coming of war to this hemisphere and acquisition by the enemy of all important sources of vitally needed rubber, about 60,000 acres of Haiti's best agricultural land were planted to cryptostegia, a rubber-producing vine. When urgent need for it had passed and the project had been brought to an end in June 1944 most of the 40,000 families to whom this land belonged found themselves without work and without the seeds and

PHOTO BY BYRON CORONEOS

Agricultural production in Haiti depends almost exclusively on the peasant class, the great majority of whom are illiterate with their productive capacity affected by chronic diseases and a deficient diet.

tools needed to replant crops. Many of the mango, breadfruit, and other trees contributing so greatly to their diet had been cut down and no means existed for replacing them. Food production for local consumption is normally so low that this created an emergency situation. U. S. aid was sought.

SEEDS, PLANTS AND TOOLS

In five former cryptostegia areas--Franklin and Aux Cayes in the south, the Artibonite in central Haiti, and Limbe and North Plain--organizations were set up immediately to aid local farmers urgently in need of assistance. Meetings were held to give information on planting, cultivation and insect control; seeds were distributed, nurseries established and cuttings from the fruit trees and vegetables grown there were distributed to displaced farmers. Scarce tools were procured and made available to farmers at cost.

GRAIN STORAGE BINS

To help conserve food produced until times of shortage, 65 metal bins were set up at 34 sites in grain-growing areas throughout the country. One permanent storage building was built at Coupon in the Artibonite Valley, and at Dessalines another permanent seed storage house was completed. Plans were drawn up for a grain marketing project under government supervision.

IRRIGATION AND DRAINAGE SYSTEMS

To aid farmers struggling to increase Haiti's food supply but plagued by drought or flood, Food Supply technicians undertook emergency projects to improve irrigation and drainage and thus increase the cultivable land area and promote greater yields on semi-arid plots. Using the remains of old French Colonial systems as a start, Institute and Haitian engineers instituted irrigation and drainage construction at six sites throughout Haiti: Lagon Bleu, Liancourt, Borel, Port-de-Paix, D'Avezac and St. Raphael.

TRAINING AND TECHNICAL ASSISTANCE

While emergency aid was being extended in the fields where immediate assistance was most needed, an effort was made to provide specialized training for Haitian agriculturists helping in the program, and practical demonstrations for farmers throughout the country. By the end of the program's first year three Haitians had been selected for advanced instruction in the United States, and small demonstration farms had been established on the lands of some of the more progressive small farmers willing to cooperate. Here Institute agents showed how to handle oxen and plows, and how to prepare and plant large plots of land at one time. Soil conservation, crop rotation and other

practices essential to a balanced agriculture were also taught. This method of instruction proved of value not only in teaching farmers, but in training local agents to introduce new practices to members of their own communities.

As part of the program of technical assistance, livestock improvement and forest conservation studies were made and detailed recommendations submitted.

COMPLETION OF EMERGENCY PHASE

With the help of excellent Haitian field personnel and a favorable growing season the emergency program proved successful beyond all expectations. Plains which had been cropless in the fall of 1944 were covered with corn, millet, rice, beans, mandioca, sweet potatoes, bananas, and plantain a year later. A plentiful supply of good seed was produced for the next crop season and grain storage facilities made available by the Program helped to stabilize prices and supplies. The task of continuing distribution of fruit and valuable wood trees was turned over by the Institute to the Haitian Government.

* * * * * *

PROGRAM CONSOLIDATION: 1946

With completion of emergency aid, opportunity was given for assessing the Program's accomplishments and consolidating plans for its future. It was decided that in order to effect the most lasting benefits to the nation's economy from work already done, stress should be placed on education and demonstration to assure maximum use of facilities already established by the field party and availability of experienced local technicians to carry on without assistance.

Consequently, the second phase of the program, which was initiated in January 1946 under direction of Dr. Marion N. Walker, was directed toward improvements in the pattern of Haitian agriculture through emphasis on demonstrational work in the fields of grain storage, irrigation and drainage, livestock improvement, and more efficient farming practices, principally on La Gonâve Island and on the Artibonite Plain.

USE OF STORAGE FACILITIES

Illustrative of the need for combining an educational program with new facilities introduced was the slowness with which farmers came to appreciate the potential usefulness of the air-tight and moisture-proof storage bins set up in grain-producing areas by the Food Supply staff. Naturally hesitant to adopt new methods contrary to their traditional agricultural habits, many peasant farmers declined to

To help conserve food produced until times of shortage, 65 metal storage bins have been erected by the Food Supply Staff at 34 sites in grain-growing areas throughout the country.

use these storage facilities until an extensive educational campaign had been conducted.

Further evidence that construction alone without technical help is insufficient to assure proper use of structures could be observed from a study of the nation's neglected irrigation system.

MAINTENANCE OF IRRIGATION

Although construction work undertaken in this field during the preceding year had constituted only a small beginning of all that needed to be done, efforts along this line had to be reduced during 1946 and, in spite of receiving numerous requests for assistance, only a few new projects were started. All of these were cases in which immediate expenditure of small sums could obviate destruction or make improvements which might be much more expensive or impossible to accomplish later. For example, repairs were made on the Torcelles system which serves an area of 2500 acres of well-cultivated land on the Cabaret and Maneque Plains. Constructed during the French colonial era, the system had been permitted to deteriorate so badly that it was feared crops would be ruined by failure of existing structures.

During the early part of 1946 efforts were made to push development of the 1200-acre Hinche Farm previously chosen as a demonstration project and training center for students of animal husbandry.

LIVESTOCK IMPROVEMENT

A three-months' survey was made of the farm preliminary to a reorganization designed to improve its usefulness, and in May the head of animal husbandry work at the National School of Agriculture traveled to Florida to purchase

Brahman cattle imported from Florida for the 1200-acre Hinche farm which is operated as a demonstration project and training center for Haitian students of animal husbandry.

breeding animals for the project. In September the government decided to expand all livestock work in Haiti's Central Plain and to make the Hinche Farm the center for this activity, using the development plan prepared by the Institute's specialist.

In an effort to acquaint Haitian agricultural students more thoroughly with modern techniques essential to efficient farming and sorely needed for use on Haiti's neglected land, several steps were taken: At the request of President Estimé of Haiti and officials at Damien, 50 acres of land belonging to the National Agricultural School were selected for

FARMING PRACTICES

a machinery demonstration project. This tract provided an area for training students in the operation of agricultural equipment, while serving as a demonstration area for farmers in the Cul de Sac and other Plain regions.

The practice of establishing small demonstration units on various farms begun earlier in the program was expanded to include activities such as those initiated in June 1946 near Jacmel and at the National Agricultural School at Damien. At Jacmel a three-acre plot was used to exhibit soil conservation practices and aroused great interest among local people. This project was inaugurated in September on its completion and turned over to the National Agricultural Service for continuance. At Damien a two-acre trial and demonstration plot was developed to show improved methods of plowing, irrigation, planting and cultivation.

To aid in improving the culture of rice in Haiti a rice-production specialist came on a loan basis from the U. S. Department of Agriculture, while a fisheries expert was also brought to Haiti to investigate possibilities for improving local fisheries. Both were short-term assignments.

Significant demonstrations in crop development and irrigation were conducted in connection with the work on La Gonave Island. This government-owned island west of the Haiti coastline had once been a prosperous region, serving as one of the chief suppliers of corn and millet to the mainland. But drought, insects, and continued impoverishment of the soil rapidly changed its economy until it was virtually forgotten. In 1945 the poverty-stricken condition of its 20,000 peasants came to the attention of the Haitian government and Institute aid was asked in alleviating their plight. From an economic viewpoint the rehabilitation of its agriculture was vital to the future prosperity of the whole Republic.

LA GONAVE ISLAND

A survey of the island was made and a project was drawn up to meet emergency needs of the people while plans were worked out for long-term improvements. Water supply sources had to be cleaned or constructed, trails had to be widened, and seeds and tools had to be made available before primitive agricultural methods could be improved. By the end of the project's first year in December 1946 a head quarters office and nursery had been set up at Nan Café, water at important sources of supply had been made clean and safe, needed trails had been improved, fruit trees, plants and seeds had been distributed, a demonstration farm had been opened at Plain Mapou and a variety of other services ranging from construction of four large silos to the establishment of a veterinary clinic had been started.

Field agents on La Gonave Island distribute plants and seeds produced in this nursery at Nan Café.

Because few Haitian agriculturists have sufficient practical experience to continue work started under guidance of U. S. technicians, a concerted effort was made to train the more promising of these men by close association with various aspects of the work or by study and observation abroad. In 1945 three local agriculturists had been sent to the U. S. for advanced instruction, but in 1946 it was decided to send trainees to Puerto Rico instead, where conditions and problems are more similar to those in Haiti. Training arrangements were made in Puerto Rico with U.S. Department of Agriculture representatives and the Extension Service of the University of Puerto Rico. During 1946 Institute training grants were awarded to five men for three or four months' study there.

TRAINING EXPANDED

In addition, a two-week summer course for 30 rural teachers and field agents, sponsored by the Institute's field party in cooperation with the Haitian Department of Agriculture, was organized during the year to provide knowledge of particular techniques useful to farmers of the communities from which the students were derived. Other training activities included both the operation of additional demonstration facilities and the preparation of recommendations designed to improve training methods currently in use.

SPECIALIZATION OF ACTIVITIES: 1947

When on December 27, 1946 a new extension agreement was signed providing for operation of the cooperative program until July 1948, provision was made for continuation of educational efforts on La Gonave Island, at Hinche, and for advanced training of agriculturists. Chief emphasis, however, was placed on a specialized activity--an important irrigation and drainage demonstration project on the Artibonite Plain.

ARTIBONITE VALLEY

The greatest potential agricultural resource of Haiti, the 200,000-acre Artibonite Valley region was in danger of being lost to use for crops unless constructive work was undertaken because of salting already affecting more than half the total area. Plans were made to start immediate drainage and diversion of flood waters to force deposition of silt on selected areas now valueless because of salt. For months extensive surveys and studies of the whole Artibonite area were conducted to determine the method of best starting this project.

Mr. Alan Laflin, who was assigned to Haiti in October as the new Chief of Field Party for the Food Supply Division, has been named a member of a Commission set up by the President of Haiti to make an over-all study of the possibilities for development of the Artibonite Valley, including irrigation, drainage, flood control, and hydro-electric power. In addition to Mr. Laflin the Commission consists of a representative from *Travaux Publics* (Public Works Department), and the Irrigation Division of the Ministry of Agriculture. A further purpose of the Commission is to coordinate all studies now being made into a unified whole.

BOIS DEHORS. - By May the first of an inter-related series of projects in the Artibonite was chosen. This involved the immediate construction of an operating and residence center on an area of approximately 1700 acres situated in a mesquite and cactus waste known as Bois Dehors. Once operating facilities were acquired, an irrigation system could be built, utilizing water from an arm of the Estère River for the planting of basic food crops. During the summer land on this project was cleared and sowed to corn and peas, roads were built, a small garden planted to vegetables

to check on the feasibility of growing them in that area, and the buildings for project headquarters were constructed. After appearance of the corn and peas it was found that the high salt content of the soil made it advisable to plant other fields to rice--a cash crop, but one which required such an amount of water that its cultivation would be helpful in washing the soil. By November 90 acres of rice had been planted. (Latest indications are that the success of growing cash crops has not been fully established. Efforts are underway to obtain the services of a U. S. specialist to advise in this field.)

Mesquite and cactus waste at Bois Dehors which is being cleared for irrigation and crop production.

On September 30 the President of Haiti was invited, along with other officials and representatives of the press, to an inauguration of this project--"a demonstration of what can be done to improve our lands and develop their rich potentialities," in the words of a representative of the *Haiti Journal*.

VILLARD. - In accordance with conversations with President Estimé, a project was prepared for the reclamation of some 6000 acres of land in the Artibonite Plain to be known as the Villard project. This project is based on studies made by the Food Supply engineers, the result of which

indicated that the drainage and irrigation of this area could be accomplished for $125,000. Inasmuch as present unobligated funds are insufficient, the project has been prepared in two parts. The first, which includes the drainage of the entire area but the irrigation of only the upper half, could be carried on during the remainder of the existing contract at a cost of $75,000. The other part, the irrigation of the lower half of the area and the installation of a second pumping plant, is contingent upon an extension of the present agreement. The Ministry of Agriculture and Public Works engineers are now reviewing the studies and the government is anxious to have actual work started as soon as possible.

FONDS PARISIEN

Other activities include the Fonds Parisien Irrigation project located 30 miles east of Port-au-Prince. Work began in November with the running of 9000 meters of levels to determine the location of the main canal, and the staking of 1,800 meters of this canal. In colonial times and the early days of the Republic the Fonds Parisien area was intensely cultivated. Gradually the upper water shed became deforested and the heavy flood of 1909 filled the channel of the river so full of debris that the natural flow disappeared into the gravel deposits and no longer reached the cultivated lands. By now the people in this area are living in extreme poverty. Investigations have shown that by constructing a small subterranean dam in the bed of the river at a point above where the water disappears and piping the water to the farm lands, about 500 hectares can be irrigated. The cost of this work has been estimated at $75,000. This amount will be deposited to the funds of the Cooperative Food Production Program by the Haitian Government to finance the project, which will be executed in the regular manner under the direction of the Chief of Party.

CONTINUED EMPHASIS ON TRAINING

While the major part of the field party's interests have been centered on the vitally important area of the Artibonite, efforts along demonstrational and training lines have not been neglected. On La Gonave the main objective during 1947 has been to utilize to the fullest extent the Nan Cafe center and others already established and to increase the work of direct assistance to farmers. Demonstration farms have been increased, individual farm visits made, group meetings encouraged, and production techniques, soil conservation, storage and marketing methods stressed.

Expansion of livestock work has been planned to include an extension service for farmers as well as a much broader livestock development project.

Three additional agriculturists have been sent to Puerto Rico for training, and other local students have been aided through operation of a

demonstration field near Damien provided for in the new extension agreement and designed to emphasize more efficient utilization of land. In July a project was adopted providing for training of all students at the National School of Agriculture during their summer vacation. Six were sent to Bois Dehors, two to La Gonave, four to Hinche and four to the farm project at Damien. All the students did actual practical work with

"Learning by doing" has been the chief aim of Institute training activities in Haiti. Here students prepare a plant bed under the direction of a local technician.

their hands while they learned, since the value of "learning by doing" was the project's chief aim. One of the trainees wrote to the director of the Bois Dehors project on completion of his summer's work:

> "Never in my young 23 years had I met such a concept of work as the one you have shown us, not by words but by example, action and cooperation and above all by inviting us to work, always making the labor interesting, attractive and easy."

* * * * * *

BYRON CORONEOS

Any program for improvements in Haiti's agriculture-involving as it must, changes in ingrained habits and customs-must be essentially educational in nature and will be slow.

In such experiences as these lies the key to Haiti's future--for only through ambitious, informed and enthusiastic leaders among her own people can any country achieve lasting stability. Any program for improvements in Haiti's agriculture--involving as it must changes in ingrained habits and customs--must be essentially educational in nature and will be slow. The Institute's work in the Artibonite has served particularly to highlight the difficulties which form substantial impediments to all efforts at agricultural development in a country such as Haiti. Lack of accurate information on land tenure made selection of acreage to be used hard, and opposition to new methods by peasant farmers often precluded use of their plots even if tenure was clear. Another obstacle to development of the potentially-rich Artibonite Valley was found to be the fact that water could scarcely be provided in one area before claimants moved in to take up small parcels of land, whereupon possibilities for future development virtually disappeared. Such difficulties are immensely discouraging--for the Haitians who are trying sincerely to remedy their country's plight as well as for visiting technicians. Yet, in the words of Dr. Marion Walker, who retired in October as head of the Food Supply Party to Haiti:

KEY TO THE FUTURE

> "That the problem is difficult is beside the point, and the attitude of many....that the situation is hopeless is equally so. If the problem is difficult, it requires a better planned and executed attack on it; if the situation is hopeless it merely is so in relation to the methods used and the effort expended."

Paraguay

"STICA....is without question the most powerful agency for agricultural improvement in Paraguay," said Dr. Carl C. Taylor of the U. S. Department of Agriculture after a trip to that country early in 1947. *"STICA now has a standing and the experience which should guarantee many times greater progress in the next than in the past five years. All it needs to do is integrate its program and focus it on the major directions of changes which are in the making...."*

These two sentences highlight STICA's past and future: the first affirms its progress and the second points to its opportunities.

* * * * * *

December 31, 1947 marks the completion of five years of experience for STICA (Servicio Técnico Interamericano de Cooperación Agrícola), the Servicio which was created in 1942 by the Paraguayan and U. S. Governments to study, propose and attempt to carry out solutions for Paraguay's agricultural problems. When U. S. technicians, who were sent by the Food Supply Division to join Paraguayan personnel in this task, first arrived they discovered that Paraguay possesses tremendous agricultural resources which more than compensate for absence of a seaport: a tropical climate suitable for production of most temperate and tropical zone crops, wide expanses of fertile soil awaiting development, abundant virgin forests, and one of the greatest concentrations in the world of undeveloped hydroelectric energy. Yet, despite these natural advantages, agricultural production there was insufficient to satisfy domestic demands, much less to provide a surplus for foreign markets and build up dollar supplies. Its subsistence-type economy, based on farming, cattle-raising and timber exploitation, supports a population of over one million, more than two-thirds of whom live within a hundred miles of Asunción, the capital city, yet almost all of whom know little of modern agricultural techniques. STICA's task then was to build a program, based on these conditions, which would serve as *a beginning for an integrated agricultural economy.*

STICA's PAST

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EXTENSION AND CROP DEVELOPMENT

Such a program has now been established. Its nucleus is a Farm Rehabilitation Credit Project established four and one-half years ago by the Paraguayan Government with the assistance of STICA, which encompasses all forms of financial and economic aid required for the development of Paraguayan farms and is similar in function to the Extension Service

FARM CREDIT PROJECT


CHACO
Colonia Mennonita
Río Pilcomayo
Concepción
Río Paraguay
San Estanislao
ASUNCION
Caacupé
Piribebuy
Col. Oviedo
San Lorenzo
Capiatá
Paraguarí
Yaguarón
Villarrica
Quiindy
Ybycuí
Caapucú
Borgerito
San Juan
Villa Florida
Pilar
San Ignacio
Río Paraná
Encarnación
PARAGUAY

of the United States. To date over 1600 farm families in 24 rural communities have participated in this project in which practical education is combined with the power of credit to enable farmers to obtain the resources necessary for farm improvement. Through its facilities loans are extended for crop production, the acquisition of livestock and equipment, or the amortization of existing debts. Ample credit is also arranged for the establishment of cooperatives while technical advice and supervision are always available to help the loan recipients practice modern methods of agricultural development.

In accordance with the terms of the program's basic agreement, STICA helps to administer this project and trains the credit supervisors, 35 of whom have been chosen from among the young Paraguayans in training on STICA's various projects to receive special courses over at least a six months' period at the National Institute of Agronomy..

NATIONAL INSTITUTE OF AGRONOMY

Creation of this Institute was one of the first undertakings of STICA. In addition to its function as a training center (since there is no agricultural college in Paraguay), it is designed to serve as a base for Credit Project activities. Here improved seeds are produced, tested and labeled for distribution to the Project's farmers, and various experiments in crop production are conducted to determine the modern agricultural methods most adaptable to the needs of

Administration Building of the National Institute of Agronomy near Caacupé, Paraguay.

Experimental rye planting at the National Institute of Agronomy which serves as a training center for Paraguayan agriculturists and as a base for determining the modern agricultural practices most adaptable to the country.

the country. During 1947 a plan was prepared for the future production and distribution of field and vegetable crop seed in Paraguay. This plan, which includes the building of a laboratory and seed storage house at the National Institute of Agronomy at Caacupé, is now in process of execution. It includes: making available foundation stocks to selected farmers, multiplication of the stocks by those farmers, field inspection, grading and testing, introduction of seeds from other countries, and seed distribution.

TECHNICAL BULLETINS. - During the period from July 1946 to August 1947 the Food Supply Division was able to secure the aid of the head of Iowa State College's seed laboratory, Dr. R. Howard Porter, who acted as advisor to the Institute of Agronomy while a member of STICA's staff. Under his leadership the crop development activities of the Institute were greatly intensified and more than a score of technical agricultural pamphlets and circulars were issued for use of cooperating farmers. Patterned after the information bulletins of the U. S. Department of Agriculture, they represent the beginning of a national agricultural literature in Paraguay.

* * * * * *

Complementary to demonstrations of advanced farming techniques carried on at the Institute are those in practice at the Model Colony Project initiated by STICA as a subsidiary to the Farm Credit service. Fifteen farmers of ambition and intelligence were chosen in June 1946 as the nucleus for a colonization project under which it is hoped that eventually 100 families can be settled near Piribebuy and taught to farm efficiently on 2000 hectares of Paraguay's most fertile soil. Seeds tested at the Institute and needed machinery are made available to these settlers at reasonable prices, road construction has been undertaken, and well-drilling equipment has been acquired in an attempt to solve the water supply problem. Within the past few months equipment has been secured for the manufacture of mandioca starch, which it is hoped will become a flourishing industry at the Colony.

MODEL COLONY

An Institute technician examining soil at the Model Colony initiated by STICA as a subsidiary to the Farm Credit Service.

Approximately 37 farmers are now renting and working plots (comprising a total of 901 hectares) on the land which has been divided in accordance with long-range plans for the area's development and which will eventually be owned by the colonists. A member of the U. S. Embassy staff in Paraguay who visited the colony in October 1947 reported:

"The work done so far is extraordinary. The farms themselves are little models.....They have some very nice looking crops and they are now starting to build homes for farmers who have remained on the property for at least two years and have proved their worth. These houses are also being put on a credit basis and will eventually be paid for by the farmer himself."

* * * * * *

HOME IMPROVEMENT

Another major activity of the Farm Rehabilitation Credit Program is the provision of assistance for the farm women of Paraguay.

The first effort to provide such aid was made in October 1944 when a Domestic Work Center was established at Capiatá (a village 25 miles southeast of Asunción), by a member of STICA's staff. Subsequently two additional centers and two subcenters have been organized in other rural communities. Built along the lines of the typical Paraguayan farmhouse, yet incorporating easily-made improvements, these Centers afford country women and their families an opportunity to learn new methods and skills which make their homes more pleasant and healthful. Each is staffed by outstanding women of the community, especially selected and trained to provide basic instruction in the domestic arts, hygiene, child-care and nutrition.

DOMESTIC WORK CENTER

Although the Domestic Work Center is a great step forward in the movement to secure better homes for Paraguay's rural population, its usefulness is restricted to families living in the immediate vicinity. So the Credit program, under the guidance of STICA, set about to develop a corps of young women capable of going into the homes of borrowers, wherever they might live, and not only suggesting improvements but helping to carry them out as well.

During the summer of 1946 plans were formulated to establish a school for rural women supervisors for this purpose and after weeks spent in surveying the needs of the country people and in handpicking a staff qualified to teach social work, agriculture, health and hygiene, La Escuela de Supervisoras Rurales opened on October 1 at Caacupé. After careful screening of scores of applicants, 35 young girls had been selected to train as Paraguay's first rural home supervisors. All spoke *Guarani* (the native Indian tongue), and had extensive practical experience in the home or in the field of teaching; each of them was a skilled horsewoman, since many borrowers live in country traversable only on horseback.

SCHOOL FOR SUPERVISORAS

By January 1947 the theoretical and practical courses designed to equip the *supervisora* to meet the needs and desires of the rural families of her territory were completed, and each was allotted a farm home for actual field practice. At the end of a month, improvement programs for 34 farm homes had been put into operation and three girls clubs, similar to 4-H clubs, had been organized. (Since that time 8 more clubs with an average membership of 25 girls have been started and all 11 are now functioning in Paraguayan districts.)

Sra. de González wearing a dress made with the assistance of a rural home supervisor proudly exhibits her new furniture and freshly painted dining room (formerly a dirty catch-all storage corner.) Note the sign on the wall "Flies transmit many diseases....Kill all flies."

On February 1, the day before graduation for the girls, a tour of these farm homes was made by Government officials and others, who found that the standard of living in these 34 homes had been raised to an almost unbelievable level in the course of a few weeks. Spontaneous remarks made by the various cooperating farmers and their wives expressed complete satisfaction with the program and with their new way of life. Several stated that it was clear that the North Americans were not "foreign devils" who had come to take away their farms and homes, as they had often been told.

The attitude of the officials making the tour can be summed up in the statement of the President of the Board of Directors of Supervised

Credit: "What we have seen today surpasses even our most optimistic hopes for the rural home economics program. I knew that they had accomplished considerable, but again, what we have observed today, goes far beyond anything we were able to visualize."

In July Mrs. Josefa Bursian Hardin, STICA's director of the *supervisoras* program, was presented the Medal of "*Honor al Merito*" by the Paraguayan Government for her work in training these girls who now form the nucleus of a home improvement effort which may be a compelling force in lifting the nation's standard of living.

CATTLE DEVELOPMENT

Although probably more meat is consumed per capita in Paraguay than in any other country of the world and while it is well known that the cattle industry constitutes its largest source of revenue, methods of cattle breeding and care have undergone little if any modernization there during this century. Consequently one of STICA's major efforts has been devoted to helping livestock owners adopt new techniques in this field.

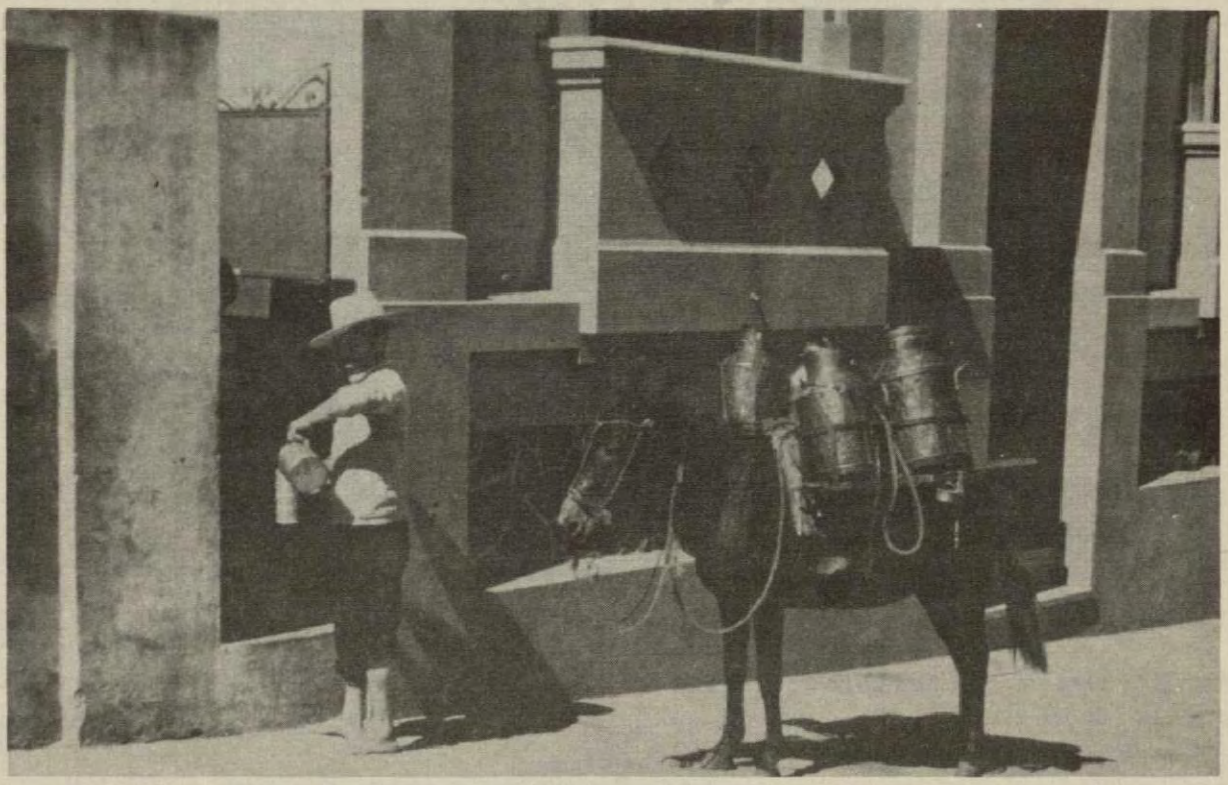
RANCH

At *Estancia Barrerito*--a 27,00-acre ranch with approximately 6,000 head of cattle which is owned by the Government of Paraguay in the southern Misiones region--STICA conducts a visual demonstration in livestock breeding and pasture management designed chiefly to help the country's larger ranch owners. In May 1947 a five-year breeding program at the ranch was inaugurated with the importation of Zebu bulls for crossing with Angus and *criollo* cattle to develop a better local beef breed; sale of cattle raised here to farmers for improving their stocks keeps the ranch on a self-sustaining basis financially and makes possible the establishment of numerous improvements to demonstrate modern pasture management. These include facilities and planting of forage crops.

MODEL FARM AND DAIRY

Smaller cattle owners and farmers have been encouraged to adopt modern practices through demonstrations at the San Lorenzo model farm and dairy established by STICA in 1943 on property belonging to ENAME, the nation's secondary agricultural school. Organized to supply milk, dairy products and pork to the school and to the Asunción market, the dairy farm has facilities for 100 cows while the pasteurization plant has a capacity of 2000 liters of milk a day, sufficient to make effective contribution to the local market but not large enough to be a completely self-sustaining enterprise. A unique institution in Paraguay, the dairy supplies the only bottled pasteurized milk in the country, besides serving as an educational center for dairymen in the Asunción area. Offspring of the dairy's cattle--which are imported Holstein--are sold to Paraguayan

Prior to the establishment of the STICA dairy and pasteurization plant, only raw milk well-diluted and peddled from door to door, was available in Paraguay's capital city.



farmers who will promise to follow the feeding system proven best by STICA and who will maintain milk production in accordance with dairy standards. These farmers are also encouraged to plant in their pastures the grasses which have proven most successful on STICA's farm.

Recently the cultivation of row-crops at the farm has been abandoned in favor of laying out all cultivated land in pastures. This will enable the dairy farm to function as an economical self-supporting unit.

BREEDING SERVICE

The past year has seen the development by STICA of a new service for cattlemen in the Asunción area--the *Puestos de Monta* or Bull Ring project, under which superior bulls for breeding are made available to all cooperating farmers. In April the first *puesto* was installed at the San Lorenzo model farm, which is used as a base for the project's operations and to which more than 100 bulls and heifers imported for the Service have been brought for immunization. Since cessation of the Civil War it has been possible to establish additional *puestos* until there are now 10 such service centers throughout the area. At each center one or

One of the more than 100 head of livestock imported by STICA in Paraguay for the *Puestos de Monta* project through which superior bulls for breeding are made available to cooperating farmers.

two dairy farmers of experience were chosen to arrange administration of the services of the bull for the neighborhood.

In connection with establishment of these centers it has been possible to introduce new techniques for dairy sanitation. First the farm to be used as a *puesto* station was cleaned and its cattle tested for tuberculosis, aphthons fever and other ailments. Then neighboring dairy herds were checked so as to have 50 to 70 sound cows for each bull designated for service in a particular district. Within 76 working days one veterinarian, accompanied by a field and a laboratory assistant, cleared 993 animals for 49 such districts.

Additional aids offered by STICA in its cattle development projects include the preparation at the Model Farm of balanced feed for milch cows, the sale of immunized cows and heifers, and the services of an itinerant veterinary technician.

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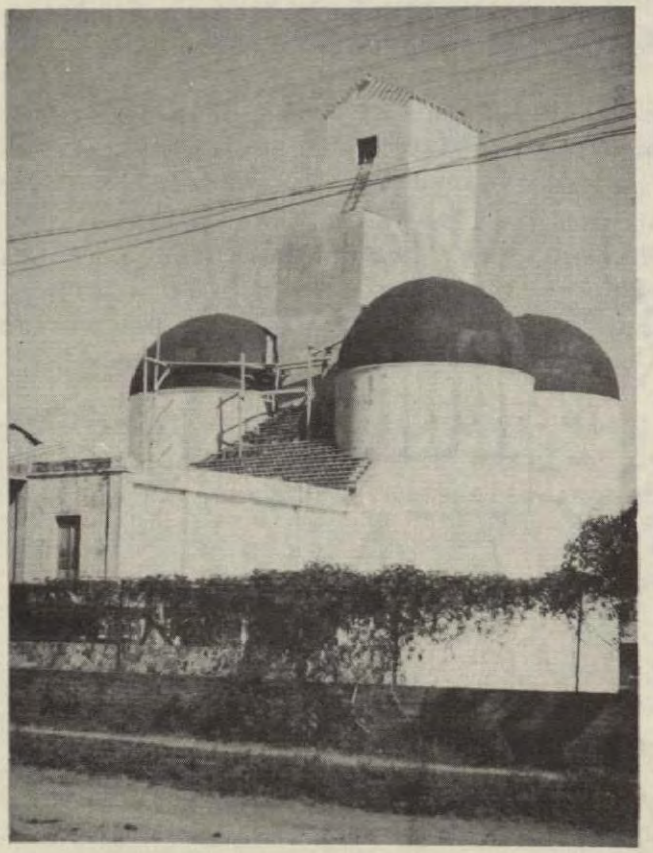
COMPLEMENTARY PROJECTS

Early in the development of STICA's program of agricultural aid it became apparent that certain projects were needed to complement those designed to help Paraguay's farmers directly:

STORAGE

Adequate marketing and storage facilities were lacking to insure proper use of the farmers' produce. In a survey undertaken in 1943 by STICA at the request of the Ministry of Agriculture it was revealed that absence of means for storage and refrigeration cost sub-tropical Paraguay thousands of dollars annually in damage by insects and climate and was one of the nation's important agricultural problems. STICA thereupon recommended the construction of grain elevators in major grain-producing areas and a 2500-ton cold storage plant and market in Asunción, and a contract was let to a U. S. firm. The work on grain elevators located in Asunción, Villarica, Encarnación and Paraguarí, and on the storage plant and market is almost completed. Shortages of materials and labor difficulties have slowed down construction to a great extent, but it is hoped that these buildings can all be finished within the coming months so that a year-round supply of perishable and semi-perishable food commodities can be insured, thus eliminating waste in marketing, improving quality of produce, and contributing to stabilization of prices.



To help overcome the lack of adequate storage and marketing facilities, STICA has undertaken the construction of elevators in major gain-producing areas and a cold storage plant and market at Asunción.

SURVEYS

The almost complete lack of authentic statistics regarding Paraguay's geography and the mode of living of its people which existed when STICA began to work, made accurate diagnosis of its agricultural programs impossible. Project plans had to be based on obvious impressions and deductions rather than on a scientific appraisal. In an attempt to secure accurate facts to be used as a basis for program planning, STICA has conducted a number of significant surveys for the Paraguayan Government.

FARM CENSUS. - An agricultural census, the first ever taken in Paraguay, was completed in 1947 by STICA's staff and is now being prepared for printing with the assistance of the U. S. Census Bureau and the Inter-American Statistical Institute. Presenting an overall picture of Paraguay's farms, how they are operated and what they produce, this census is of help to officials planning the hemispheric census scheduled for 1950.

During the first year's work on the survey, more than 100,000 small isolated farms were visited by a mobile corps of 1,135 census takers trained by STICA. During the following three years a staff of skilled workers with the aid of IBM machines compiled and summarized the vast amount of data collected. In order that the public might be informed of the progress of the census, agricultural statistics were released to the press by departments as it was compiled.

SOILS. - In the final stages of completion is a survey of main Paraguay soil types. Information obtained will provide the basis for a soil classification map showing Paraguay's significant soil characteristics, important vegetative types, principal adaptable crops, and a list of minimum practices necessary for soil and water conservation and increased crop production. Through the cooperation of the United States Army Air Corps, staff members working on the survey were flown over inaccessible parts of the Chaco areas and those regions just east of the *Rio Paraguay* to obtain data which would have taken a party of soil surveyors at least four years to complete.

FORESTS. - Even though the forests of Paraguay have been exploited for several centuries, wooded areas still cover nearly half the entire area of the country. In an effort to assist Paraguay in planning the orderly development of its forestry industries, STICA completed a study of the forest resources of each department and district of the country. This includes information concerning the several forest zones, the total amount of timber available, the degree and manner in which the zones have been exploited, saw-mill facilities, cost of producing sawn lumber and other pertinent data. The report of this survey has been published as one of the Division's Special Reports. An additional discussion of Paraguay's forest products has also been printed as one of a series of STICA commodity reports, which include pamphlets on hides and leathers, sugar cane, coco oil, and vegetable oils.

FOOD CONSUMPTION. - In order that more accurate plans could be made for the production of Paraguay's food requirements, it was decided early in STICA's program to conduct a food consumption survey for the purpose of collecting data on the types and quantities of food eaten and the nature of the dietary deficiencies in the country. Under the direction of a nutrition economist from the United States and with the aid of four Paraguayan women assistants, statistics were acquired over a period of two years and were then compiled and analyzed for issuance as a Special Report of the Food Supply Division.

MEDICINAL AND AROMATIC PLANTS. - Among the serious difficulties which confront Paraguayan economy is the high cost of transporting its products,

due to the land-locked condition of the country. It is evident that permanent benefit would be derived from the establishment of a basic industry with an exportable product, the volume of which might be small and therefore suitable for air transport, but of high unit value. For this reason STICA has for some time been conducting an investigation of the commercial possibilities of various plants indigenous to Paraguay which yield essential oils and of the prospects of introducing other such plants there.

Among these plants with which experiments have been conducted at the Institute and on several plantations near Asunción are lemon grass, mint, *patchouli*, caraway, and vanilla. One of the most promising is a small

Credit farmers watch a peanut thresher demonstration at the National Institute of Agronomy at Caacupé, Paraguay.

plant yielding vegetable saccharine which lacks the undesirable characteristics of the coal-tar derivative. Another outstanding plant, known as *Capii Cedron*, has an essence of excellent quality that has aroused the

STICA's future task is to strive for widespread acceptance of its teachings and integration of its modern techniques into the Paraguayan economy.

interest of New York perfumers and may well provide a new source of revenue for Paraguayan farmers.

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By means of action projects such as these in the fields of extension and crop development, home improvement and cattle development, storage and vital surveys, STICA has for five years demonstrated and offered training in the advanced techniques which must be employed to increase Paraguay's agricultural production and improve her standard of living. More important than the physical changes wrought as a result of this program--the dairy and pastures of San Lorenzo; the fences and corrals at Barrerito, the gleaming *Instituto* buildings and terraced plots; the white-washed, windowed farm homes or Colony houses; domestic work centers and credit offices--are the ideas STICA has spread in its contacts with farmers and other young people. It has tried to teach new methods of approach to old problems, the value of "learning by doing," and the fact that the practical skills acquired in working with one's hands--while not superior to book knowledge--are indispensable complements to it. In its classes for rural credit supervisors and home improvement *supervisoras*, in its scholarships granting U. S. study for 5 Paraguayans, and in its contacts with the men in the fields, it has tried to emphasize the need for and to train responsible, enlightened and experienced Paraguayan leaders who will be available to carry forward STICA's objective after U. S. technicians withdraw--the building of the agricultural economy Paraguay needs and can support.

TRAINING

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This is the story of STICA's past progress, which has laid the foundations for its future opportunities. As Dr. Carl Taylor said: "STICA now has a standing and experience which should guarantee many times greater progress in the next than in the past five years." Basic surveys have been made, and the rehabilitation credit system has been established to serve as a framework which can be expanded to reach every Paraguayan farmer, making available new methods and equipment. The coming years should see widespread acceptance of its teachings and integration of its techniques into the Paraguayan economy until that nation too can become an important producer and consumer in tomorrow's world.

STICA's FUTURE

Peru

In Peru the Institute's agricultural development work dates back to May 1943 when an agreement was signed between the Government of Peru and the Institute establishing the Servicio Cooperativo Inter-Americano de Producción de Alimentos (SCIPA). A dependency of the Peruvian Ministry of Agriculture headed by John R. Neale, Chief of Field Party for the Food Supply Division, SCIPA's objective has been to bring about an increase in the production of foodstuffs needed for local use while laying the foundation for long-range agricultural improvement. Toward this end the United States made an initial cash contribution of $162,977 against an equal amount in cash, *property or services* by Peru.

Terms of subsequent extensions of the basic agreement are indicative of the wholehearted endorsement of SCIPA by the Peruvian people as well as the integration of program operations into the permanent structure of the Government. Each year the proportion of project funds contributed by Peru has increased: Under the terms of the present contract, Peru's cash contribution of $450,000 is six times as great as that of the Institute. In addition, during 1946 and 1947 other cash contributions of $489,478 were made by Peru (as of record November 30, 1947).

EMERGENCY NEEDS

While long-range planning has been the keynote of Food Supply Division operations in Peru, the necessity for assuring adequate food supplies in strategic areas during the war prompted the direct operation by the Institute of food production projects for the U. S. Armed Forces at Talara and for rubber workers in the jungle region of Iquitos. The Institute made $50,000 available for these projects which were in addition to those provided for in the basic agreement. By February 1946 both projects had been terminated and the farms developed by the Institute for this purpose were transferred to the Peruvian Army Command.

LONG-TERM IMPROVEMENTS

While these emergency projects were getting underway, a country-wide agricultural development program was initiated by SCIPA. Its principal achievement has been the creation and expansion of an agricultural extension service capable of carrying improved practices to all parts of the Republic through the agency of young Peruvian agriculturists, selected and trained by SCIPA for this work. By means of lectures, discussion meetings, field demonstrations and visits to individual farms, agents assist thousands of farmers to secure, care for, and use needed equipment; to practice advanced methods of soil conservation, irrigation, crop production, and disease and insect control; and to improve livestock breeding, management, and feeding techniques.

EXTENSION SERVICE

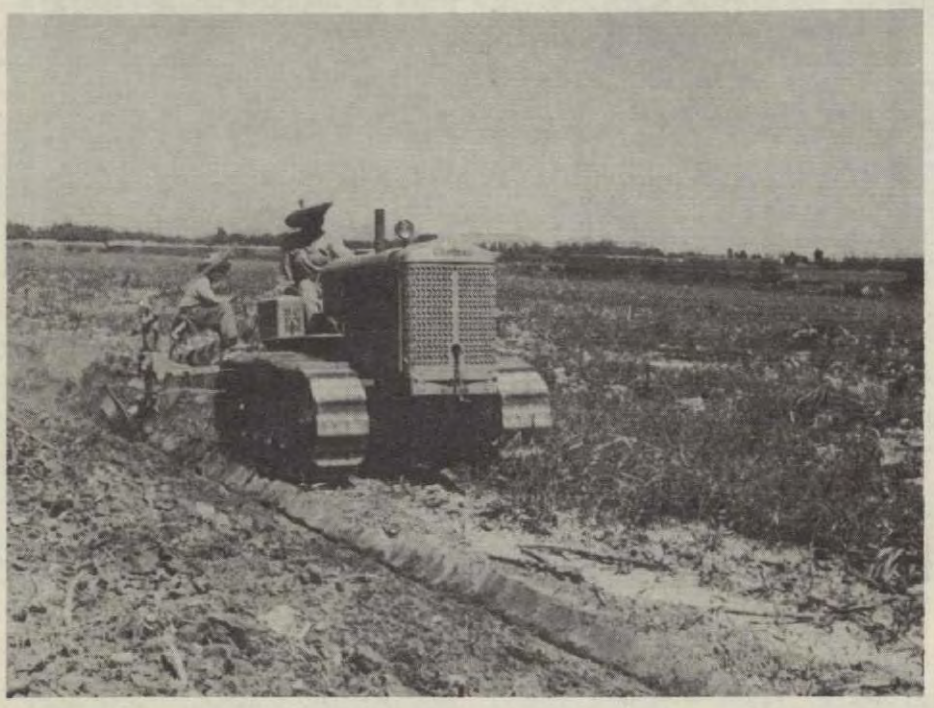

Río Amazonas
Iquitos
Río Marañón
Río Ucayali
Río Huallaga
Tumbes
Talara
Sullana
Piura
Chiclayo
Cajamarca
Pacasmayo
Trujillo
Pucallpa
Chimbote
Tingo María
Huaraz
Casma
Huánuco
Pativilca
Cerro de Pasco
Carhuamayo
San Ramón
Huacho
Sayán
Tarma
Canta
Oroya
Callao
Jauja
LIMA
Huancayo
Huancavelica
Cañete
Ayacucho
Cusco
Chincha
Abancay
Ica
Sicuani
Puno
Camaná
Arequipa
Moquegua
Tacna
PERU

Agents of SCIPA's country-wide extension service help farmers to practice improved methods of crop production. Heretofore, even the common garden hoe was seldom used in Peru.

To date 31 extension offices and several sub-stations have been established in key production centers throughout Peru. This system of organization permits the central office in Lima to coordinate the activities of the field agents in keeping with general objectives of the overall program and yet remains sufficiently elastic to allow the agent to adapt SCIPA policies to the needs of his particular area. Public response to the extension service is typified by the observation of one of the 13,558 farmers visited during the past two years. Although originally skeptical of its benefits, he volunteered that under the SCIPA program he had come in contact for the first time with *ingenieros agronomos* who were not adverse to working in the fields to put across a new cropping technique.

FACILITIES FOR AGRICULTURISTS. - Food crop production in Peru is conducted, practically speaking, without the use of modern equipment. To teach the value of their use SCIPA purchased and imported essential farm tools and supplies difficult to obtain during the war and distributed them at cost wherever they were unavailable to farmers at reasonable prices and from normal sources. After the war's end SCIPA shifted emphasis in this project to the establishment of cooperative machinery pools. The purpose of these pools is to make modern machinery accessible to small farmers who could not otherwise afford the use of mechanized equipment essential to low-cost production, and to demonstrate the advantages of mechanization to those who have not yet adopted such methods.

MACHINERY INTRODUCTION



Cooperative machinery pools operated by SCIPA extension agents bring mechanized equipment within the range of Peru's small farmers.

As additional equipment has become available to SCIPA the three initial cooperative efforts at Huacho, Tacna and Santa have been expanded and new ones established. At the present time approximately a dozen are in operation throughout the country under the supervision of the field agents of the extension service. Despite the impetus to the project received from the recent transfer to SCIPA of all farm machinery belonging to the Ministry of Agriculture, the demand for equipment continues to ex-

ceed the supply and agents are hard-pressed to keep the machinery on hand in working order because of the scarcity of spare parts. Notwithstanding these handicaps, SCIPA is formulating plans for the eventual operation of at least one pool in every extension region. By July 1948 machines made available by SCIPA are expected to account for the cultivation of more than 250,000 acres.

SEED DISTRIBUTION

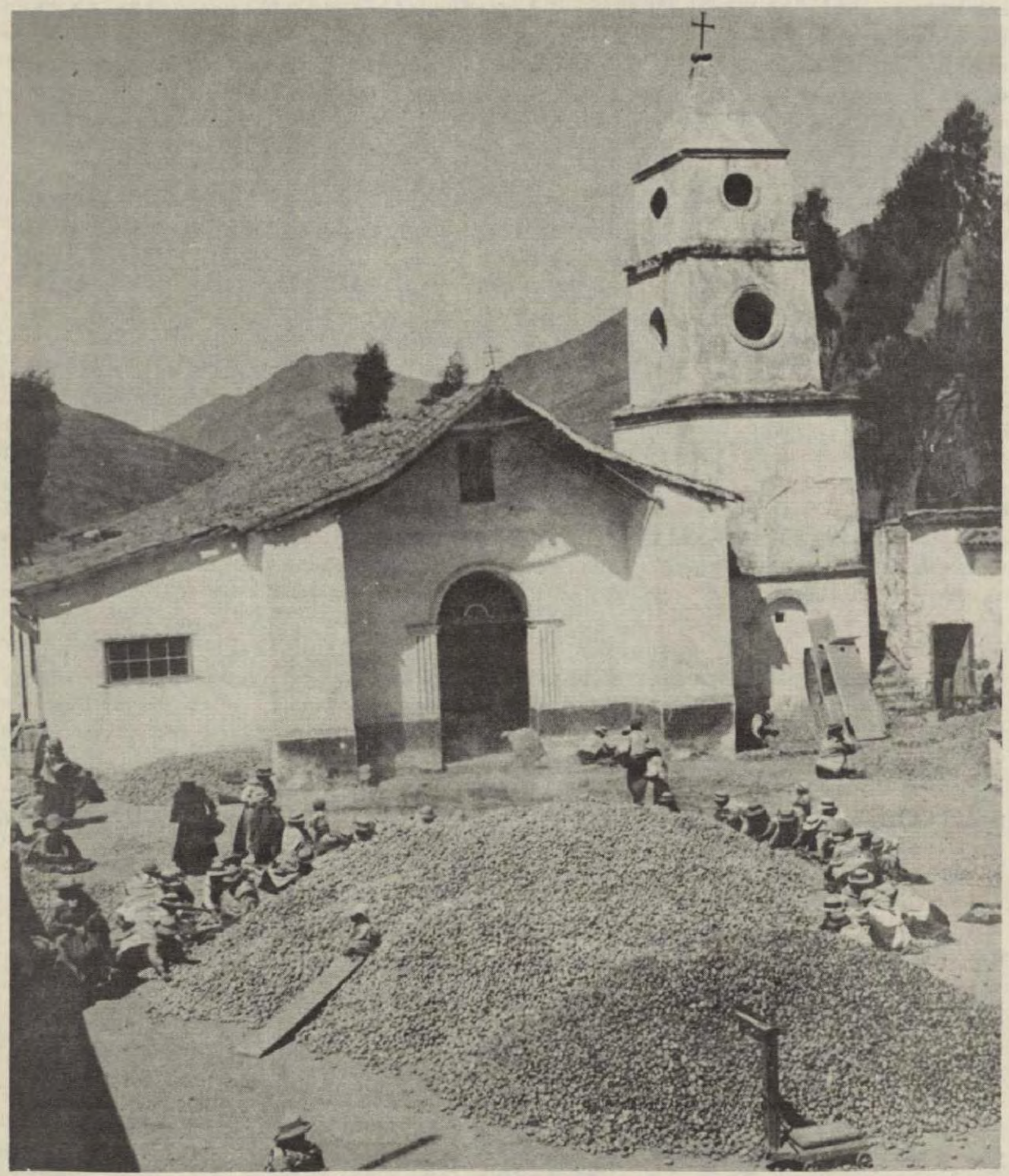
Because adequate quantities of viable seeds essential to food production are not yet available in Peru, SCIPA is continuing its seed and plant project begun during the war. By means of this project there have been purchased in the United States thousands of pounds of improved vegetable, field, and forage crop seeds not obtainable in Peru. Distribution has been made at cost to farmers through SCIPA's field offices. This year's record production of potatoes in the coastal area of Peru, particularly in the Canete Valley, may be attributed directly to SCIPA's seed distribution activities. In Canete, where potatoes had never been grown commercially, SCIPA extension agents followed up the distribution of 200 tons of selected seeds to farmers with planting and cultivation instruction. As a result, enough marketable potatoes were produced in this area to meet Lima's requirements for an entire month, or approximately 2,500 tons.

FRUIT PRODUCTION

To promote the fruit production industry and to encourage the growing of fruit for home consumption, SCIPA has made available needed insecticides, spraying and fumigating equipment to farmers under a wide program of technical assistance. According to SCIPA fruit specialists, results achieved this year are especially encouraging. Many nurseries and new plantations have been established while utilization of powerful spraying machines and improved insecticides has accounted for the restoration of fruit production in several regions where destruction by disease and insects was almost complete.

INSECT CONTROL

Because Peruvian farmers like those of other Latin American countries must wage ceaseless warfare against insect pests, the distribution of insecticides at cost is a vitally important SCIPA activity. In July alone this year SCIPA imported from the U. S. 30 tons of insecticides, principally DDT, to be used in preventing insect attacks on stored grain. Insect control demonstrations and the provision of technical assistance are important aspects of SCIPA's effort to preserve as well as to increase crop production in Peru. When farmers in the jungle region of Alto Ucayali complained last October of the lack of a local market for their bean crops, a SCIPA technician sent to investigate found



Potato harvest near Huancayo, Peru. Distribution of hundreds of tons of selected seed by SCIPA extension agents last year resulted in a record-breaking potato crop in the coastal area.

merchants reluctant to take a chance on the crop because of previous losses from weevil infestations. Because beans constitute an important element of the diet in this region where the annual production normally amounts to 300 tons, the merchants agreed to cooperate in a plan devised by the SCIPA agent which involves the application of 5 per cent DDT dust immediately after purchase of the freshly harvested beans.

LIVESTOCK DEVELOPMENT

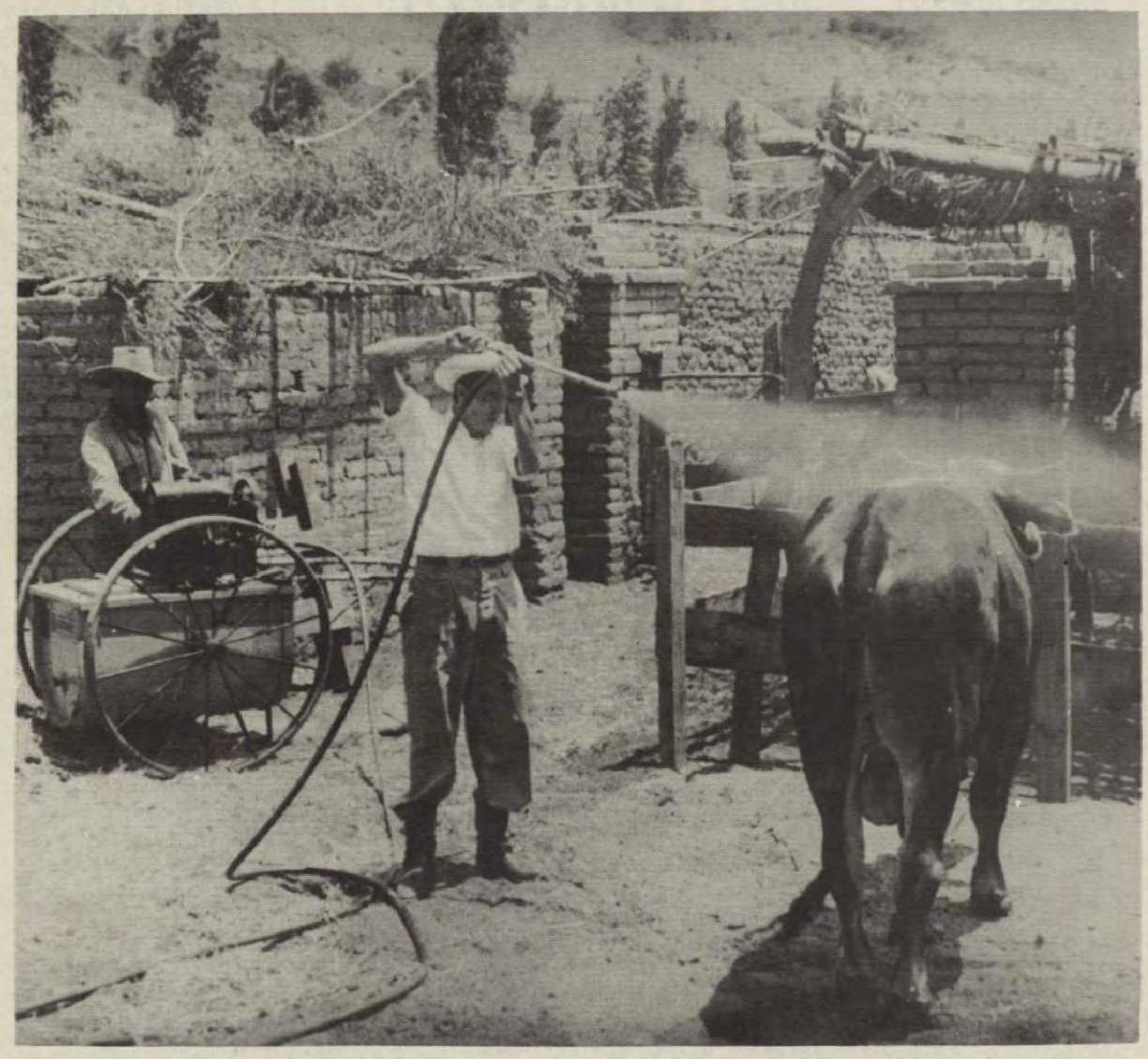
A general livestock project was undertaken, soon after SCIPA's establishment, in an effort to alleviate the shortage of meat in the coastal areas of Peru. Livestock quarantine stations were constructed at Arequipa, Callao, and Eten, the principal ports of entry for imported animals. The combined capacity of these stations makes it possible for more than a thousand head of cattle and numerous smaller livestock to be received in the country at one time.

To increase the supply of good breeding animals a calf-rearing and distribution project was initiated and several hundred registered cattle have been imported from the United States and sold to producers in every part of the country.

In the course of these livestock activities, which constitute a large portion of the overall food production program, extensive disease control work has been carried out by SCIPA in an effort to ameliorate to some

Quarantine stations constructed by SCIPA at Arequipa, Callao, and Eten protect Peruvian cattle against foot-and-mouth disease brought in by foreign imports.

degree the conditions resulting from prevalent animal diseases and to demonstrate activities that should be undertaken for their control. Research on animal parasites in Peru by an Institute veterinarian has brought about the development of a method for successfully immunizing livestock against anaplasmosis and piroplasmosis and contributed to the international field of knowledge on this subject. Similarly, introduction of hexachlorethane in bolus form for the control of liver flukes has resulted in tremendous savings to the country's sheep growers, who estimate that from five to ten million animals are infested with this disease in Peru.

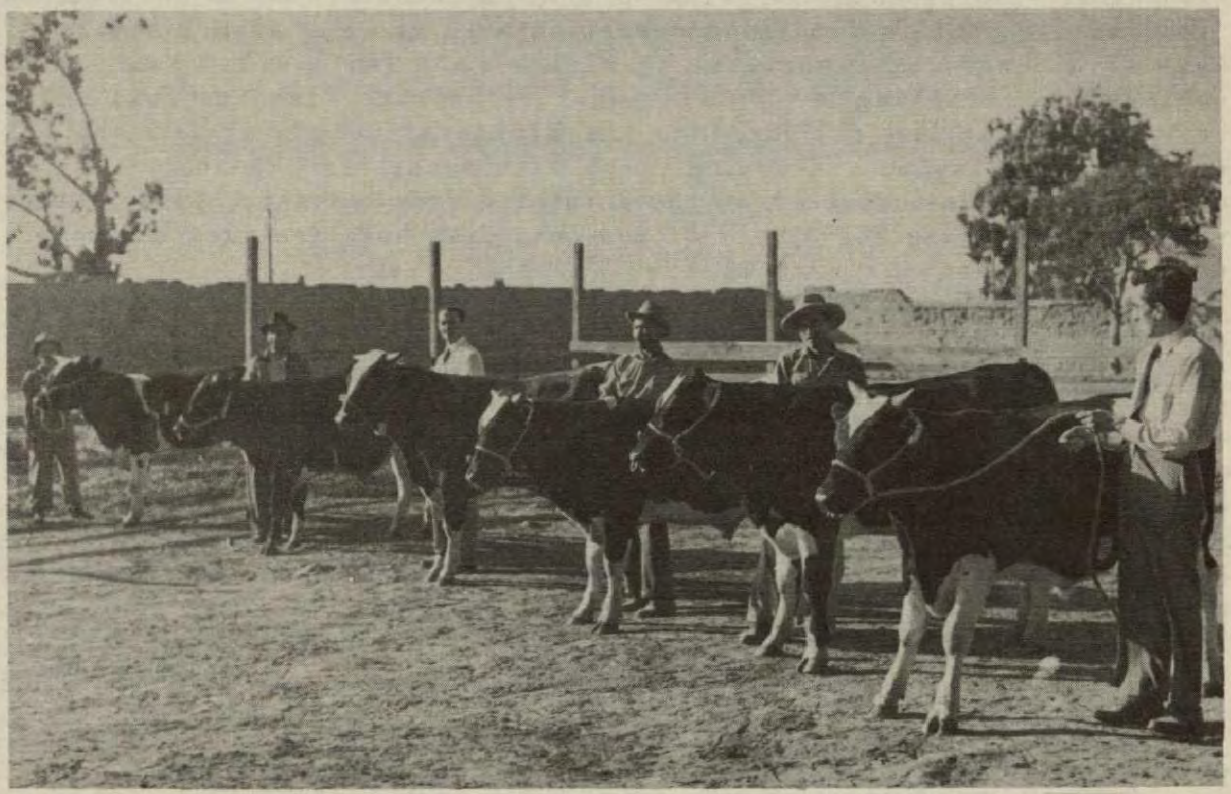


Control of livestock diseases is an important phase of the IIAA food production program in Peru.

Among SCIPA's other efforts to increase the production of meat, poultry, and dairy products are projects providing for the distribution of high-quality hogs for breeding purposes; the importation of pedigreed chickens for the Poultry Department of the Ministry of Agriculture; and the purchase of two mammoth continuous hatch incubators in the United States for use at La Molina and Lima. To date approximately 50,000 chicks have been imported by air from the U. S. to demonstrate the practicability of introducing new breeding stock in this manner. Losses have been amazingly small, due to the generous cooperation of U. S. poultry producers in expediting these semi-experimental shipments.

To stimulate sheep production, SCIPA has imported Hampshire and Suffolk rams for breeding with ewes from the Peruvian Sierra and is conducting a coastal demonstration of profitable sheep raising.

Within the limits of this general livestock project extension agents are also providing assistance to Peru's farmers in selecting and culling livestock, organizing breeding stations, and vaccinating animals against disease.



These Holstein bulls were among the cattle imported from the United States by SCIPA to improve Peruvian dairy herds.

HOME GARDENS. - In order to enlist the aid of the greatest number of people, consumers as well as farm producers, in increasing local supplies of fruits and vegetables, a Victory Garden project was inaugurated in November 1943. Under the auspices of this project, now known as the Home Garden Program, extension agents have distributed packages containing eight varieties of vegetable seeds to more than 100,000 families.

Since its beginning this project has been heartily endorsed by the people of Peru with the result that local supplies of vegetables have greatly increased and the food habits of thousands of persons have improved.

NUTRITION. - SCIPA's nutrition project was established for the purpose of investigating and developing background information for an organized home management and nutrition program among the agricultural population. It is expected that it will eventually grow to include an organized assistance service in these fields for families in the rural areas of the country. This work has been carried on through the extension service with publications, lectures, and demonstrations of improved methods of food selection and preparation.

FISHERIES. - To promote the Peruvian fishing industry, SCIPA initiated a fisheries project in 1943 in cooperation with the Peruvian Ministry of Agriculture and the Department of Fisheries. Two 30-foot bait boats equipped for catching and delivering live bait to fisherman off shore have been built and delivered to the Ministry along with ten smaller craft. At Callao an ice-making plant with machinery imported from the United States was installed at the unloading dock built by SCIPA. Other efforts to increase the supply of low-cost fish have included the repair of a patrol boat for coastal fishing, the construction of a 40-foot launch for the use of the Fisheries Department at Iquitos, and the remodelling of the *Mercado Modelo* refrigeration plant at Lima. In addition, SCIPA has made available to Peruvian fisherman during the three-year operation of the project a large supply of hooks and fishline.

STORAGE. - Another of SCIPA's efforts to encourage food production in Peru has been the development of a warehousing system throughout the nation to eliminate spoilage and to avoid seasonal fluctuations in supply. On the basis of background studies made by Institute technicians, three modern warehouses having a storage capacity of almost 10,000 tons have been built at La Oroya, Pacasmayo, and Sullana. Repairs to four storage houses with a similar capacity have also been made at Ica, Huacho, Chincha and Pimentel.

Last year at the request of the Peruvian Government SCIPA undertook the construction of a series of six potato warehouses in the important Sierra

To eliminate spoilage and to avoid fluctuations in supply, SCIPA has developed a national warehousing system.

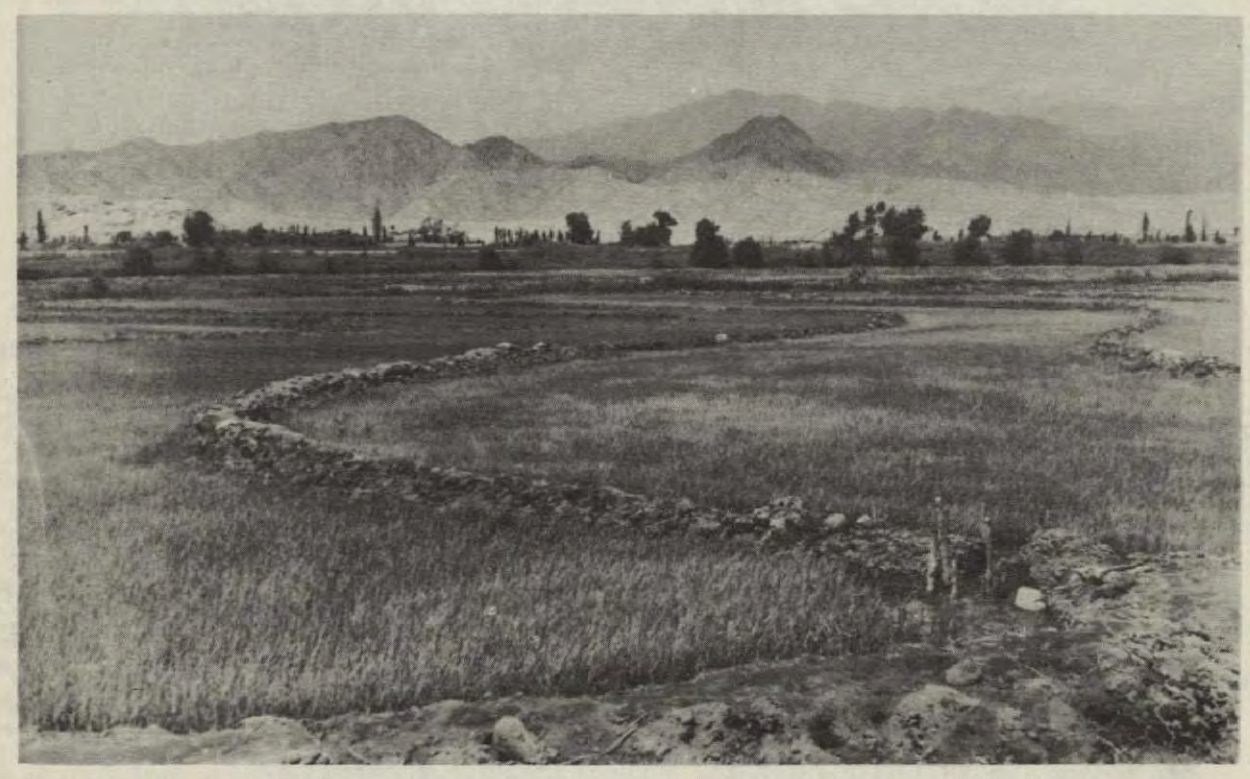
potato-growing area. These warehouses, which have an individual capacity of 500 to 600 tons, complement the La Oroya warehouse built in 1944 by SCIPA and provide a regulated flow of potatoes to Lima. Funds for their construction were covered by a special contribution from the Peruvian Government of approximately $54,000. Such contributions, which are over and above the contractual obligations of the Peruvian Government, are indicative of the degree to which the Republic has participated in the development of the cooperative food production program.

LAND IMPROVEMENT AND ENGINEERING. - Along the coast of Peru where the tillable lands have been cropped continuously for many generations, soils have become depleted and erosion is widespread. To help with this problem SCIPA has made available the services of specialists to provide technical assistance in improving land use through the repair and construction of irrigation systems, the application of proper fertilizers, and improved methods of soil conservation.

General engineering construction services are also provided by staff members; these include the designing of agricultural structures as well as the carrying out of all SCIPA building projects.

Because of the interest of the Peruvian Government in planning the expansion of land in cultivation on the coastal plain through irrigation and

reclamation projects, SCIPA will intensify its development of land rehabilitation and water-use projects in 1948. A well-organized program for the rehabilitation of existing irrigation facilities should, according to recent surveys, increase the unit production on at least 50 per cent of the irrigated coastal lands and redeem an estimated 10 to 20 per cent of formerly cropped areas which are now useless.



At Huacho, Peru the SCIPA rural agent conducts experiments with contour dikes in rice growing.

ECONOMIC STUDIES AND ANALYSES. - To provide factual orientation for all SCIPA's agricultural development work, extensive economic surveys are made by SCIPA technicians of food production and consumption in Peru. Among the reports of this type already completed are an analysis of national wheat production and consumption, a study of the cost of beef production in the Lima area, and a general survey of the overall food situation. At the request of the Ministry of Agriculture members of the economic staff are also conducting a marketing survey as a basis for improving the present methods of grading, packing, storing, and transporting agricultural products. The services of various U. S. specialists have also been made available to the Peruvian Government through SCIPA to aid in setting up a system of agricultural statistics and crop reporting, in modernizing the marketing of livestock products, and in solving the country's acute milling and baking problems.

MOTION PICTURES

In an effort to provide its field staff technicians with the most modern tools available for stimulating an interest in agricultural and health problems, The Institute of Inter-American Affairs has had prepared for distribution a series of one-reel, 16-millimeter color films with sound tracks in English, Spanish and Portuguese. While especially designed for use in the Institute's inter-American cooperative action programs, these motion pictures are adaptable for showing in many areas of the world where agricultural and health practices have not progressed sufficiently to permit a satisfactory level of living, and can be secured from the Institute at a price of about $45 per film to cover printing and distribution costs.

LIVE ACTION FILMS

Eight of these films, produced for the Food Supply Division by Jack Chertok of the Apex Film Corporation, are live-action movies designed to create an interest in various forms of agricultural development and improvement. Basically non-technical awareness pictures, they are intended for showing in areas where farmers have received very little education. Although possessing teaching value, they do not provide detailed instructions. Rather their purpose is to awaken the farmer to a realization of the existence of certain conditions which rob his land of its potential productivity, reduce his income, and threaten his health--the task of showing him how to effect the improvements necessary to overcome these problems lies with the local agricultural organizations in his country. If through these pictures interest and concern can be aroused for the agricultural problems facing farmers throughout the world, the task of extension agents, agricultural teachers and rural leaders will be made easier.

Following are the titles and a brief note on the subject matter of each of these agricultural films:

(1) BETTER EATING encourages the use of idle land around the rural home for raising fruits and vegetables for home consumption. Simple gardening methods are demonstrated. As the picture concludes, the narrator remarks: "All this out of a piece of land that had been going to waste--breeding the flies and mosquitoes that bring disease and discomfort--a piece of land that Nature intended for much better than this . . . . Out of that land came this garden. Out of that garden, this health . . . ."

(2) YOUR SOIL--YOUR FUTURE is concerned with soil conservation. The theme is that loss of topsoil can dangerously affect oncoming generations on your farm. Stressed is the fact that there are numerous things any farmer can do to halt or prevent erosion. The narrator states: "See how wisely this farmer has done his plowing. Instead of providing runways for the water, the furrows act as traps, and hold the water back . . . . The rain soaks down to the thirsty roots. It doesn't race to the bottom of the hill, washing out crops and topsoil as it goes!"

(3) THE LAND MUST EAT has this underlying idea: Put plant food back into the soil; depleted soil grows poor crops. A sequel to YOUR SOIL--YOUR FUTURE, the emphasis is on increased use of barnyard manure, compost, green manure crops, and crop rotation. The script reads: "The wise farmer will spread fertilizer around the trees--he'll dig it into sandy ground to hold the soil particles together and he'll dig it into heavy clay soil to spread the particles and allow air and water to enter. You see, he doesn't only take from the earth....he gives back and improves it."

(4) INSECT ENEMIES portrays in a simple way the fact that insects decrease yields of food but can be controlled by practical measures available to any farmer. The narrator warns: "These are good foods, and people need them. There's not enough food for everybody in this world. There will never be so much that we can afford to give part of it away to insects."

(5) BETTER FARMING-MORE MILK recognizes that there is an insufficient supply of good milk on the small farms for immediate local use. The film is directed at the small farmer with half a dozen cows or less. It encourages cleanliness, insect control, and supplemental feeding through feed storage and improved pastures.

(6) EXTRA FEEDING PAYS emphasizes what should be an obvious truth--that to be productive, animals must have enough to eat. It suggests that productivity can be extended by making feed available after the normal growing season. Irrigated pastures, irrigated forage, hay crops, and trench silos are shown, and use of lands that are too often idle is encouraged. The narrator recognizes that a motion picture alone is not enough when he says:

"You will need some local advice on how to build your first silo. There will be a neighbor farmer or a technician in the local government who can help you. The job is not difficult but take no chances on your first try. Get some help and take the first step toward saving that extra livestock feed."

(7) WATER ON THE LAND is an irrigation picture. It aims at building up interest in one of the greatest agricultural needs in Latin America. Omitted is reference to the fact that irrigation development is hampered by archaic water laws and land ownership policies, and that large-scale irrigation development requires coordinated public or private action. It was considered sufficient in this effort merely to create interest in the value of irrigation itself. Simple irrigation methods are demonstrated.

(8) FROM SMALL BEGINNINGS is a film on improved tools. It encourages moderate progress in the use of improved farm tools and machinery. The narrator quotes Felipe, progressive farmer in the pictures, as stating: "There is always a better farm tool than the one I have, and it will do the work better, and soon pay for itself many times over."

ANIMATED CARTOON

The ninth of the Institute films produced for Food Supply technicians' use is a ten-minute motion picture created by Walt Disney Productions and entitled "Planning for Good Eating." In an effort to demonstrate why the usual diet of starchy foods is inadequate and should be supplemented by more fruits, meats and vegetables grown for home use, the film shows the transformation of "Careless Charlie" into "Careful Charlie." The former provides only corn and beans to his family who are weak and undernourished. "Careful Charlie," however, realizing the dangers of an inadequate diet, provides a variety of foods for his wife and children and they soon become strong and healthy. This too is an "awareness" film and humor is used to attract and hold the interest of the audience while food facts are presented in a general, rather than in a detailed, manner.

In October "Planning for Good Eating" was chosen by the Chicago Film Council for showing at the "Films of the World" Festival there as one of the best among documentary, informational and factual motion pictures produced throughout all countries. It was exhibited along with 8 other films in the "Biological Sciences" showing at the Surf Theater on October 18. Three other Disney films dealing with health problems are available for distribution, as are seven Chertok productions designed for use by

the Institute's Health and Sanitation Division or other agencies engaged in disease-control programs.

PRINTED FROM KODACHROME

"Careful Charlie" and his family become strong and healthy when they eat the right foods.

SPECIAL REPORTS

In order to make available the results of the work of Food Supply Division staffs to other U. S. citizens engaged in agricultural development either here in the States or in the foreign field, Special Reports are issued by the Washington office from time to time. Designed to supplement the Monthly Reports summarizing activities of all field staffs, these Special Reports provide an opportunity for individual technicians to record their observations in regard to specific problems in Central or South America. By facilitating the publication of such information while it is still fresh in the mind of the actual observer, it is the aim of the Division to avoid the often-repeated mistake of postponing the written history of operations until those best qualified to write it have departed.

TECHNICIAN WRITERS

The men and women who write these Special Reports are neither scientists nor authors in the purely academic sense. Rather they are agricultural technicians of the action type who have gained insight into the problems of the people of the other American Republics by working alongside them in their fields and in their homes, not by sitting behind desks or gathering data on file in the local Embassy or government offices. In a sense these agricultural advisors to foreign governments are trainees; they have learned by doing.

It is difficult to persuade the average agricultural technician to record his experiences and observations for publication. Yet the information acquired by him is often of such value that it should be made available to others. Admittedly some inaccuracies may exist in the resulting Special Reports, despite the fact that the data which they contain are the culmination of several years' careful experimentation or observation. But it is the Division's policy to issue the reports in much the same form in which they were originally prepared by the technicians in the field, in order to avoid the long delays and loss of inherent enthusiasm which usually result from exhaustive checking and rewriting.

Dr. Kenneth Kadow, in the Food Supply Division's first Special Report, *Fruits and Vegetables in Brazil,* states: "At the outset, I readily acknowledge a shortage of scientific documentation, the lack of which renders this report of limited value. Nevertheless, it is my conviction that the information presented.....will be of considerable interest to American scientists since many of the observations and experiences are recorded.....for the first time." That is the spirit in which the Special Report is written.

Up to the present time 13 Special Reports, in addition to Dr. Kadow's, have been issued by the Division. *Forest Conditions in Haiti* was written by Morton A. Klein, Forest Products Analyst, and summarizes the results of a reconnaisance survey of Haitian forests made to determine the feasibility of establishing a forestry program in that country. Land use, population pressure and other factors basic to Haiti's economic problems are discussed, as they are in greater detail in the stimulating report of Maurice Dartigue, former Minister of Agriculture in Haiti, entitled *An Economic Program for Haiti.*

Vance Rogers, for five years Chief of Party in Costa Rica, discusses a wartime food procurement program conducted by the Division in *Fruit and Vegetable Production in Costa Rica,* and in *Abaca, Cacao and the African Oil Palm in Costa Rica* he analyses recent attempts to develop crops suitable for production on abandoned banana lands.

A SPECIAL REPORT

Fruit and Vegetable Production in COSTA RICA

A wartime program aids future development

FRUITS and VEGETABLES in BRAZIL

A Special Report

INSTITUTE OF INTER-AMERICAN AFFAIRS

Food Supply

PARAGUAYAN RURAL LIFE

...Survey of Food Problems

A Special Report

Supply Division

An Economic Program for HAITI

A SPECIAL REPORT

THE INSTITUTE OF

AGRICULTURAL DEVELOPMENT IN VENEZUELA

A SPECIAL REPORT

THE INSTITUTE OF INTER-AMERICAN AFFAIRS

Food Supply Division

LIVESTOCK IN PERU

Including a description of SCIPA'S cattle import program

A Special Report

THE INSTITUTE OF INTER-AMERICAN AFFAIRS

Food Supply

Material for *The Agriculture of Panama: Present and Potential* was compiled by Thomas Maddock, Jr., Chief of Party for the Division during its three-year cooperative program there. In his Introduction Mr. Maddock states: "The program of the Ministry covering development and educational phases of agriculture began about four years ago and has been continually handicapped by wartime conditions. As a result, in Panama there are no dependable agricultural statistics, no soil surveys, insufficient rainfall records, and no well-documented plans for improvements in the agriculture of the country." The value of a comprehensive survey of the nation's agriculture by a trained agriculturist is apparent, but of particular interest are Mr. Maddock's suggestions concerning the future development of Panama's agricultural resources.

Three Years of Agricultural Experience in Honduras, a survey of the Institute's agricultural development program in that country from 1942 to 1945, was written by Ten Broeck Williamson, Agricultural Economist who served with the Food Supply Division's field staff in Honduras during most of that period.

The agricultural problems of Venezuela are discussed in three Special Reports: In *The Range Cattle Industry in Venezuela*, Huling Ussery, Range Management Specialist, records his observations regarding the place of range cattle in the meat production of that country. *The Lake Valencia Region in Venezuela* was prepared by Lyall Peterson, who served as Agricultural Economist for the Division in Paraguay and Venezuela. It is intended to serve as a guide in planning the future agricultural development of this fertile area in northern Venezuela. John Camp, former Chief of the Food Supply program in Venezuela, is the author of *Agricultural Development in Venezuela*. In this bulletin Mr. Camp analyzes the agricultural economy of this South American nation, describes the work of the U. S. - Venezuelan cooperative program, and suggests possible answers to some of the basic problems which Venezuela faces.

Paraguay is also the background for three Special Reports. *The Forest Resources of Paraguay* was written by Morton Klein, whose study of Haitian forests has already been mentioned. *Paraguayan Rural Life - A Survey of Food Problems* is based on a three-year survey by Emma Reh, Institute Nutritionist, made to determine the food habits of the people of Paraguay and the nature of their dietary deficiencies. Dr. R. Howard Porter, outstanding agronomist, has recorded the results of experiments conducted while serving as the Division's advisor to the National Institute of Agronomy in *Crop Development in Paraguay*, scheduled for publication in January.

Also planned for distribution early in 1948 is a Special Report on *Animal Disease Control Investigations in Peru* by V. D. Stauffer, Doctor of

Veterinary Medicine, who discusses specific phases of the Servicio's livestock development program which is described in more general terms in *Livestock in Peru,* a recently issued Report. Of special interest is Dr. J. A. Shellenberger's report on *The Milling and Baking Industries of Peru,* recording results of the two-months' survey made there for SCIPA by this well-known authority from Kansas State College.

From The United States[1/]
January 1948

COSTA RICA

Howard M. Gabbert — Chief of Party -- A.B. Geology, Stanford University, 1931. U. S. Department of Agriculture Soil Conservation Service, Pacific Coast Region, 1934-43; Soil Scientist, Food Supply Field Party, San Salvador, 1943; Assistant Chief of Party, Paraguay Food Program, 1944-47; Chief of Party, Costa Rica Food Program, July 1947.

William F. Litchfield — Business Manager -- Clerk, U. S. Engineers field offices in Illinois and Kentucky, 1934-43; Administrative Officer, Health and Sanitation Field Party, Institute of Inter-American Affairs, Bolivia, 1943-46; Administrative Cfficer, Health and Sanitation Field Party, Costa Rica, 1946-47.

Anne R. McMurray — Administrative Officer -- Clerk-stenographer, U. S. Geological Survey, Washington, D. C., 1933-37; Leave and Retirement Clerk, National Resources Planning Board, Washington, D. C., 1937-43; Head, Payroll Section, War Shipping Administration, Washington, D. C., May 1943-44; Head, Payroll Section, Institute of Inter-American Affairs, Washington, D. C., 1944-45; Auditor, IIAA, Washington, D. C., 1945-47.

Octavius J. Schofield — Chief, Technical Operations -- Graduate, Margate College, Kent, England. Chicle and mahogany development work, Mexico, 1912; Agricultural supervisor, United Fruit Company, Honduras, Jamaica, and Costa Rica, 1920-35, 1937-41; Chief technician, Institute of Inter-American Affairs Food Procurement Program in Costa Rica, 1942-46.

Emile Tejada — Agronomist -- B.S. Biological Sciences, New Mexico State College. County Agent, New Mexico Extension Service, 1934-42; Assistant Soil Conservationist and Assistant Head, Regional Training Section, Soil Conservation Service, Albuquerque, New Mexico, 1940-42; Agricultural Production Officer, Honduras Food Supply Program, 1944-45.

HAITI

W. Alan Laflin — Chief of Party -- B.S. Civil Engineering, University of California, 1927. Engineer, private industry, 1928-35;

1/ *Except O. J. Schofield who is a resident of Central America*

Assistant Engineer, National Parks Service, San Francisco, California, 1935; Hydraulic Engineer, El Paso and Elephant Butte Irrigation District, 1935-37; Engineer, U. S. Indian Service, Albuquerque, New Mexico, 1938-41; Engineer-at-large U. S. Indian Service, Los Angeles, California, 1941-42; Regional Irrigation Engineer, War Relocation Authority, San Francisco, California, 1942-43; In-charge, irrigation engineering, War Relocation Authority, Washington, D.C., 1943; Agricultural Engineer, Institute of Inter-American Affairs, Food Supply Party in Peru, 1943-47; Assistant Chief of Party, May-October 1947.

Antonio M. Colon — Agricultural Assistant -- B.S.A., College of Agriculture and Mechanical Arts, Mayaguez, Puerto Rico. District Supervisor, Puerto Rico Reconstruction Administration, Department of the Interior, Arecibo, Puerto Rico, 1940-41; Rural Rehabilitation Supervisor-Cooperative Specialist, Farm Security Administration, Puerto Rico, 1941-46.

Montgomery P. Copeland — Agricultural Program Officer -- A.B., Spanish, Friends University, Wichita, Kansas. Rubber Plantation Superintendent, Firestone Tire and Rubber Company, Liberia, West Africa, 1926-41; Supervisor, cryptostegia, rubber, and essential soils operations, SHADA (Societe Haitiano-Americaine de Developement Agricole), Bayeux, Haiti, 1941-44; Field and Office Manager, Haitian Agricultural Corporation, Caracol, Haiti, 1944-47.

William J. Dolan — Business Manager -- Statistical Record Clerk, U. S. Department of Agriculture, Wisconsin, 1934-40; Principal Clerk, Bureau of Agricultural Economics, Washington, D. C., 1940-42; Administrative Officer, Food Supply Division, Institute of Inter-American Affairs, Washington, D. C., 1942-44 and 1946-47.

James N. Leckie — Livestock Specialist -- B.S., University of Georgia; M.S., Dairy Nutrition and Management, University of Maryland. Head, Animal Husbandry Department, Abraham Baldwin Agricultural College, Tifton, Georgia, 1935-45; Livestock Specialist, Institute of Inter-American Affairs Food Program in Paraguay, 1945-47.

Bill Stowe — Agricultural Machinery Specialist - Lease Foreman, petroleum firms, Oklahoma, New Mexico and Texas; private contractor, Texas; Drilling foreman, U.S. Indian Service, Albuquerque, New Mexico, 1936-42; Superintendent of Irrigation, Colorado River, War Relocation Project, 1942-45; Construction Inspector, U.S. Bureau of Reclamation, Yuma, Arizona, 1945-47.

PARAGUAY

Albion W. Patterson — Chief of Party -- A.B., Spanish, Princeton University, 1927; Graduate work, University of Southern California, University of California, and Middlebury College; study abroad Costa Rica, Spain, France. Head, Romance Language Department, South Kent School, South Kent, Connecticut, 1927-39; Chief, Educational Section, Agricultural Marketing Administration programs in Western states, 1939-42; Food Distribution Technician and Agricultural Program Officer, Institute of Inter-American Affairs, Food Supply Program in Paraguay, 1942-45.

Luis Gattoni — Agronomist -- Graduate Agronomist, Universidad de Santiago, Chile. Regional Agronomist and Technical Assessor, Ecuadoran Government, 1931-33; Professor of Arboriculture and Horticulture, Universidad Central, Quito, Ecuador, 1934-39; Head, Servicio de Arboricultura, Ecuadoran Government, 1940; Director, Quinta Normal de Agricultura, Ambato, Ecuador, 1940-42; Agricultural Officer, El Oro Mission in Ecuador, 1942; Agronomist, Food Supply Field Party in Honduras, 1943-45.

Mrs. Josefa B. Hardin — Home Management Officer -- B.S., Home Economics, University of Puerto Rico. Nutrition, home demonstration, home management, and dietetics work with Insular Department of Health, Puerto Rico, 5 years; Agricultural Extension Service, Puerto Rico, 5 years; Farm Security Administration, Puerto Rico, 3 years; Home Economist, Food Supply Field Party in Venezuela, 1944-46.

Coel William Mills — Business Manager - Alumnus, George Washington University and National University School of Law, Washington, D. C. Congressional Secretary, 1923-36; Business Manager, Southeastern Forest Experiment Station, U. S. Forest Service, Asheville, North Carolina, 1937-47.

William B. Pace — Agricultural Marketing Specialist -- Graduate, Texas Agricultural and Mechanical College. Administrative Officer, U. S. Extension Service, Jonesboro, Arkansas, 1937-39; County Supervisor and Farm Management Specialist, Farm Security Administration, Arkansas, 1939-40; Manager, Meat Packing and Vegetable Canning Plant, Sugarland, Texas, 1940, 1945-46.

PERU

John R. Neale

Chief of Party -- B.S., Animal Husbandry and Agronomy, Kansas State Agricultural College. Dairy farm manager and cattle buyer, 1919-23; County agent, Wisconsin Extension Service, 1923-27; Animal Husbandman, University of Wyoming, 1927-35; Wyoming State Director, Farm Security Administration, 1935-41; Assistant Regional Director, FSA, Denver, Colorado, 1941-42; Animal Husbandry Specialist, Food Supply Field Party in Peru, 1943-44.

Edwin Lee Anderson

Tropical Agriculture Specialist (Advisor) -- Engineer and Colonia Manager, Soledad Sugar Company, Cienfuegos, Cuba, 1917-25; Executive Secretary, Sugar Trade Institute, Havana, Cuba, 1925-28; Assistant Manager, Sugar Estate, Dominican Republic, 1938-41; Agricultural Director, Refugee Colony, Dominican Republic, 1941-43; Agricultural advisor, W. R. Grace and Company, Lima, Peru, 1944-47.

Margaret J. Bazo

Administrative Assistant -- A.B., Nebraska State Teachers College; B.S., Library Service, University of Denver, Colorado; Latin-English instructor, Hay Springs, Nebraska; Public Library, Denver, Colorado, 1941; Library, University of Indiana, 1941-42; Librarian, War Relocation Authority, Heart Mountain, Wyoming, 1942-43.

August Bethke

Farm Machinery Demonstrator -- Agronomy major, Colorado A & M College. 15 years' farming experience in Colorado; Appointment to Food Supply staff in Peru November 1947.

Thomas H. Brittingham

Business Manager - Administrative positions with private firms in the middle west, 1920-36; U.S. Veterans Administration, Washington, D. C., 1936; Soil Conservation Service, 1936-39; Chief, Payroll & Leave Section, National Bituminous Coal Commission, 1939-41; Administrative Officer, War Department, Sandusky, Ohio and Morganfield, Kentucky; Administrative Service Officer, Office for Emergency Management, Detroit, Michigan, 1941; State Organization Officer, Office of Price Administration, Detroit, Michigan, 1941-43; Washington Office, Office of Price Administration, 1943; Business Manager, Federal Works Agency, Washington, D. C., 1943-45; Assistant Chief, Procurement and Supply Division, Foreign Economics Administration, 1945; Administrative Officer, Health & Sanitation Division, Institute of Inter-American Affairs, La Paz, Bolivia and Lima, Peru, December 1945-May 1946.

Field Personnel

Elisa F. Chinarro — Clerk-Stenographer (Translator) -- Universidad Mayor de San Marcos, Lima, Peru; Bennington College, Bennington, Vermont. Bi-lingual Secretary, Peruvian Commercial firms, 1928-41; Spanish Instructor, Miss Hall's School, Pittsfield, Massachusetts, 1941-43.

Otto L. Hubp — Agricultural Program Officer -- B.S., Kansas State Agricultural College. Dairy operator, Mexico, D. F., Mexico, 1919-41; Dairy Husbandry Specialist, Food Supply Party in Venezuela, 1943-46.

Ira Floyd Mattatall — Food Production Officer -- Dairy owner, East St. Louis, Illinois, 1910-17; coastal trader in Panama, 1920; 15 years' experience as operator of fruit, dairy, and hog farms in Panama and Chile; Appointment to present position July 1943.

Leonard H. Rhodes — Agricultural Economist -- M.S., Agricultural Economics, Purdue University; Secondary School Vocational Agriculture Instructor, 1930-33. Indiana State Land Use Planning Consultant, National Resources Board, 1934-36; Director, Flood Control work, Resettlement Administration, offices in Indianapolis, Indiana, Milwaukee, Wisconsin, and Dayton, Ohio; Regional representative, Bureau of Agricultural Economics, U. S. Department of Agriculture, Dayton, Ohio and Upper Darby, Pennsylvania, 1941-42; Economist, Office of Price Administration, Washington, D. C., 1942-46.

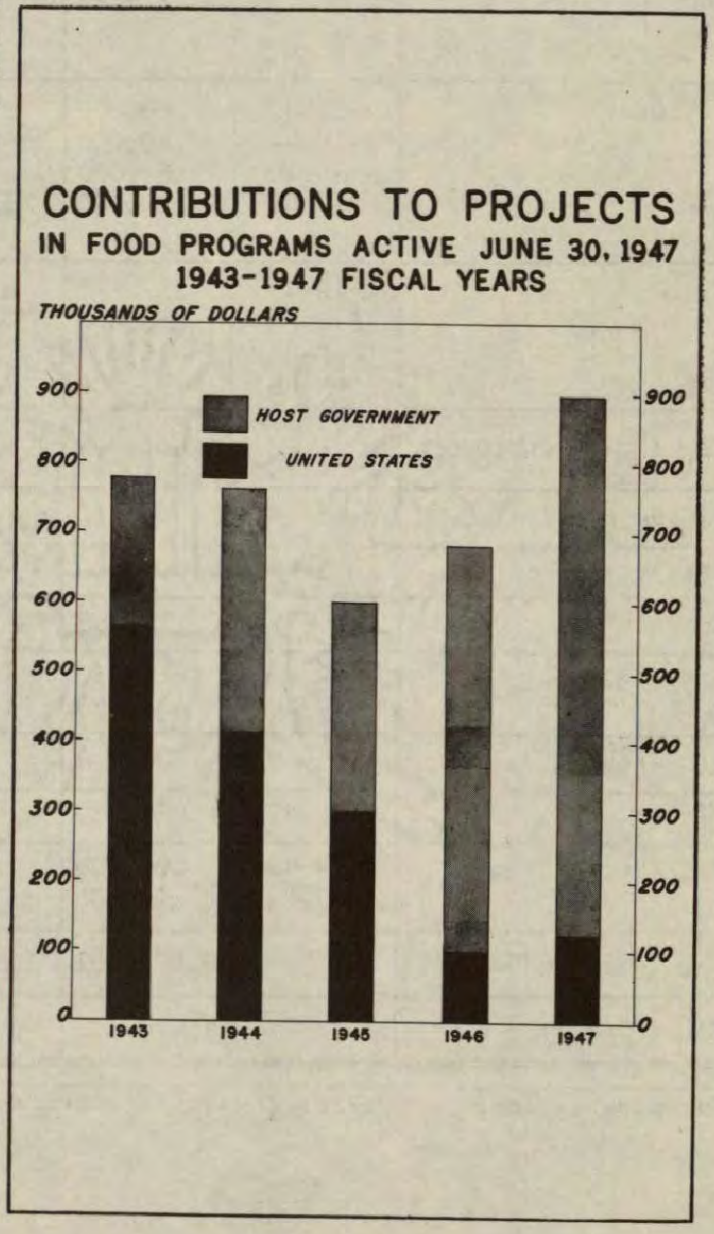
Raymond Russell — Agricultural Program Officer -- M. S., University of Delaware, 1931. Section Manager, Firestone Plantations Company, Liberia, West Africa, 1927-29; Plant Pathologist, University of Delaware, 1929-30; Research on fertilizer, sprays and plant diseases, University of Delaware, 1931-37; In charge, field work, General Chemical Company, Dover, Delaware, 1937-42; Senior Field Technician, Rubber Development Corporation, Lima, Peru, 1942-45.

Joel Thornton — Meat Packing Distribution Consultant -- Auditor, Office and Credit Manager, Armour and Company offices in Alabama, Mississippi, Michigan, and Wisconsin, 1912-1914; Vice President in charge of general operations and sales, Cuban branch Armour and Company, 1914-26; Secretary-Treasurer of meat packing firm, Smith-Richardson and Conroy, Inc., West Palm Beach, Florida, 1927-41; Chief, Meat Price Section, Office of Price Administration, Washington, D. C., 1941-42; Regional Chief, Food Price Section, OPA, Denver, Colorado and Atlanta, Georgia, 1941-43; National Food Trade Relations Representative, OPA, Washington, D. C., 1943-44; Regional Chief, Food Price Section, OPA, New York, New York, 1944-46.

On December 31, 1947 Dillon P. Myer succeeded Col. Arthur R. Harris as President of The Institute of Inter-American Affairs.

Financial Statement

The most interesting, and probably the most significant, characteristic of the Food Supply Division financial summary is the growth of contributions by participating countries. This has made possible a steady decline in United States' aid to project operations. For example, in the first agreement with Paraguay, December 31, 1942, the United States contributed $250,000 to Paraguay's $50,000. The last agreement, signed March 7, 1947, required $50,000 from the United States and $100,000 from Paraguay. The trend in Haiti and Peru has been similar. Costa Rica has made no contribution, although it is planned that $27,500 will be contributed for the first half of the 1948 fiscal year. Until recently the program in that country has been a unilateral operation by the Institute to increase fruit and vegetable production for the benefit of the U.S. armed forces in the Canal Zone. Consequently, the joint operation feature which characterizes the other operations is just now being developed in Costa Rica.



U.S. expenditures for operations in 1947 show a sharp decrease over those of 1946, owing to the cessation of programs in Venezuela and Panama near the end of the 1946 fiscal year, and to the assumption of a proportionately larger share of the project expenses by the host governments. Actual volume of activity in Costa Rica, Haiti, and Peru was at approximately the same level in both years. The program in Paraguay was not as active as formerly because of the war conditions which prevailed there for most of 1947.

A reduction in the Division's Washington administrative and supervisory expenses was possible in 1947 because of the termination of the operations in Venezuela and Panama.

U.S. and HOST COUNTRY CONTRIBUTIONS TO PROJECT OPERATIONS
Food Supply Division, IIAA
1942 to 1947

	CASH CONTRIBUTIONS				
	DATE OF AGREEMENT	IIAA	HOST COUNTRY	TOTAL	REMARKS
Active Programs		$	$	$	
COSTA RICA	10-15-42 3-8-44	151,000 11,000	- -	151,000 11,000	COSTA RICA TO CONTRIBUTE $27,500 FOR CONTINUATION TO JUNE 30, 1948
HAITI	8-28-44 7-20-45 12-27-46	125,000 50,000 50,000	50,000 50,000 175,000	175,000 100,000 225,000	CONTRIBUTIONS OF $41,203 BY HAITI IN ADDITION TO AGREEMENTS, AS OF 10/31/47.
PARAGUAY	12-31-42 2-18-44 2-25-46 3-7-47	250,000 250,000 50,000 50,000	50,000 50,000 75,000 100,000	300,000 300,000 125,000 150,000	CONTRIBUTIONS OF $65,708 BY PARAGUAY ABOVE AGREEMENTS, AS OF 10/31/47.
PERU	5-19-43 6-1-44 6-8-45 12-3-46	212,977* 150,000 75,000 75,000	162,977 300,000 150,000 450,000	375,954 450,000 225,000 525,000	CONTRIBUTIONS OF $489,478 BY PERU ABOVE AGREEMENTS, AS OF 11-30/47.
TOTAL ACTIVE PROGRAMS		1,499,977	1,612,977	3,112,954	
Inactive Programs					
BRAZIL	9-3-42	2,000,000	1,903,550	3,903,550	TERMINATED 8/20/45
EL SALVADOR	12-22-42	18,798	-	18,798	" 4/1/44
HONDURAS	3-4-43 5-17-44	158,250 39,430	- 39,430	158,250 78,860	" 6/30/45
NICARAGUA	5-20-43	32,928	-	32,928	" 1/15/44
PANAMA	11-20-42	84,930	-	84,930	" 3/31/46
VENEZUELA	5-14-43 5-17-44	500,000 90,395	500,000 90,395	1,000,000 180,790	" 5/14/46
TOTAL INACTIVE PROGRAMS		2,924,731	2,533,375	5,458,106	
GRAND TOTAL		4,424,708	4,146,352	8,571,060	

** Includes $50,000 for direct Institute operations not included in Agreement.*

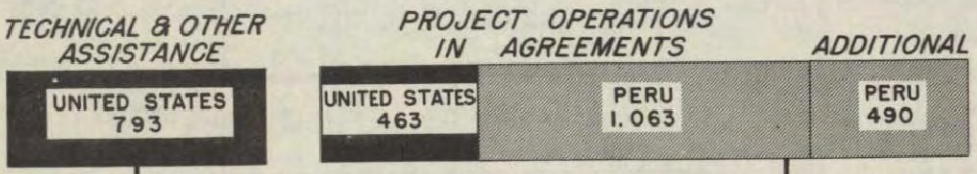
STATUS OF U.S. FUNDS AUTHORIZED FOR EXPENDITURE BY FOOD SUPPLY DIVISION

(Operations began July 1, 1942)

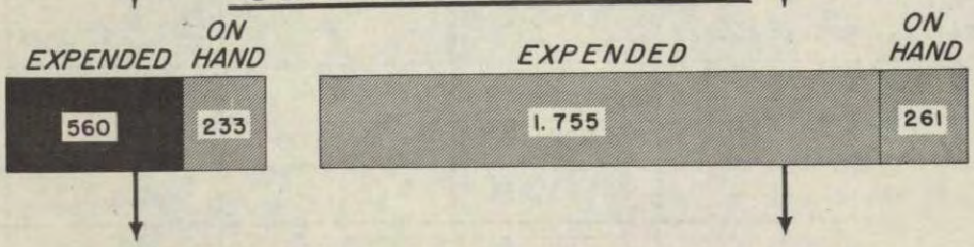
	FINANCIAL STATUS OF RECORD AS OF OCT. 31, 1947		EXPENDITURES*	
	FUNDS AUTHORIZED	EXPENDED	FISCAL YEAR 1947	FISCAL YEAR 1946
Program Expenses Technical & Other Assistance	$	$	$	$
COSTA RICA	712,063	595,820	104,642	104,956
HAITI	375,966	179,200	78,606	53,738
PARAGUAY	963,955	698,570	132,371	150,835
PERU	793,381	536,255	117,983	101,454
INACTIVE PROGRAMS	1,523,700	1,398,071	— 36,139	171,649
TOTAL	4,369,065	3,407,916	397,463	582,632
Project Expenses				
COSTA RICA	–	–	–	–
HAITI	225,000	190,000	33,150	65,000
PARAGUAY	600,000	571,779	50,202	28,795
PERU	512,977	438,809	56,865	51,238
INACTIVE PROGRAMS	2,924,731	2,897,481	— 11,702	186,607
TOTAL	4,262,708	4,098,069	128,515	331,640
Special Projects	545,972	348,563	4,411	56,939
TOTAL PROGRAM	9,177,745	7,854,548	530,389	971,211
WASHINGTON ADM. & TECHNICAL ASSISTANCE	524,122	394,578	47,335	58,288
GRAND TOTAL	9,701,867	8,249,126	577,724	1,029,499

* *Funds actually paid out, obligated but unpaid funds not included.*
Source of data: IIAA Financial Statements, adjusted to eliminate funds contributed by Haiti.

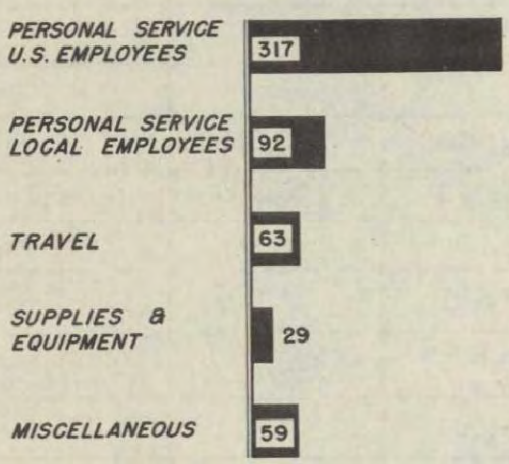
SOURCE OF FUNDS

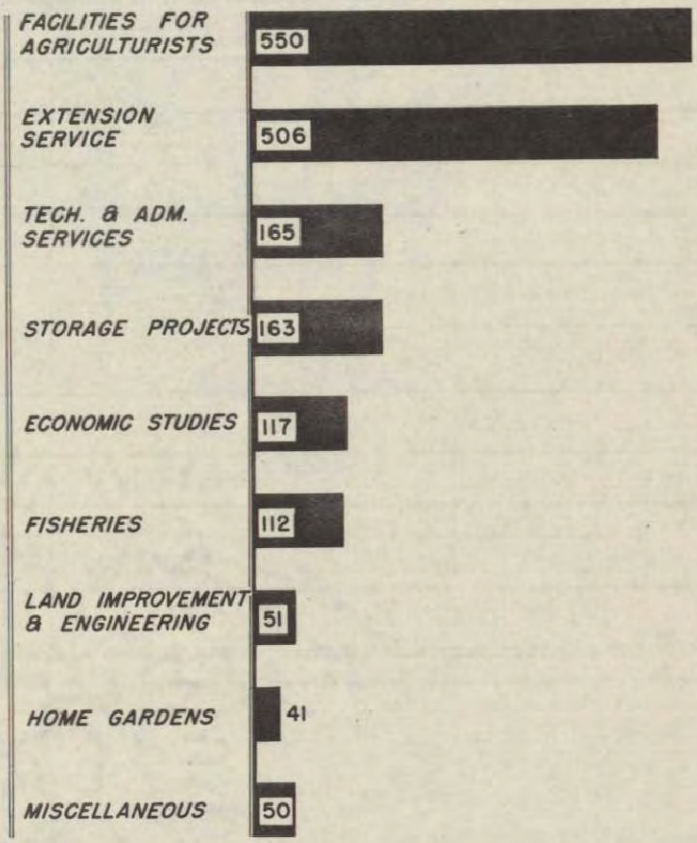


STATUS OF FUNDS



HOW FUNDS WERE EXPENDED





PERU

(SAMPLE COUNTRY)

FINANCIAL SUMMARY

MAY 1943 TO OCT. 1947

ALL FIGURES IN THOUSANDS OF DOLLARS

During 1947, with the increasing prominence given in the news to food riots in Europe, undernutrition in Latin America, famine in the Far East, and the high cost of food in the U. S., there has been a new awareness of the value of such activities as those of the Food Supply Division.

FOR U. S. ECONOMY

In January the Chairman of the President's Famine Emergency Committee suggested that "the most practical way of overcoming the chronic world food shortage would be to transfer some of 'our farming know-how,' capital, machines, and tools to such potentially productive areas as Latin America." 1/ By way of challenging the idea that encouraging development of food production in Latin America would injure U. S. trade, it was pointed out that even though their products are much like ours, 11 million Canadians--because they produce more and have more money to spend --buy from us only slightly less than 133 million Latin Americans.

This relationship between U. S. economic prosperity and that of the other American republics was reiterated later in January by a business leader, the President of J. P. Morgan and Company, Inc., who said that "If this country is to prosper we must try to help raise in some measure the standard of living in other countries and thereby bring about a wider market for our goods." 2/

A concrete effort by private business to act on this philosophy was evidenced that same month in the establishment by Nelson Rockefeller, former President of The Institute of Inter-American Affairs, of the International Basic Economy Corporation designed to "sponsor a wide variety of activities intended to improve agricultural production in Brazil and other countries and.....to be operated in much the same spirit as were the agricultural projects of the Office of Coordinator of Inter-American Affairs." 3/ In carrying on and expanding the agricultural development work initiated by the Food Supply Division in Brazil and Venezuela through funds raised from both local and U. S. investors, this U. S. Corporation is helping to fulfill a fundamental purpose of the cooperative action programs--to raise levels of living through the cooperative effort of America's citizens.

Creation of a demand is one of the fundamental requisites to U. S. trade expansion. Many Latin Americans do not know the advantages of modern agricultural equipment, materials, and methods, and often U. S. business

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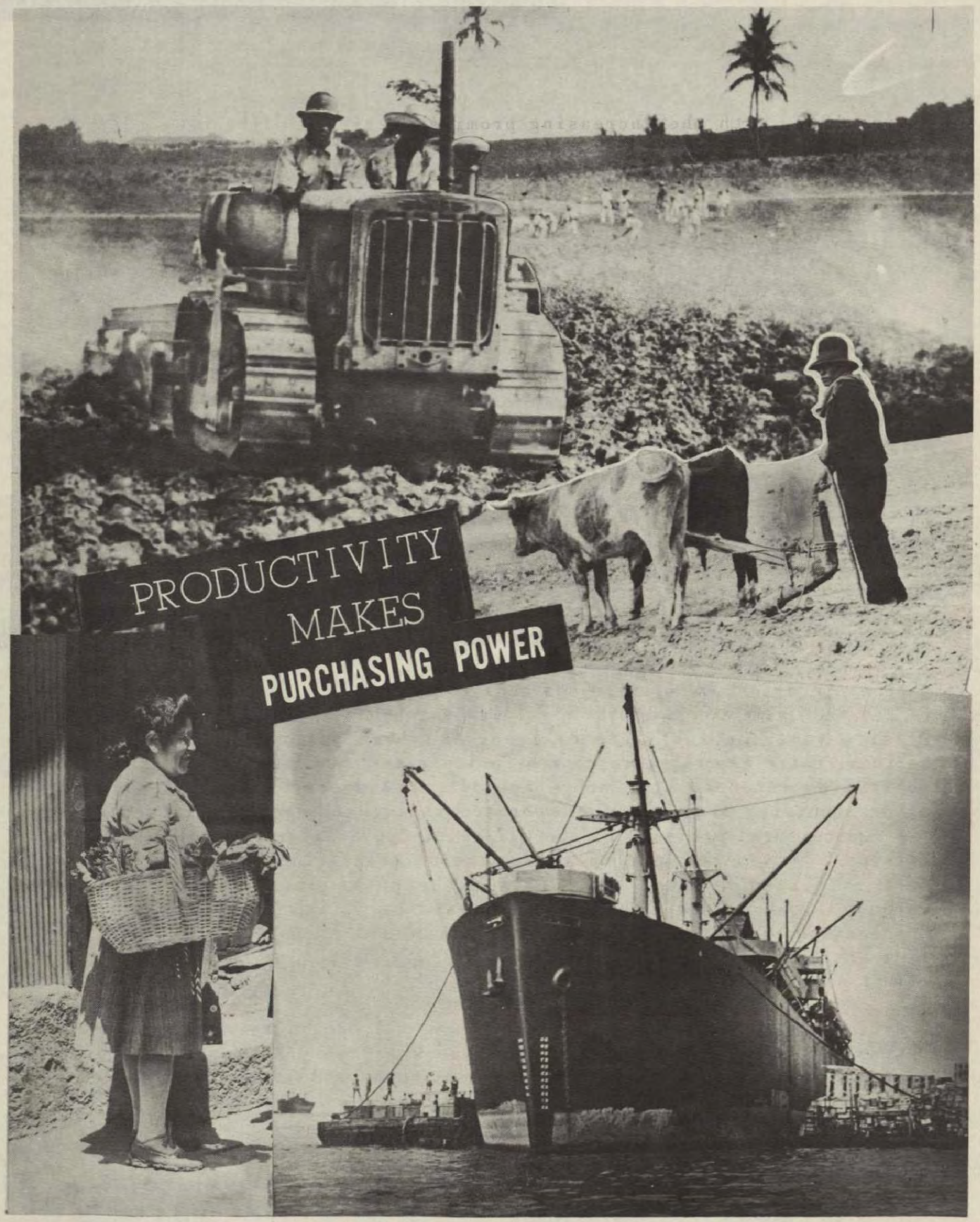
1/ *Foreign Commerce Weekly, January 4, 1947*

2/ *Time Magazine, January 13, 1947*

3/ *New York Times, January, 1947*


PRODUCTIVITY
MAKES
PURCHASING POWER

men have based export-sales promotion on the assumption that American materials and practices are suitable "as is" for use in Latin America. On the contrary, adaptation to local conditions is necessary.

The need for modern equipment is apparent; the present task is to transform this *need* to *desire,* which will result in a continually increasing demand.

That is not to say that there is not considerable demand now. It has been stated, for example, that Peruvian farmers need and want over $2,000,000 worth of agricultural machinery, livestock and farm supplies. A shortage of dollars now prevents their acquisition of the type of materials which they see in use at the 31 extension offices throughout the Servicio.

Normally Peru's purchases of food in foreign markets are from sources other than the U. S. The production of an increasing volume of food in Peru will progressively reduce the necessity for spending money for food in foreign markets, and conceivably in the course of a few years such a program might reduce Peru's outlay of exchange dollars for food by as much as 12 to 20 million dollars per year. These dollars would then be available for the purchase of industrial and consumer goods, a major portion of which would come from the U. S.

Until those dollars do reach the hands of Peru's farmers, technicians are encouraging improved agricultural methods which help increase the nation's food production and create an expanding desire for production materials. They are demonstrating tractors and cultivators, power sprayers, insecticides, and other forms of equipment so necessary to modern farming. In some cases these products are sold at cost to cooperating farmers as part of the effort to gain acceptance of new techniques; in no sense is this an act in competition with retail business firms. Rather it is an attempt through the power of demonstration and example to create an affirmative atmosphere and demand which will be of advantage to commercial interests. There is almost no greater need in Latin America than that for highly competitive merchandising--quantity distribution which would permit lower profit per unit.

The problems of Latin America are chronic--affected but not caused by the recent war. The needed solution is not basically one of relief or rehabilitation; it is one of creating circumstances which will result in

accelerated economic growth. The resulting gradually-expanding purchasing power will be of long-term advantage to exporting nations.

FOR LATIN AMERICAN ECONOMY

That the Food Supply programs are accomplishing in some measure their objective of improving the economy of these countries is evidenced by official, newspaper, and individual expression. For example, in October the U. S. Ambassador to Paraguay stated: "STICA has a well-coordinated program which is getting at the roots of the social and economic problems of this country." *La Tribuna,* important Paraguayan daily newspaper, in an article on March 30 had already noted that "through the execution of ample plans prepared by those organizations /Servicios\....there have been inaugurated in the country important advances and progressive works whose favorable consequences are still in view of everybody.....a beginning with practical, positive and progressive enunciation."

Monsignor John O'Grady, representative of North American Catholic Charities, said after visiting STICA projects in the spring: "I have studied programs of rural welfare in many countries, but I have seen no rural program so significant as the STICA program in Paraguay," and an American newspaper man, Ernie Hill, wrote on April 15 concerning STICA:

> "Five years ago an amazing organization from the United States set out to prove that Paraguay's situation in South America was not hopeless....in Paraguay (its program) was new. It was of vital importance. If it continues another 10 years, it may go a long way toward helping Paraguay lift itself from the squalor and ignorance of generations.....In one year cooperating farmers increased their yield 64.6 per cent. In the following year, they brought it up another 17.4 per cent. That meant more food for themselves and more produce to send to market....As well as the humanitarian aspect of the program, there can be little doubt that STICA is making thousands of people friendly toward the United States."

Of special value to the Institute's agricultural technicians is the opinion of Dr. Carl C. Taylor, Chief of the Farm Population and Rural Welfare Division of the U. S. Department of Agriculture, who stated after a trip to Paraguay early in 1947:

> "I did not have time to make anything approaching a study of STICA, for which I am sorry because it is without question the most powerful agency for agricultural improvement in Paraguay .....Its standing influence in Paraguay is almost beyond imagination. It is accepted and counted on by Paraguayan

officials to an extent that is unbelievable to one who knows how difficult it is in these countries to initiate programs of reform without offending functionarios. It has been able to do this even in the face of sharp changes in the Paraguayan Government.....It is my judgement that STICA now has a standing and the experience which should guarantee many times greater progress in the next than in the past five years. All it needs to do is integrate its program and focus it on the major directions of changes which are in the making, if STICA can keep going. If it is liquidated, I shall expect to see less than 1/10th sure progress made in these directions during the next decade."

In July 1947 a member of a British Agricultural Mission touring South America wrote, offering

"the very highest possible praise for the work being done by SCIPA in Peru.....(its director is) working on lines which in the long run must eventually be of service not only directly to your country, but indirectly to the world.....I found your country doing precisely what I should have advised my country to do in order to bring these backward countries up to making their proper contribution to world economy....."

Previously a U. S. agricultural leader, Mr. Skuli Ruthford, Assistant Director of Agricultural Extension in Minnesota who had been invited to Peru and other countries by the Departments of Agriculture and State in 1946, had stated in his report:

"I have visited all the countries between Guatemala and Peru, observing the agriculture and particularly the educational programs in the field of agriculture, and I feel that the program developed here in Peru (SCIPA) is the most promising in the field of agricultural education that I have come in contact with....."

Dr. J. A. Shellenberger, Head of the Milling Industry Department at Kansas State College, after his return in September 1946 from a two-months' study of the current milling and baking crisis in Peru made for SCIPA, reported:

"The cooperative program known as Servicio Cooperativo Inter-Americano de Producción de Alimentos, which the Institute of Inter-American Affairs is conducting in Peru, is the best enterprise I have encountered during my experiences in Latin

> America. The projects are well-conceived, efficiently managed, and valuable results are being obtained. The work of SCIPA in Peru is one of the most encouraging signs of the practicability of developing mutual understanding, respect, and unity of purpose between the peoples of the United States and those of a Latin American nation.....When the program is eventually entirely turned over to the Peruvian government, the foundation will have been established, through the training now being given to young men, for a permanent agency equipped to disperse knowledge concerning better agricultural methods. This will tend to bring eventually the economic condition of Peru into a better position as compared to that of the United States. There should thus result much closer cultural and trade relationships between the two nations."

These official and published impressions of the accomplishments of STICA and SCIPA, as well as of those of field staffs in other countries, have been reinforced by many human-interest and appealing expressions of appreciation for technical aid from hundreds of small farmers or farm women whose daily lives have been radically changed by the work of the cooperative programs.

Quantitative measures of the Food Supply Division's progress are more difficult to assess and are too often unreliable or the product of wishful thinking. Actually, the largest food supply program-that in Peru-has expended $1,500,000 in a little less than 5 years, or about 4 cents per capita per year. Obviously the influence of this expenditure toward increasing supplies of food (except for the relatively few direct production projects) would be more than overshadowed by cyclical variations in production. The Division's objective is to affect the secular trend. The method used is the training of local technicians and the introduction of methods which will lay the foundation for sound progressive agricultural development in the years to come.