

BEST AVAILABLE COPY

BEST AVAILABLE COPY

PD-ACC-998

# Mutual Security Program

MUTUAL DEVELOPMENT AND TECHNICAL-PROGRESS

TECHNICAL COOPERATION ADMINISTRATION

---

PROPOSED PROGRAM fiscal year 1954

PART II

IV. LATIN AMERICA

V. MULTILATERAL AGENCIES

BEST AVAILABLE COPY

BEST AVAILABLE COPY

AGRICULTURE, FORESTRY AND FISHERIES

|                           |           |
|---------------------------|-----------|
| Total U.S. Cost-----      | \$535,000 |
| U. S. Technicians-----    | 21        |
| No. of Training Awards--- | 8         |

Objectives: To increase the quantity and quality of agricultural production in Bolivia to satisfy domestic food needs. U. S. technicians will cooperate with the Ministry of Agriculture in the development of trained Bolivian technicians who will become a part of an improved agricultural extension service with its supporting programs for research and experimentation.

Major Activities in FY 1954

Progress to Date

Agricultural Extension

Continued technical assistance in improvement and expansion of the National Agricultural Extension Service, involving organization and methods to bring information on better agricultural and home practices to the farmers, accomplished through on-the-job advice and training of nationals in the above activities.

Regional Departmental Extension offices established at La Paz, Cochabamba, Santa Cruz and Sucre, which supervise the work of 18 provincial offices, manned by 24 national extension workers who were trained by U. S. technicians at the Regional Extension and Research Centers. During 1952, extension agents made nearly 3,000 farm visits, held over 1,000 meetings with a total attendance of more than 25,000 persons. In addition, they made many radio talks, published hundreds of newspaper articles and distributed nearly 3,000 bulletins. Demonstrations of improved cultural methods have reduced production costs. Several tons of Cuban yellow corn seed were distributed during 1952, far less than the demand. This new variety yields twice as much corn per unit area as the local varieties formerly used. Distribution of improved wheat seed and fertilizer demonstrations have resulted in increased production.

Agricultural Research

Continued technical assistance in the improvement of the country's agricultural research program. To consist of U. S. technicians working with national technicians on experimentation needed to solve major agricultural problems, such as introduction of improved varieties of plants and breeds of animals, better methods of cultivation, developing new varieties, adapting of U. S. methods to local conditions, plant and animal breeding; work on green manures and fertilizers, and control of insects and disease. Work to be conducted at the three regional experiment stations in Belem, Cochabamba and Saavedra. Principal studies on potatoes, quinoa, wheat, corn, pasture and forage plants; beef and dairy cattle, sheep and alpaca.

Experiments with fertilizers have doubled the yield of many crops. Phosphate treatment of pastures has increased weight of cattle and milk production. Introduction of purebred strains of cattle have demonstrated possibilities for increased production. White worm infestation of potatoes dropped from 30% to 2%, as a result of experimental work.

BEST AVAILABLE COPY

AGRICUL

Livesto

Co  
GU  
ta  
in

Soil and

U.  
in  
col  
be

Farm Mac

Est  
eat  
anc  
can

Rubber

Co  
pl

Training

Tra  
agr

AGRICULTURE, FORESTRY AND FISHERIES (Continued)

Major Activities in FY 1954

Progress to Date

Livestock Improvement

Continued assistance to the stockmen of the three principal regions - on improved nutrition, sanitation and management; importation of purebred sires, improvement and expansion of artificial insemination practices.

A complete physical plant for animal experimentation work was planned and constructed at the Cochabamba Station. Work was started on nutrition, sanitation, and breeding problems with dairy cattle and sheep. Several purebred dairy sires were imported. A survey of beef cattle production resources was made in the Beni and Reyes areas of East Bolivia and several hundred Brahman bulls were imported to increase insect and disease resistance of cattle in that area.

Soil and Water Conservation

U. S. technicians to work with nationals on irrigation and salinity problems in the inter-mountain regions, soil erosion and conservation on the Andean Plateau. Work centered at the Cochabamba and Belem experiment stations.

An agricultural engineer is working on irrigation and salinity problems in the Cochabamba Valley. Progress has been made on improvement of irrigation systems and control of salinity in that and other inter-mountain valleys. A small forest nursery was established at the Cochabamba station to determine better nursery and planting practices and suitability of new species.

Farm Machinery Demonstration

Establishment and operation of a farm machinery center in the eastern tropical lowlands (the Oriente) near Santa Cruz to adapt and demonstrate the use of agricultural machinery by training in care and operation.

A demonstration center was selected near Montero, importation of machinery started, and operating plans drawn up.

Rubber

Continued work on development of high yielding disease resistant plants, production of nursery stock and clones for distribution.

A small rubber tree nursery was established, high yielding and disease resistant clones were imported, and production of budded trees started.

Training

Training of technicians both locally and abroad in all fields of agriculture.

Nine Bolivians have received training in Agricultural Extension, Crop Production, Veterinary Science, Home Economics, etc., since September 1952. Six additional trainees are expected to participate in similar programs before the close of FY 1953.

AGRICULTURE, FORESTRY AND FISHERIES (continued)

Major Activities in FY 1954

Progress to Date

Livestock Improvement

Increase milk production through improvement of dairy stock, better management practices, animal sanitation, and artificial insemination.

The Servicio has recently undertaken the operation of a dairy farm in southern Chile, prepared plans for barns and other installations, demonstrated culling of livestock, and imported eleven pure-bred Holstein bulls.

Soil and Water Conservation

Demonstrate methods and techniques of soil conservation, water application and drainage.

Collaboration with Ministry of Agriculture in preparing soil conservation plans for critical areas in south central Chile. Field operations included soil surveys on individual farms, construction of ditches and terraces, and establishment of a tree and shrub nursery.

Farm Mechanization

Organize machinery pools for land preparation.

Acquisition of 7 tractors, 2 ditchers, 2 terracers, blades, scrapers, etc., setting-up service facilities for mechanical equipment as preparation for soil conservation work in the south.

Miscellaneous Activities

Formulate plans for programs in selected areas in cooperation with other branches of the Chilean government.

As part of the Chilean government's comprehensive plan to improve economic conditions in the northern province of Arica, the Servicio is undertaking a campaign of insect control by control of alfalfa cut worms by spray and beneficial parasites, treatment of olive trees for black scale by oil emulsion sprays, and spraying of citrus groves. Plans made for study of high salinity in agricultural areas and for campaign against animal parasites.

Plans are being made for another joint project in O'Higgins province which will include agricultural extension, home demonstration and farm youth clubs.

Training

Chileans are receiving training in various phases of agriculture.

Since August, 1952, fifteen Chileans have received training in Agricultural Chemistry, Agricultural Statistics, Home Demonstration, and Plant Pathology. An additional five trainees are expected to begin similar training programs before June 30, 1953.

PROGRAM COSTS  
(Costs in Thousand Dollars)

|                                   | FISCAL YEAR 1953 |              |                 |             | PROGRAM      |              | PROPOSED FISCAL YEAR 1954 PROGRAM |              |                 |              |              |               |
|-----------------------------------|------------------|--------------|-----------------|-------------|--------------|--------------|-----------------------------------|--------------|-----------------|--------------|--------------|---------------|
|                                   | U.S. Technicians |              | Training Awards |             | Other        | Total        | U.S. Technicians                  |              | Training Awards |              | Other        | Total         |
|                                   | No.              | Cost         | No.             | Cost        | Costs        |              | No.                               | Cost         | No.             | Cost         | Costs        |               |
| Agriculture, Forestry & Fisheries | 20               | 141.1        | 4               | 15.0        | 331.1 a/     | 487.2        | 20                                | 136.6        | 24              | 103.2        | 432.7 e/     | 672.5         |
| Health and Sanitation             | 12               | 118.4        | 6               | 22.6        | 164.1 b/     | 305.1        | 15                                | 163.7        | 10              | 37.5         | 254.0 f/     | 455.2         |
| Education                         | --               | --           | --              | --          | --           | --           | 1                                 | 7.7          | 2               | 8.6          | 5.0          | 21.3          |
| Natural Resources                 | 2                | 14.1         | 3               | 12.0        | 78.9 c/      | 105.0        | 3                                 | 37.7         | 2               | 8.6          | 113.7 g/     | 160.0         |
| Industry and Labor                | 1                | 14.3         | 2               | 7.5         | --           | 21.8         | 2                                 | 20.1         | 11              | 47.3         | 115.2 h/     | 182.6         |
| Transportation                    | 3                | 15.5         | 3               | 11.3        | 17.5 d/      | 44.3         | 7                                 | 75.6         | 17              | 73.1         | 7.5          | 156.2         |
| Public Administration             | 1                | 8.3          | 1               | 3.1         | 4.0          | 15.4         | 2                                 | 20.7         | 8               | 34.4         | 4.4          | 59.5          |
| <b>TOTAL</b>                      | <b>39</b>        | <b>311.7</b> | <b>19</b>       | <b>71.5</b> | <b>595.6</b> | <b>978.8</b> | <b>50</b>                         | <b>462.1</b> | <b>74</b>       | <b>312.7</b> | <b>932.5</b> | <b>1707.3</b> |

- a/ Servicio grant 100.0, contract Michigan. State University 155.0, 8 employees.
- b/ Servicio grant 125.0.
- c/ Contract Power development 50.0, Bu. Mines 2.0.
- d/ Contract, coal loading and transportation 15.0.

- e/ Servicio grant 130.0 (30.0 for area development) contract Michigan State University 150.0, 8 employees.
- f/ Servicio grant 175.0 (50.0 for area development).
- g/ Contract power development 100.0.
- h/ Servicio grant 110.0 (20.0 for area development).

AGRICULTURE, FORESTRY AND FISHERIES

Total U. S. Cost -- \$672,500  
No. of U.S. Technicians - 20  
No. of Training Awards -- 24

Objectives: To assist Colombian agricultural agencies in carrying out an integrated program for agricultural improvement with emphasis on more intensive utilization of several large, rich land areas, such as the Cauca Valley.

Major Activities in FY 1954

Progress to Date

Agricultural Extension

Assist Ministry of Agriculture to expand and modernize its program of aid to farmers.

Assist the Ministry of Education through a contract with Michigan State College.

Surveys have been made that will provide a basis for planning future expansion of the Ministry's Extension organization. Primary emphasis has been on livestock improvement.

Seven professors assigned by Michigan State College have assisted in improving the Palmira and Medellin Agriculture Colleges, with special attention to the coordination of research, education and extension.

AGRICULTURE, FORESTRY AND FISHERIES. (continued)

Progress to Date

Major Activities in FY 1954

Agricultural Extension

Improvement of soil fertility, plant breeding and development of new techniques which will increase coffee production.

Assistance in food processing, starting with citrus fruits.

Rubber Development

Exploration of new varieties of Hevea rubber trees and assistance in the operation of a pilot type plantation, financed by the Caja Agraria (Ag. Credit Bank) of Colombia.

The coffee production program of the National Coffee Federation reaches close to 300,000 producers has shown general improve

Rubber development is a modest, long-range project utilizing two technicians which is pointing the way to Colombian self-sufficiency in natural rubber production. This project has been in operation for several years. Disease-resistant specimens have been transplanted from the jungle and grown in the rubber plantations. Seven tons of disease-resistant rubber seeds have been sent to nurseries for planting.

Soil and Water Conservation

Surveys of several areas where agricultural production is subject to great expansion through irrigation, drainage and flood control. First attention is being given to a 50,000-acre irrigation project, financed by the Export-Import Bank.

Soil and Water Conservation is striking at Colombia's major obstacle to increased food and fiber production; i.e., the need for irrigation and drainage, together with hydroelectric power development. The first project illustrates the need for continuing assistance in the proper use of water, to safeguard the large investment made in construction of the system.

Training

An important aspect of all activities, in extension work and irrigation development. Fifteen awards made as of March 31, 1953, under the FY 1952 and 1953 programs.

Sixteen Colombians have received training in Soil Science, Agricultural Statistics, Agricultural Chemistry, Home Economics, and Agricultural Credit since August, 1952.

AGRICULTURE, FORESTRY AND FISHERIES

Total U.S. Cost-----\$542,400  
No. of U.S. Technicians-----19  
No. of Training Awards-----5

Objectives: With the general purpose of improving agriculture, raising dietary standards, and achieving self-sufficiency in food production, the Servicio and the Research group are providing Costa Rica, through its Ministry of Agriculture, a complete agricultural extension and home demonstration service, and executing specially requested projects, such as farm mechanization, agricultural engineering, and research.

Major Activities in FY 1954

Progress To Date

Agricultural Research

To increase coffee yields and control coffee tree diseases, and to improve production of cacao, rice, citrus and other tropical crops.

Notable success has been achieved in controlling certain coffee diseases, as a result of which coffee production, a major item in the national economy, may be increased by at least 15%.

Agricultural Extension

Large scale extension programs to impart basic agricultural knowledge and techniques to farmers and to develop rural youth organizations and home demonstration programs.

A marked increase has been made in production of food crops for local consumption and export through operation of 30 extension agencies in the country. Food stuffs formerly imported, such as rice, corn, and beans now are exported after local needs are met. Twenty percent of the half million pound tomato crop of 1952 was exported to Panama. Establishment of eight thousand family gardens has increased and diversified rural diet. Milk supplies have increased 25%, principally due to wider use of silage and improved pasture and herd management. As a result of stock water facilities, hay making, and pasture improvement programs, annual losses of stock have been materially reduced, and in 1952 importation of cattle ceased, although local consumption of beef increased.

Rubber Development

Study of techniques for increasing rubber production and adapting them to Costa Rica and other Latin American areas.

Results of experiments to develop high yielding and disease resistant rubber seedlings, after a decade of research, now show much promise. Distribution of hybrid rubber trees to small farmers on a demonstrational basis has been effective.

Agricult

Marketi

Studi

Agricu

Coop  
Prog

Soil s

Tech  
Irr

Farm

Est  
and

Fore

Co

Tra

I

(

a

Agriculture, Forestry and Fisheries contin'dMajor Activities in FY 1954Progress to DateMarketing

Studies of both domestic and foreign markets.

Agricultural Credit

Cooperation between the STICA Extension Service and the Rural Credit Program of the Central Bank.

Soil and Water Conservation

Technical services to farmers in soil conservation and in planning irrigation systems.

Farm Mechanization

Establishment and operation of heavy machinery pool to open new lands and assist in cultivation.

Forestry

Cooperation in the establishment of forest conservation measures.

Training

Includes both extension training in Costa Rica of Technicians from other countries and grants for training of Costa Ricans in the U.S. and in third countries.

Irrigation systems have been installed for 10,000 acres of farmland, and erosion control measures have been initiated on twice that acreage.

Two heavy machinery pools have been established and a program of land clearing and cultivation on a reimbursable basis is now in operation. To complement this a special project to encourage greater use of draft animals, and related equipment, has been started.

Studies revealing that over 75% of Costa Rica is in forest cover indicate the need for technical assistance in forestry.

A soil survey has been completed of lands in the proposed Tempisque Valley irrigation project. A stream gaging program is being carried on in main rivers of the valley and engineering studies of canal locations have been made.

Fourteen Costa Ricans have received training in Grain Storage, Forage Crops, Plant Pathology, Agricultural Engineering, Dairy Industry, Poultry Husbandry since January 1952.

- 87 -  
AGRICULTURE, FORESTRY AND FISHERIES

Total U.S. Cost-----\$374,100  
No. of U.S. Technicians - 15  
No. of Training Awards. - 10

Objectives: To cooperate with the Ministry of Agriculture to improve its agricultural extension service, agricultural research and educational institutions with resulting increased production of agricultural products for both domestic consumption and export.

Major Activities For FY 1954

Progress to Date

Extension

Continued assistance to improve the organization, administration and methodology of extension work for a more effective dissemination of information to the farmers on improved agricultural practices. Training of Ecuadoran nationals in this field of activity.

A National Agricultural Extension Service was established by special Ecuadoran decree during 1952. Regional extension offices have been set up in Quito, Guayaquil and Cuenca. Several Provincial extension agents have been assigned to each region with the greatest emphasis on the Guayaquil area. A technical pool of U.S. and National technicians has been established in Guayaquil to work with and train extension agents, and to cooperate with experiment stations and vocational schools in the lowland areas.

Research

Cooperation and assistance in the development of an agricultural research program designed to solve important agricultural production problems; including planning and execution of experiments at the Pichilingue, Portoviejo, Cuenca, Conococo, Tambilloa and Tumbaco experiment stations. The principal crops involved are bananas, rice, cocoa, coffee, citrus, wheat, corn; work is also planned on plant insect and disease control problems, forage and pasture plants, green manure and fertilizers.

Work at the Pichilingue station has been concentrated largely on cacao with the result that very promising high-yielding and disease resistant plants have been developed and have been distributed in some quantity. Cacao production has increased materially since the beginning of the program owing in part to the experimental work which inspired replanting of many groves. Experimental work on pyrethrum in the highlands, combined with the recently increased demand, has resulted in a greatly increased production of this important export commodity. Ecuador was the world's largest exporter of bananas during 1952. Action was taken during the year to give technical assistance in improved cultivation methods and control of sigatoka disease which seriously threatens future production. A high yielding variety of wheat, adapted to the highlands, was selected from many thousand introductions and several tons of seed were distributed during 1952.

Livestock Improvement

U.S. technicians have been assigned to assist in a solution of dairy cattle and sheep production problems in the highlands and beef cattle problems in the lowlands. Work is planned on methods of controlling both external and internal animal parasites.

As a result of technical assistance rendered in milk testing, herd management, nutrition and sanitation in the highlands, many dairy-men of that area have adopted improved practices with resultant increases in quality and production of dairy products. An effective start has been made toward animal parasite control work in the lowlands as a result of demonstrations by U.S. and national technicians in the use of improved methods and insecticides.

(AGRICULTURE, FORESTRY AND FISHERIES - Continued)Crop Improvement

Continued assistance in the development of disease resistant and high yielding cacao varieties at Pichilingue, rice irrigation and production problems in the Guayaquil area. Work is to be started on banana production problems which will consist largely of sigatoka disease control.

Agricultural Education

Assistance in this field will be given to the vocational agricultural schools at Daule, Ambato and Latacunga. Cooperation with the Guayaquil College of Agriculture will be continued.

Work accomplished on cacao and bananas is described under Research. Demonstrations of rice irrigation system and improved cultural methods have resulted in substantial increases in production.

U.S. technicians and Ecuadoran associates participated in short-term courses given at the three vocational agricultural schools, also period visits were made to these institutions for the purpose of giving lectures on specialized subjects. Contacts were maintained with the Guayaquil College of Agriculture.

AGRICULTURE, FORESTRY AND FISHERIES

|                         |           |
|-------------------------|-----------|
| Total U.S. Cost -----   | \$235,000 |
| U. S. Technicians ----- | 14        |
| Training Awards -----   | 7         |

Objectives: To cooperate with the Ministry of Agriculture in improving the effectiveness of its agricultural agencies including: extension, research and vocational education institutions, with the objective of increasing and diversifying production of agricultural commodities for both domestic consumption and export.

Major Activities in FY 1954

Progress to Date

Agricultural Extension

Continued assistance in organization and operation of the country's rapidly-expanding agricultural-extension service with emphasis on better methods of bringing to farmers information and materials that will improve farming practices and raise living standards, to include assistance in home economics as well as crop and animal production.

The National Extension Service was expanded to serve additional agricultural areas. Demonstrations of improved cultural methods and distribution of improved varieties of seeds and plants were greatly increased during 1952 as a result of larger country appropriations. Radio talks on improved agricultural practices were added to the program. Greater use was made of moving pictures, a start was made on the production of a regional educational movie to be made in El Salvador. Large numbers of extension bulletins were printed and distributed. The activities and coverage of the entire extension program were more than doubled during 1952. Extension work resulted in the virtual elimination of the field-cricket plague which threatened to destroy the 1952 coffee crop. Several hundred thousand fruit, timber and ornamental trees have been distributed.

Agricultural Research

Experimentation to develop ways and means of solving important production problems of major export crops such as coffee, fiber, vegetable and essential oils; also to diversify crops for domestic consumption; and to include work on problem of insect and disease control. Work to be centered at Santa Tecla headquarters, laboratories and field experiment stations at San Andres and Santa Cruz Porillos, all a part of the National agency set up by the Government of El Salvador to facilitate cooperation with technical assistance activities.

Experimentation work at the Santa Tecla Laboratory and San Andres and Santa Cruz Porillo experiment stations was expanded to cover problems and crops. Improved coffee-curing methods were developed resulting in lowered costs and better grades. Serious losses of sugar cane from Mosaic disease were reduced by propagation and distribution of resistant cane varieties. Experiments with seed corn cultural and drying methods have reduced production time by more than 50%. A nation-wide weather recording system consisting of 60 stations to serve agriculture was established during 1952. Improved methods of cultivating, harvesting and processing henequen fiber were developed.

Agricultural Education

To assist in the organization and operation of the new school of Vocational Agriculture established on the grounds of the San Andres Agricultural Experiment Station during 1952. The country has requested that a U.S. technician function as Consulting

U.S. Technicians assisted in the planning, organization and establishment of a vocational agricultural school at the San Andres Experiment Station. U.S. technicians also gave resident instruction in agricultural subjects in cooperation with the National University

Director  
to the  
at Santa  
ment

and wife

A. U. S.  
problems  
nation.

Activities

A detail  
view to  
of the r.  
their su  
and supe  
Training

Objective: T  
t.  
t.

April

The Heal  
distribut  
followin  
million  
of the r.  
of health  
station

AGRICULTURE, FORESTRY AND FISHERIES (continued)

Major Activities in FY 1954

Director of this institution during its early stages. Assistance to the National University and practical school of agriculture at Santa Ana will be continued. Introduction of an agricultural content into the rural elementary school curriculum.

Progress to Date

of Santa Ana Agricultural School.

Soil and Water Conservation

A U. S. Agricultural Engineer will continue to give assistance on problems of irrigation, wind and water erosion and water conservation.

A number of irrigation plans and demonstrations were made in cooperation with local government agencies and farmers, including wind-break planting and watershed protection.

Fisheries

A detailed survey of the coastal waters of El Salvador with a view to determining the fisheries resources. A scientific study of the nature of the fish resources and the factors controlling their supply. Technical assistance activities include guidance and supervision in the proposed development of a fishing industry. Training for Salvadorans is also part of the program.

Project began in 1951, and is designed to determine whether a fish processing industry is feasible. A preliminary survey of El Salvador's coastal waters has been completed. Fish catches from this research fishing project were distributed to 30 non-profit institutions, including hospitals, orphanages, and jails. Survey being made in the Izalco, a 99-foot purse seiner which was purchased by the Government, overhauled, equipped for trawling and outfitted with gear and spare parts.

HEALTH AND SANITATION

Total U.S. Cost - \$287,400  
 U. S. Technicians- 13  
 No. of Training Awards 5

Objective: To assist the Ministry of Health of El Salvador to improve the general level of health by increasing health facilities, by providing technical direction in nursing education, by providing demonstration projects in vital statistics, social welfare and housing; by training professionals and nonprofessionals in public health activities.

Major Activities in FY 1954

Progress to Date

Medical

The Health Service is engaged in providing supervision in the construction of health and training facilities, including the following: construction and equipment of a 96-bed tuberculosis pavilion at the National Sanatorium; construction and equipment of the National School of Nursing for 120 students; construction of health centers in San Miguel and San Julian; extensive renovations and additions to a 167-bed Maternity Hospital. Emphasis

Since its inception, the health Servicio has completed some 116 different activities which have been transferred to responsible agencies of the National Government or municipalities. These include construction and operation of 8 health centers and operation of 8 part-time health units; construction of 4 hospital-health centers; additions to the National Tuberculosis hospital and to the hospitals of Zacatecoluca and Santa Tecla; and construction of the

AGRICULTURE, FORESTRY AND FISHERIES

Total U.S. Cost:-----\$151,400  
No. of U.S. Technicians-----7  
No. of Training Awards-----0

Objectives: To cooperate with Guatemala in the improvement of its agricultural agencies with resulting increase in quality and production of agricultural commodities for export and domestic consumption.

Major Activities in FY 1954

Progress to Date

Agricultural Research

Research assistance to the National Agricultural and Livestock Institute to improve seed, especially wheat, corn, rice, beans, and potatoes.

(1) Introduced varieties of wheat seed yielding four to five times the amount of the average local seed; the Guatemalan Government made general distribution of these new varieties in 1952; (2) similar accomplishments with rice; and (3) developed high-yielding, disease-resistant, coffee plant stocks.

Agricultural Extension

Assistance to producers of wheat, rice, beans, coffee, poultry, hogs, and sheep; development of strategically important fibers and other materials, including oil palms, kenaf, ramie, cinchona and abaca.

In 1952, 100,000 pounds of imported rice seed were distributed. Over 1200 acres of rice were under cultivation and for the first time Guatemala has a surplus of rice. Beans, coffee, poultry and hog production has been similarly increased.

Rubber

Help development of an accessible source of this strategic item, to produce disease-resistant, high-yielding hevea trees, and to supply an additional cash crop.

Highly valuable and not easily replaceable reserve rubber plantings have been established. After many years of rubber research and experimentation, 2,000 acres have been planted, of which 1,200 contain trees of tapable size, which will produce annual yields of about 125,000 pounds of high quality rubber. Seed and seedlings were distributed to Guatemalan small farmers in 1952 by assisting the Guatemalan Ministry of Agriculture in procuring seed from Haiti.

HEALTH AND SANITATION

Total U.S. Cost:---\$60,000  
No. of U.S. Technicians--2  
No. of Training Awards---0

Objective: To assist the Ministry of Health of Guatemala in its program to improve the general level of health by increasing its health facilities.

Major Activities in FY 1954

Progress to Date

Advice in constructing and equipping a 1000-bed hospital.

Completed the nursing school of the Roosevelt Hospital; the hospital itself is 70% completed.

s

nd

nce  
o

xi-

e

1 be

3. The

to \$1

at.

govern-

in kind

are fur-

Total

151.4

60.0

211.4

AGRICULTURE, FORESTRY AND FISHERIES

Total U.S. Cost ----- \$436,000  
No. of U.S. Technicians ----- 10  
No. of Training Awards ----- 4

Objectives: To join with the Honduran Government in aiding its newly formed Ministry of Agriculture to preserve and more effectively utilize natural resources for the betterment of the health of its people and the strengthening of its economy.

Objectives

Major Activities in FY 1954

Progress to Date

Agricultural Extension

Assistance on the expansion and operation of country-wide extension service.

The Honduran Extension Service which began in 1950 and developed with the assistance of U.S. technicians, now has 13 offices which provide farmers with improved seeds, better cultivation methods, inoculation and spraying of livestock and fowl, introduction and sale of farm implements, fertilizers and insecticides.

Rehabilitation of National Agricultural Centers

The Servicio has assumed the direction of the National Agricultural Center at Comayagua. The 6,000-acre tract has been completely rehabilitated, including repairs to existing irrigation system, clearing land and planting to pasture, repair and expansion of farm buildings, and improvement of cattle.

Organization and operation of grasshopper control measures

Effective use was made of a U.S. Airforce helicopter to combat a serious plague of grasshoppers.

Livestock Improvement

Importation of improved breeding stock; initiation of stock water supply program; cattle pest control; range management; marketing of cattle.

U.S. livestock have been purchased for use in local cattle improvement program. Several shallow wells have been dug to relieve livestock in arid areas.

Soil and Water Conservation

Assist farmers in planning irrigation facilities and soil conservation.

Farmers have been assisted in soil conservation and planning irrigation for their lands; demand for such services is increasing.

Forestry

Preparation of plans for the establishment of the organization of fire control and conservation of forest resources.

In its first year of operation, the forest fire organization has been able to reduce the number and extent of forest fires. Large-scale tree planting has been accomplished in two demonstration areas near Tegucigalpa.

Medical

Assi  
ium,

Environ

Ass  
sy

Object

Elem

14

PROGRAM COSTS

(Cost in Thousand Dollars)

|                                  | FISCAL YEAR 1953 PROGRAM |              |                 |             |                     | PROPOSED FISCAL YEAR 1954 PROGRAM |                  |              |                 |             |                     |              |
|----------------------------------|--------------------------|--------------|-----------------|-------------|---------------------|-----------------------------------|------------------|--------------|-----------------|-------------|---------------------|--------------|
|                                  | U.S. Technicians         |              | Training Awards |             | Other Costs         | Total                             | U.S. Technicians |              | Training Awards |             | Other Costs         | Total        |
|                                  | No.                      | Cost         | No.             | Cost        |                     |                                   | No.              | Cost         | No.             | Cost        |                     |              |
| Agriculture, Forestry, Fisheries | 10                       | 181.1        | 3               | 9.8         | 155.0 <sup>a/</sup> | 282.9                             | 9                | 95.0         | 3               | 9.8         | 103.6 <sup>d/</sup> | 213.4        |
| Health and Sanitation            | 5                        | 75.5         | 4               | 13.0        | 131.4 <sup>b/</sup> | 219.9                             | 7                | 85.9         | 4               | 13.1        | 110.3 <sup>e/</sup> | 209.3        |
| Education                        | 10                       | 102.7        | 4               | 13.0        | 80.0 <sup>c/</sup>  | 195.7                             | 10               | 105.0        | 4               | 17.2        | 80.6 <sup>f/</sup>  | 202.8        |
| Natural Resources                | 1                        | 13.4         |                 |             | 9.1                 | 22.5                              | 2                | 23.5         |                 |             | 12.8                | 36.3         |
| Public Administration            | 1                        | 5.2          | 4               | 13.0        | 7.0                 | 25.2                              |                  |              | 3               | 12.9        |                     | 12.9         |
| <b>TOTAL</b>                     | <b>27</b>                | <b>314.9</b> | <b>15</b>       | <b>48.8</b> | <b>382.5</b>        | <b>746.2</b>                      | <b>28</b>        | <b>309.4</b> | <b>14</b>       | <b>53.0</b> | <b>312.3</b>        | <b>674.7</b> |

a/ Joint Fund grant 60.0  
 b/ Servicio grant 100.0  
 c/ Servicio grant 50.0

d/ Joint Fund grant 65.0  
 e/ Servicio grant 100.0  
 f/ Servicio grant 50.0

AGRICULTURE, FORESTRY AND FISHERIES

Total U.S. Cost-----\$213,400  
 No. of U.S. Technicians-----9  
 No. of Training Awards-----3

Objectives: To cooperate with and assist the Ministry of Agriculture to improve its agricultural extension service, research program and educational facilities with resulting increase in quality and production of agricultural commodities for both domestic consumption and export.

Major Activities in FY 1954

Progress to Date

Agricultural Research

Continued technical assistance to the country's three agricultural experiment stations, La Calera and Masetopa on the west coast and El Recreo near the east coast. Major export crops involved are coffee, cotton, sesame, cacao, vegetable (palm) oil, cabinet woods; important crops for domestic consumption are rice, corn, and sugar cane. Experimentation is being conducted on most of these crops to improve quality, increase production and lower costs. Beef cattle raising dairy and poultry production are important activities in which research is being conducted. Methods of insect and disease control of plants and animals are being investigated.

The agricultural experimentation work for the country has been centered at La Calera near Managua, although sub-stations are operated at El Recreo on the west coast, Masetopa in the highlands and at other points. Introduction of better varieties of coffee plants has been made and distributed. Investigation of insect control made it possible to prevent serious damage to the 1952 coffee crop by crickets. Work with new insecticides greatly reduced losses of cattle from the torsale fly during 1952. Results of experiments on the feeding and handling of baby chicks reduced losses of large numbers of importations during the year. Improved cultivating methods and insect control of cotton plants



AGRICULTURE, FORESTRY AND FISHERIES

Total U.S. Cost ----- \$609,500

No. of U.S. Technicians ---- 17

No. of Training Awards ---- 8

Objectives: To assist the Ministry of Agriculture and other agencies of the Panamanian Government in establishing integrated agricultural education and research, disseminating advanced farming techniques, and improving crops and livestock with special missions and area development.

Major Activities in FY 1954Progress to DateResearch

Continue to assist the Panamanian National Institute of Agriculture in coordinating agricultural research, specifically, testing of crops under dry and rainy season conditions; testing of fertilizers, insecticides, and herbicides, research on cattle and on dairy herd management; experimentation with irrigation.

Assisted in preparing plan for coordination of agricultural research within the Ministry of Agriculture and the National Institute of Agriculture; experimentation in improved rice breeds; in general, research and experimentation in research activities.

Extension and Development

Assisting Ministry of Agriculture 1) in planning and organizing an extension service and related farm youth club work; 2) in land clearing; 3) in promoting demonstration-production farms; for training and seed and livestock production; 4) in irrigation and marketing; 5) in weed and insect control; 6) in improving crop storage facilities; 7) in increasing the availability and use of animal drawn and mechanized farm equipment and 8) in crop improvement, particularly in rice and sweet potato production.

A plan for the organization of a national extension service for the Ministry of Agriculture was prepared by a special mission from the University of Arkansas, and was accepted and established by law in November 1952. Since then five rural offices have been opened, with others projected.

Selected rice seed, herbicides, and insecticides introduced and demonstrated by U.S. technicians, along with self-propelled rice combine harvesters have contributed to increase of rice production to near self-sufficiency. An improved sweet potato was also successfully introduced and promises to be an economic crop in the future.

Agricultural Education

- 1) University of Arkansas' Mission will continue to assist academic reorganization of the school of agriculture;
- 2) Advise on content of agricultural course of study.
- 3) Advise on the teaching of modern practical agricultural methods.

The academic structure of the National Institute of Agriculture at Divisa was reorganized by members of the University of Arkansas Mission, improving the efficiency and instruction at the school. It has since been turned over for operation by the Ministry of Agriculture, although the Arkansas technicians remain as consultants.

AGRICULTURE, FORESTRY AND FISHERIES (Continued)

Major Activities in FY 1954

Progress To Date

Agricultural Education

Continued cooperation with the one agricultural college near Asuncion.

Includes a long-standing project of assistance to the Agriculture College near Asuncion.

Crop and Livestock Improvement

Develop a supply of proven new varieties of wheat seed. Assist in the operation of a large demonstration ranch and a model dairy, provide technical assistance in artificial insemination, and range pasture improvement.

A plant breeding and selection station, now known as the National Agronomy Institute, established 10 years ago. Trials and tests have been conducted on thousands of species of vegetables, fruits and field crops. Large volumes of seed have been produced for sale and distribution through the Extension and Credit organizations. As one result, Paraguay now looks forward to becoming self-sufficient in wheat production. 40 private dairymen are cooperating with the model dairy that is demonstrating improved methods of milk production and pasteurization. A 27,000 acre demonstration ranch now is carrying close to 6,000 head of beef cattle and is stimulating extensive improvements among private ranchers.

Demonstration Center and Farm Mechanization

Assist the National Agronomy Institute in crop improvement and training, and the Ministry of Agriculture in organizing and operating a new machinery pool.

The demonstration center has trained a large number of technicians, has greatly stimulated crop production and has demonstrated the economic advantages of diversified farming. A recent International Bank loan to Paraguay includes an amount for purchasing agriculture machinery, with which to establish machinery pool service, as a small demonstration project. Work of a vegetable oils specialist has revealed some bright prospects for new industries and export crops; such as a wax (from Palm leaves) and tung oil. The agricultural census, made several years ago by STICA, is providing a valuable basis for planning many improvements. Special attention has been given to Paraguay's exceptionally rich resources in medicinal plants.

Agricultural Credit

Assist Paraguayan Government's supervised rural credit agency.

Complements extension work by providing low interest rates for a variety of purposes and by introducing new tools and modern farming methods. This program now employs more than 150 credit supervisors, who were trained by STICA. Its 7,000 clients represent 12% of all farm families and 33% of total cultivated area.

AGRICULTURE,

Soil and Water

Survey

Organization

Survey  
Insti  
Parana

Forestry

Under  
ment.

Storage,

Advic  
study  
regic

CULTURE, FORESTRY AND FISHERIES (Continued)Major Activities in FY 1954Progress To DateAgriculture and Water Conservation

Survey land utilization and study water resources.

A reconnaissance type of soil survey, on aerial photographs, has been completed. This provides Paraguay's first scientific inventory of soils quality and future development prospects. Water resources studies have served to increase the interest in settlement and development of the Parana region.

Colonization

Survey and plan, in cooperation with the National Colonization Institute, with particular reference to colonizing the Upper Parana River region.

Under the agricultural credit program, over 400 families have been resettled in two new colonies. Many studies have been made that will be valuable in guiding future colonization efforts. Various immigrant groups, such as the Mennonites, have become established in Paraguay.

Forestry

Undertake studies and surveys, with a view to new land development.

The economic importance of forest resources has been recognized since the inception of this program. Numerous studies have been made and, currently, special attention is being given to timber utilization problems in the Upper Parana Region.

Storage, Marketing and Area Development

Advice on grain storage; study of major marketing problems; and study of area development possibilities in the Upper Parana region.

Includes past help in planning and construction of underground, concrete silos for grain storage. Increased wheat production presents a new storage problem. As a part of many past economic studies, special consideration has been given to marketing of forest products, tung oil, yerba maté and other important commodities. A number of studies - of forest resources, immigration, colonization, transportation, hydroelectric power, etc. - have been centered in the Upper Parana Region. Increasing interest has been shown in the project to connect Paraguay with the State of Parana, Brazil by highway. If this highway is built, it will make possible an intensive, large-scale development of one of the most promising frontier areas in Latin America.

AGRICULTURE, FORESTRY AND FISHERIES

Total U. S. Cost -- \$938,400  
No. of U.S. Technicians - 33  
No. of Training Awards -- 11

Objectives: To aid Peru, through cooperation with the Ministry of Agriculture, to improve agriculture, with the aim of increasing home-grown food supplies and the production of specialty crops for export.

Major Activities in FY 1954

Progress to Date

Agricultural Research

A program of research is carried on in two distinct agricultural environments: Tingo Maria, in the jungle; and La Molina, for the coastal and sierra areas. Principal effort at Tingo Maria emphasizes development of food crops suitable for production and storage in humid climates, and industrial crops suitable to jungle areas. La Molina, near Lima, concentrates on food and forage crops.

The Tingo Maria station, with 625 acres in experimental work, has introduced, tested, selected, and distributed many species of industrial complementary crops, such as oil palm, teakwood, rotenone, fibers (kenaf, abaca), and cinchona. Experimental work started with rubber in 1943. Increased emphasis has been placed on development of dairy cattle adapted to the jungle. The area surrounding Tingo Maria now exports large quantities of bananas, citrus fruits, tea, cocoa, corn and other products, while Peru has become almost self-sufficient in rubber and one of the leading producers of rotenone. At La Molina, several varieties of rust-resistant wheat have been developed, which have materially increased wheat production in the Sierra. Advances have been made in producing disease-resistant types of rice, potatoes and other vegetables, oats, sorghum, and alfalfa.

Agricultural Extension

Operation of a countrywide extension service, through 37 rural offices is aiding farmers in all phases of farm operations including technical assistance in crops, techniques, plant and animal insect control, use of fertilizers and insecticides, storage, marketing, and farm credit. In addition, extension agents act as advisers in home economics and to farm youth clubs.

The 37 rural extension offices cover the three agricultural zones of Peru; The coast, the sierra, and the jungle and are in direct cooperation with 350 area advisory committees with an organized membership reaching 1.5 million rural people. During the ten years in which the agricultural Servicio has been in operation, gross national annual production has been increased by more than a quarter million tons; major credit for this increase is due to the extension service. A considerable amount of crop improvement has been achieved on corn, potatoes, wheat, and cotton. Through the distribution of improved vegetable seeds in the home garden program, rural diet has been diversified and improved. Specialized veterinary services are available to farmers through the extension service. More than 1,000 boys and girls enrolled in farm youth clubs are assisted and guided in farm projects by extension agents.

AGRICU

Livesto

To  
C  
a  
C  
f  
W  
a  
m  
i  
o  
a

Soil

Rubbe

AGRICULTURE, FORESTRY AND FISHERIES (Continued)

Major Activities in FY 1954

Progress to Date

Livestock Improvement and Demonstration Farms

To stop the downward trend in meat production by stimulating increase of animal products, the Servicio makes breeding stock available and demonstrates feeding and care of practically all classes of livestock. The Servicio conducts area demonstration farms under special agreement with the Ministry of Agriculture with the objective of pioneering and colonizing large undeveloped areas of Peru. Operating pools of tractors and other power equipment for the purpose of assisting farmers in preparing and seeding their lands, harvesting their crops, and carrying on other operations in which power equipment is more efficient than the animal-drawn implements used by most Peruvian farmers.

The Servicio has imported more than 1,000 head of selected breeding cattle, 80,000 chickens, and smaller numbers of sheep, goats, and hogs for distribution to the Ministry of Agriculture and private farmers. In the Amazon Basin, an 18,000 acre tract has been set aside for cattle management demonstration. Six hundred acres have been cleared and planted to pastures, and have been stocked with imported Zebu and native cattle. On the eastern savannah slope of the Andes, 400 acres have been developed into a general crop and livestock farm, while in the Andes a high-altitude 35,000 acre sheep farm is devoted to developing means of using pastures located in altitudes of more than 9,000 feet. Since the inception of this program in 1947, Servicio equipment, now composed of 22 machinery pools, has cultivated 250,000 acres representing 350,000 hours of work in cultivation, terracing, leveling, etc. on a reimbursable basis. The Servicio also operates rice mills of the Peruvian Government to help small producers in areas where there are no other mills. The Peruvian Government has recently received a \$1.3 million loan from the International Bank for Reconstruction and Development to enlarge and intensify work in machinery pools.

Soil and Water Conservation

Agricultural engineering assistance is offered to farmers in protecting their land against erosion, in providing irrigation-water supplies, and in constructing drainage systems.

Production has been materially increased on irrigated lands through engineering assistance in laying out irrigation systems, application of water, and proper drainage practices.

Rubber Development

To study jungle lands of the upper Amazon with the object of expanding rubber production in Peru.

One technician has carried on investigations since 1943, and progress has been made in discovering disease-resistant wild varieties which it is hoped will produce high-yielding rubber trees.

AGRICULTURE, FORESTRY AND FISHERIES (Continued)

Major Activities in FY 1954

Progress to Date

Fisheries

Consulting services provided by fisheries mission which acts as an advisory, planning, and training group, assisting the Ministry of Agriculture to plan and carry out an aquatic and wildlife conservation program.

Prior to 1949, the Servicio constructed a small fishing fleet and refrigeration facilities for the Ministry. Since its arrival in 1949, the special U. S. fisheries mission has given assistance in the following projects: Organization of division of fisheries, building of a technological laboratory in Callao, planning of a wholesale fish terminal in Lima (later constructed under supervision of Servicio engineers), planning of a 75-foot fishery research vessel, survey of fresh waters of Peru and stocking of lakes and streams.

HEALTH AND SANITATION

Total U. S. Cost ---- \$431,800  
No. of U. S. Technicians ---14  
No. of Training Awards -----14

Objective: To assist the Ministry of Health of Peru in its programs to improve the general level of health by furnishing technical assistance in the operation of health facilities; by providing demonstration projects in the fields of industrial hygiene, vital statistics social welfare, housing, and nutrition; by expanding health education activities on a country-wide basis; and by training professionals and nonprofessionals in public health activities.

Major Activities in FY 1954

Progress to Date

Medical

The varied operations of this program are being continued. Chiefly among them are the establishment and operation of health centers, hospitals, dispensaries, medical and sanitary posts, and laboratories; operation of dispensary launches that serve jungle areas; campaigns against specific diseases such as dysentery, yellow fever and leprosy. Technical assistance to the health education program within the present Department of the School of Hygiene of the Ministry. Continuation of an industrial hygiene program designed to protect miners in the high altitudes in which the number of potential workers is decreasing steadily because of the ravages of silicosis. Technical assistance to the Institute of Nutrition, operated by the Ministry of Public Health and in the improvement of the government's social welfare programs.

A large number of individual projects have been completed and turned over to the Peruvian Ministry of Health for operation. Hospital and health centers have been built and the Ministry is maintaining them, although the cooperative Health Servicio has charge of operating them. Individual disease-control projects have been completed and are no longer in operation. Some 15 units of instructional material have been prepared as well as the preliminary text of a teachers' handbook on health and sanitation. Health educational materials have been prepared and distributed. An industrial hygiene laboratory has been established and is in operation. Other Latin American countries are sending personnel to be trained at this laboratory. Many recommendations submitted to the Cerro de Pasco Corporation have been put into effect.