A SURVEY OF

AGRICULTURE IN URUGUAY

ERS-FOREIGN 299

U.S. DEPARTMENT OF AGRICULTURE
ECONOMIC RESEARCH SERVICE

ABSTRACT

Since the early 1950's Uruguay's agriculture has stagnated because of unfavorable prices received for the major farm products, especially wool and beef, the leading exports. These prices reflect not only unfavorable world prices but also Uruguay's foreign exchange and export tax policies, aimed at skimming off profits from low-cost agriculture to support high-cost industries and social services. Uruguay's Agricultural Development Plan, 1965-74, proposed reforms to improve the position of agriculture, but not until 1968 was any serious effort made to carry out recommended adjustments of exchange rates and export taxes.

Measures in effect or under consideration that are aimed at increasing the productivity of agriculture include expanded extension and research services, supervised farm credit, land reform, and price policies to provide an incentive for raising output. A pasture improvement program initiated in 1960 has already demonstrated the profitability of improved livestock management. If these measures are carried out and economic and political stability is attained, agricultural production and exports may increase substantially during the next few years. The relative increase will probably be greater for crops than for livestock products, but wool and beef will undoubtedly remain the principal sources of farm income and foreign exchange.

Key Words: Agricultural development plans, Agricultural policies, Land reform, Pasture management, Farming practices, and Farm export taxes.

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PREFACE

Uruguay supplies both wool and beef to the U.S. market. Although U.S. agricultural exports to Uruguay are relatively unimportant in most years, they supplement Uruguay's production in periods of unfavorable weather in the Southern Hemisphere.

Publication of agricultural statistics by the Government of Uruguay since the early 1960's has been sporadic, although publications issued in 1967 on the Agricultural Development Plan, 1965-74, give data for the principal crops. Production and trade estimates for the mid-1960's in this report usually come from secondary sources. Although the data often differ slightly from one source to another, they are nevertheless believed to give a reasonably good indication of the level of supplies in any one year and the general trend over the years.

Metric units used in this report are given below with their equivalents:

1 metric ton (10 quintals or 1,000 kilograms) = 2,204.6 pounds

1 hectare = 2.471 acres

1 kilometer = 0.6214 mile

1 meter = 39.37 inches

1 square kilometer = 0.386 square mile

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SUMMARY

Since 1950, continued stagnation of agriculture in Uruguay has led to the disappearance of the prosperity and economic stability long characteristic of the country. The source of economic strength in 1950 was still cattle and sheep raising; wool and beef alone accounted for about four-fifths of Uruguay's exports in that year. And despite this heavy dependence on only two agricultural products, the country had achieved a relatively high per capita gross national product.

The stagnation that has occurred in the agricultural sector in the last 20 years is traceable chiefly to the unfavorable prices received by producers of major farm products--prices that reflect both the decline in world agricultural prices from levels reached during the Korean war boom and Uruguay's foreign-exchange and export-tax policies. These policies were designed to further the redistribution of incomes generated in low-cost agriculture for the purpose of supporting high-cost industries and social services. However, they discouraged investment in agriculture and agricultural output declined. Inflation became rampant, and the balance of payments deteriorated.

Uruguay's Agricultural Development Plan, 1965-74, which proposes policy and administrative reforms to improve agricultural conditions, includes recommendations on the exchange-rate and export-tax policies. Not until 1968, however, did the Government make a serious effort to adjust them.

Agriculture is still based for the most part on extensive production methods. Unit yields for crops and livestock are low, reflecting the failure to apply modern techniques on a broad scale. Proposed programs aimed at raising yields emphasize expanded extension and research services, supervised farm credit, land reform, and product and input prices that will provide an incentive to increase production. A pasture improvement program, initiated in 1960, has been successful in demonstrating the profitability of improving pastures and updating the care and management of cattle.

More than nine-tenths of Uruguay's agricultural area is in pasture, and production of livestock for beef and wool continues to be the leading farm enterprise. Wheat and oilseeds are the principal cash crops. Rice and oilseeds provide the principal crop exports except in good crop years, when wheat is exported also. Agricultural imports usually consist mainly of sugar, cotton, tobacco, yerba maté, bananas, and rubber. Sometimes, in years of poor grain harvests, wheat is the leading import.

The future of Uruguay's agriculture will depend on the degree of economic and political stability the country attains. Assuming progress is made in these areas and reasonably good weather conditions prevail, crop production and exports may well increase substantially over the next few years. Wool and beef, however, will doubtless remain the major sources of foreign exchange. If the foreign exchange and tax situations are dealt with as contemplated in the 10-year development plan, and the pasture improvement program continues, livestock products could spark economic recovery and growth in the coming years.

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Special Projects Branch
Foreign Regional Analysis Division
Economic Research Service

INTRODUCTION

The Oriental Republic of Uruguay is one of the world's important producers and exporters of wool, as well as a significant exporter of beef. Although crop production and light industry are important sectors of the economy, it is the livestock industry that has provided the foreign exchange, as well as the local funds, for Uruguay's development.

Uruguay, with an area of only 18.7 million hectares, is small compared with its two large neighbors--Argentina to the south and Brazil to the north. Its population of 2.8 million is small, too, compared with that of other countries in South America, but is homogeneous and has a long democratic tradition. Seemingly prosperous and socially advanced, the country was known as a paradise during the early years of this century. But a siphoning off of agricultural earnings to maintain a burgeoning welfare state, ever-increasing inflation, and declining levels of exchange earnings brought on a period of stagnation, particularly in agriculture. A start has been made, under the leadership of President Jorge Pacheco-Areco, toward the adoption of policies and programs that could lead to economic improvement.

Historical Relationships (1) (3) 1/

The war-like Charrua Indians peopled the east bank of the Río de la Plata and the Uruguay River (the Banda Oriental, as the area was first called) when the Spaniards first penetrated the region in 1516. Because there was no prospect of quick riches from mineral resources in the area, it was another hundred years before scattered settlements appeared. In 1603, the Governor of Paraguay reportedly shipped 100 cattle and some horses into the Banda Oriental. These animals multiplied and ran wild, and their descendants tempted the gauchos (cowboys) from across the river in Argentina and Paraguay to hunt them for their hides. Later in the 17th century, the Portuguese from Brazil began to move south. A struggle for the territory developed between the Spaniards and the Portuguese that was not settled until 1828, when Uruguay became an independent country--the República Oriental del Uruguay.

1/ Underscored numbers in parentheses refer to the numbered listings in the bibliography, p. 52. For additional details on historical developments and current problems affecting the agriculture of Uruguay, the reader is referred especially to items (1) and (3).

Internal strife continued, however, and the two political parties that are still important were soon delineated--the Colorados, representing mainly the urban population interested in industrialization and protectionism, and the Blancos, representing mainly the rural, conservative elements. A strong president came into power in 1903, however, who brought stability to the country and influenced the future social, political, and economic philosophy of Uruguay. He was able to implement many of his advanced ideas of government and social legislation during his second term of office, which began in 1911.

In Uruguay, the first two decades of the 20th century were characterized by political and monetary stability, extensive social services, and a generally high standard of living compared with that of other Latin American countries. The depression of the 1930's brought problems, and the Government began to encourage the development of light industries in an effort to reduce imports. Incentives and institutional support essential for agricultural development were neglected, however, and a progressive stagnation of agriculture was interrupted only briefly by the Korean war boom of the early 1950's. President Pacheco, who took office in December 1967, seems willing to take unpopular measures to stem inflation and foster economic recovery.

Constitutional changes have modified the structure of the Government several times. The latest change was in 1967, when executive responsibility was again vested in a single president. This change followed a 15-year period of rule by a nine-man executive council.

Uruguay is an active participant in international and Western Hemisphere organizations, particularly the United Nations and the Organization of American States (OAS), and is committed to the principles of democratic government. Montevideo, Uruguay's capital, is the seat of the headquarters of the Latin American Free Trade Association (LAFTA). 2/

Nature of the Economy

Uruguay's economy has always been based on its agriculture, particularly the livestock sector. Processed and unprocessed farm products account for more than 90 percent of the value of all commodity exports. Even in 1967, farm products brought in nearly five times as much foreign exchange as tourism, which is the only other important source of foreign earnings.

Lack of mineral resources has severely limited development of heavy industries in Uruguay. The development of light industries that began in the 1930's was based primarily on enterprises producing foods, beverages, textiles, and footwear--all using agricultural raw materials. Agriculture's share in both the labor force and the gross domestic product is less than a fifth and thus understates the importance of agriculture as a source of employment and income.

Agriculture developed rapidly during the early years of the 20th century, and supplied the capital for Uruguay's economic and social advancement. But

2/ Present members are Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Uruguay, and Venezuela.

since the mid-1930's, the Government has been strongly oriented to the needs of the industrial sector. Continued spending for industrial development and welfare led during the 1960's to large-scale deficit financing, runaway inflation, and drastic depreciation of the exchange rate. Between 1960 and 1964, gross domestic product (in constant 1963 prices) declined at a cumulative annual rate of 0.4 percent. Prices that had slightly more than doubled between 1945 and 1955 were almost 18 times as high in 1966 as in 1955 (1). Agricultural exports dropped in both volume and value.

During the late 1950's and early 1960's there was a growing awareness in Uruguay of the need for drastic action to correct the country's basic problems. An Investment and Economic Development Commission (Comisión de Inversiones y Desarrollo Económico, known as CIDE), created by the Government in 1959, began a program of research in 1962 which was to serve as a basis for economic development of the country. Cooperating in this work were various national organizations and institutes, as well as technicians from the OAS, the Economic Commission for Latin America, and the Inter-American Development Bank. A comprehensive national development plan, completed in October 1965 and covering 1965-74, calls for improved economic policies and increased public investment in high-priority fields, including agriculture. The importance of expanding agricultural exports to achieve economic growth and the fact that increased exports depend on more adequate pricing of farm products and higher agricultural output were recognized in the development plan. Legislative approval required to implement a number of the plan recommendations has been given. (See discussions later in this report on Agricultural Policies and Institutions, Land Reform, Major Crops, and Foreign Trade in Farm Products for details of the plan as they relate to agriculture.)

Physical Environment

Uruguay is located on the east coast of South America, entirely within the South Temperate Zone. Its area and population are somewhat larger than those of the State of Oklahoma. The Uruguay River, which flows south and empties into the Río de la Plata and then east to the Atlantic Ocean, forms the western and southern boundary between Uruguay and Argentina. The population is largely of European extraction, and more than half the people live in the southern coastal belt. The seaport capital of Montevideo is the social and economic center of the nation.

Topography--Uruguay, an extension of the Argentine Pampa, is principally treeless grassland. The southern two-thirds consist largely of undulating plains, interrupted by valleys of small rivers and streams and rounded hills. The northern third, an extension of the Brazilian highlands, is more rugged but elevations rarely exceed 300 meters. The grass-covered hills and tablelands (fig. 1) are best suited for permanent pasture, but some are capable of cultivation. The highland area turns south at its eastern end and continues as a low range of mountains called the Cuchilla Grande (Big Knife), which runs almost to the coast and divides Uruguay into two main watersheds, the larger being to the west. The principal river is the Río Negro, which flows from the northeast to the southwest and empties into the Uruguay. The Río Cebollatí, the main drainage east of the Cuchilla Grande, flows northeasterly and empties into Lake Merín.

Figure 1.--Pasture grass is lush when moisture is adequate. Cattle and sheep run together in the same pasture in Uruguay, unlike the practice in most countries, where sheep follow cattle.

Climate--Despite its location in the Temperate Zone, Uruguay has a climate that is considered humid subtropical. Frosts are frequent but snowfall is rare. Winters are usually mild; the short summers are warm--sometimes hot in the interior. July is the coldest month, with temperatures averaging about 50°F. January is the warmest month, with a temperature range from 70°F. at Punta del Este in the south to 80°F. at Artigas in the north. Windiness is a characteristic of the weather in both summer and winter. In summer, the winds temper the high midday temperatures; and in winter, the chill winds from the south bring periods of cold weather. In all seasons, sudden shifts in wind direction contribute to frequent day-to-day changes and considerable variation in temperature.

Uruguay usually receives sufficient rain during the year, with an annual rainfall of more than 40 inches in the northeastern two-thirds of the country and 30 inches in the southwest. Although the average rainfall by month appears to be well distributed throughout the year, there may be heavy showers or torrential rains, concentrated in a few days and followed by a month or more of dry weather. Annual averages also conceal erratic patterns of rainfall.

Occasional droughts cause severe damage to crops and pastures, and heavy rainfall in some years results in floods that destroy crops and livestock. Data for nearly five decades indicate that in about 1 year out of 6, summer rainfall is less than 6.5 inches and annual rainfall is less than 34.3 inches. When low rainfall is combined with high temperature and persistent, drying winds, drought conditions become severe. Also, loss of water through runoff and loss of soil through erosion are major problems, especially in cultivated areas.

Wet and dry periods and low temperatures sometimes occur in the same crop season, as in 1966/67, when excessive rain in December 1966 damaged wheat and other small grains. Dry weather in early 1967 stunted corn and pastures. Rains in May broke the drought, but were followed by freezes and then by floods. The harvest was poor and many animals died from starvation, disease, freezing, and drowning.

Even during normal seasons, however, Uruguay's climate is not favorable for some of the subtropical and temperate-region crops. Spring droughts and heavy autumn rains may damage the cotton crop, and extreme variations in rainfall and temperature affect tobacco. Corn does not thrive in Uruguay, although it is widely grown. Apple and grape output, especially in the south, is sometimes reduced sharply by drought, as was the case in early 1969. Grass appears better adapted to the climate than other unirrigated crops, but its growth is frequently arrested by periods of drought or cold weather.

Soils--Since no significant mineral resources have been discovered in Uruguay, the soil has been the country's principal source of wealth. Most of the soils are suitable for crop production, although the topsoil is of varying depth and in many areas it is subject to erosion. Brunizems, which cover about half of the country, are well-suited for grazing and in some places for crop production. They are fertile soils with thick, dark-colored silty or loamy surface layers over a somewhat finer textured but permeable subsoil. The Grumusols, which are most extensive in the northwest, are black to dark gray plastic clays; they are generally well supplied with plant nutrients, but are difficult to work because they are sticky when wet and hard when dry.

The association of Humic Gley and Alluvial soils is scattered in small areas near the coast and along the streams. The Humic Gley soils are dark-colored, poorly drained, but fertile soils with organic matter in the surface layer. Artificial drainage and water control, however, are required for satisfactory crop production from these soils. The Alluvial soils are well-drained and fertile, although many are subject to flooding. Planosols occur mostly on level or nearly level areas in the east. They have dark silty or loamy surface layers over a nearly impermeable clayey subsoil that makes artificial drainage necessary for satisfactory crop production. Lithosols and shallow or stony Brunizems on some of the rolling and hilly areas provide limited grazing but have little, if any, potential for crop production.

Uruguay has magnificent sandy beaches in the south and along the Atlantic Ocean that attract vacationers from neighboring Argentina and Brazil. Tourism is second only to agriculture as a source of foreign exchange.

People and Labor Supply

As mentioned earlier, the original inhabitants of the Uruguayan region were the Charrua Indians, a tribe of nomadic hunters. Spaniards from Argentina and Paraguay spilled over into the land in the 18th century, and Portuguese moved south from Brazil. Together they eliminated the Indians. Heavy immigration from Italy occurred during the 18th and early 19th centuries, and considerable numbers of French and other European nationals also settled in Uruguay. The population of 2.8 million is now largely of European extraction and is growing at an annual rate of 1.3 percent, a much lower rate than obtains in most countries of Latin America.

Number of farmworkers--The rural population of Uruguay is declining both in actual numbers and as a percentage of total population; about 45 percent of all Uruguayans live in Montevideo. Although the total population rose by 16 percent from 1951 to 1961, the number of people on farms of 1 hectare or more dropped some 11 percent during this period. The decline has generally been associated with lack of employment for family members on the many small farms and with labor-saving innovations on larger farms, including mechanization of crop production and shifts to a more extensive type of ranching. Low net returns after taxes from farming operations have also discouraged many farmers from making the improvements or using the labor necessary to ensure an efficient enterprise. Migration to urban areas has resulted.

Out of a total labor force of just over a million in October 1963, according to the latest population census, persons employed in agriculture, forestry, and fishing accounted for just under 18 percent. The total number of people actively employed in agriculture included relatively few unpaid family workers and still fewer women (7.4 percent and 4 percent, respectively). These percentage shares may understate the relative importance of family labor on farms because of the choice of enumeration dates and census definitions. Farm labor activity is slack in October, and had the census been taken at the peak of activity, in March-May, family members would no doubt have represented a larger share of the total farm labor force. Although not using a strictly comparable definition, the agricultural census of 1961, taken in May, lists 52,000 females working on farms, or 24 percent of the agricultural labor force on farms of 1 hectare or more in size. May ends the 3-month period during which farmers harvest corn, grain sorghum, rice, sunflower seed, peanuts, sweet potatoes, and grapes. In that period they also plant truck crops and prepare the land for and start sowing small grains and flaxseed. By October, on the other hand, most of the summer crops have been planted and winter crops are still growing. Livestock also require less labor in October, when shearing begins, than in May, when livestock are branded.

Uruguay's agricultural planning authorities estimate there were 185,000 economically active persons in the agricultural and forestry sector in 1963. They say there is still considerable unemployment and underemployment in rural areas in most months, and possibly as many as 4 percent of the workers could be classed as "surplus" even in the busy months of March, April, and May.

Working and living conditions--Families on small farms, whose land provides their principal source of employment and income, account for about

one-fourth of all families dependent on agriculture. These, as well as more than half the families dependent mainly on agricultural wages, live in poverty. Some farm wageworkers have a little land, usually cultivated on a subsistence basis. The great majority, however, neither own nor rent land. Farm wageworkers are considered inferior to small farmers on the social scale, but superior on the economic scale, as they generally have better food and housing.

Although most workers in agricultural processing industries are highly organized, the trade union movement has made little progress in the Uruguayan countryside. Sugar beet fieldworkers were organized in the late 1950's. The only other organization of rural workers, so far as is known, is the Movement for Rural Action, formed in the 1960's and believed to have few actual farmers or farm wageworkers as members.

Minimum farm wages are fixed by the Government but are low compared with industrial wages; and in remote areas, especially, the rates are difficult to enforce. An Executive Decree of December 31, 1968, established new levels of salaries and living conditions for rural workers, effective February 1, 1969. Rates for common laborers range from 234 to 328 pesos per day (the exchange rate during 1969 and early 1970 varied between 249.5 and 250 Uruguayan pesos per US$1). Living quarters and food are provided by the employer.

The poorest rural inhabitants live in rancherías, small shantytowns located mainly in the stock-raising north. These are inhabited partly by workers who hire out at sheep shearing and other seasonal jobs, and partly by the families of other workers who are themselves required to live on the farm where they work. The resident workers live in poor houses, are provided with meat and some other food that they must cook for themselves, and are allowed to see their families only once a week. The family members on the rancherías receive no rations. The estimated population of the rancherías in 1961 was 100,000, or more than one-fifth of the persons living on all farms and rancherías.

Labor productivity on farms reportedly averages about 20 percent below the level for the economy as a whole, but productivity in large ranching operations is said to be relatively high compared with that on farms and ranches of less than 50 hectares.

The literacy rate for Uruguay is estimated at 93 percent--the highest in Latin America--but this figure has little reality for the poorer farmers and farmworkers in the rural areas. People living on the rancherías, for example, could probably be classified as largely functionally illiterate. Although primary education is obligatory, education in rural areas is provided through only the third grade. Pupils from the poorer rural areas cannot afford to go to urban schools to finish even their primary education.

For the country as a whole, the level of food consumption is higher than in any other country in Latin America except Argentina. Estimated per capita calorie intake averages 2,885 calories daily, and animal protein consumption is high. Uruguay's meat consumption is estimated to be the highest in the Western Hemisphere, possibly in the world. But for the farmworker, particularly the seasonal worker, consumption of vegetables and fruit and other protective foods falls below the high average for the country. Even so, food supplies

available to the rural worker are greater than for his counterpart in most other Latin American nations, although his housing facilities probably are little if any better in quality.

AGRICULTURAL POLICIES AND INSTITUTIONS

Government policy in Uruguay over the years has sought to maintain a stable democratic system, provide extensive social benefits to Uruguayan citizens, foster exports, and diversify the country's economy by promoting its industry. Unfortunately, much of this effort has been at the expense of agriculture, which has received little attention or encouragement until recently. Particularly since the early 1950's, the Government has used exchange policy, including export taxes, to siphon off profits from wool and cattle production and, to a lesser extent, profits from oilseed and wheat output.

Despite some aid given to agriculture, especially during the 1960's, the net result of Government policies to encourage production and exports of farm products has been limited. According to official estimates for 1955-64, the value of farm output at 1963 prices exceeded the 1955 level in one year only (1963), and then by only 3 percent. Since 1963, it has remained below the 1955 level. Agricultural exports have also stagnated since the late 1950's, fluctuating in value from 40 percent (1959) to 69 percent (1965) of the record set in 1953.

The current National Development Plan, 1965-74, however, is giving increased emphasis to investment in the agricultural sector, and many of the infrastructure projects under construction or in prospect will benefit agriculture. Improvements in agricultural research, extension services, and education are planned; farm credit and crop-storage facilities are receiving increased financing; and nontraditional exports are being promoted. The program is being financed largely with outside assistance, partly from the United States and partly from international organizations.

Agricultural Policies

Despite the relative lack of emphasis it has placed on the agricultural sector of the economy, the Uruguayan Government has long given some assistance to agriculture in an effort to diversify production and enable the country to become more self-sufficient in food. The Government protects farmers against competition from foreign producers and establishes support prices or direct subsidies for various crops and livestock products (3). It also works through the National Subsistence and Price Control Council to hold down consumer prices. The Council operates its own stores and also controls the prices of fruits and vegetables in the weekly street markets of Montevideo and other towns.

Aid to agriculture has come to include not only price support but also some limited programs to improve farming techniques. To finance these programs, a small share of the total taxes collected on agricultural exports in the 1960's has been allocated to the Agricultural Development Fund. Funds have been used largely for fertilizer subsidies, but also for improved seed, cattle improvement, research, and the extension service, which is still in an early stage of development.

Although the extension service was expanded in 1967, it included after expansion only 48 agronomists, each assigned to provide crop information and assistance in one of the country's 48 crop areas. In 1967, there were 35 regional veterinary offices, each office covering 500,000 hectares and having a staff that included two veterinarians and 15 assistants. The Ministry of Agriculture has three experiment stations--one for livestock, another for field crop research, and the third for horticultural crop research. The agricultural and veterinary colleges at the University of the Republic of Uruguay in Montevideo also have experiment stations for crop and livestock research. Research findings on techniques and practices that would help farmers increase per unit yields have been meager thus far.

The Government requested the World Bank (International Bank for Reconstruction and Development) and the FAO (United Nations' Food and Agriculture Organization) some 20 years ago to survey the country's agricultural problems and recommend solutions. A joint World Bank/FAO agricultural mission went to Uruguay and in 1951 submitted a report that resulted in formulation of a livestock improvement program known as the Plan Agropecuario (Agricultural Plan), to be financed with the help of a World Bank loan.3/ Although the Bank and the Uruguayan Government agreed on the Plan Agropecuario in 1954, the loan agreement was not signed until the end of 1959 and the legislature took an additional year to ratify it. This plan has received enthusiastic support from most ranchers who participated and has been so successful that an additional World Bank loan was obtained in 1965 to extend the program to other ranchers. (See section on Livestock and Products later in this report.) Estimates indicate that as a result of improvements under the Plan Agropecuario, the annual average net return to the Uruguayan economy would increase about 17 percent over a 10-year period.

By the mid-1960's, the general stagnation in the agricultural sector had extended to other parts of the economy, and the Government began to seek ways to stimulate economic growth. A national plan of economic and social development, covering 1965-74, was recommended by the Government-appointed Commission of Investments and Economic Development (CIDE); by the end of 1968, the legislature had approved a number of the plan recommendations.

A major portion of this national plan is the Agricultural Development Plan, 1965-74, which proposes policy and administrative reforms for agricultural programs. One of the principal aims of this plan is expanded agricultural output as a basis for enlarged exports. It includes general outlines for 10 major farm programs: Research, extension, certified seed, agrarian reform, farm credit, and programs aimed at raising yields of grains, oilseeds, sugar, wine grapes, and livestock. Agricultural research and extension services are to be coordinated in the Ministry of Agriculture by the Agricultural Research and Extension Division, set up in the mid-1960's. It will facilitate not only the flow of research results to farmers, but also a reverse flow of information from farmers. The information from the farmers

3/ Spanish name is used for this plan to distinguish it from the Agricultural Development Plan, 1965-74, drawn up as a part of the national plan of economic and social development.

will help identify the problems that need research and the economic obstacles in applying improved techniques.

Additional details of the Agricultural Development Plan, 1965-74, are discussed in other sections of this report. Inflation has delayed implementation of much of the plan, including the important programs for expanding farm credit, linking it to greater use of inputs, and for intensifying agricultural research and experimentation. By forcing drastic stabilization measures in 1967/68, however, inflation hastened the devaluation of the exchange rate, an action essential to assure the adequate farm prices needed for agricultural development.

Farm organizations--Uruguay has two important general farm organizations for the larger ranchers and landowners: The Uruguayan Rural Federation, which speaks chiefly for the livestock producers and disagrees with the aims of agrarian reform; and the Rural Association of Uruguay, which functions primarily as an official registry for pure-bred stock. Operating on a smaller scale are the Federal League for Rural Action, and the National Commission for Rural Development. The former, founded by members of the Rural Federation and the Rural Association for the purpose of representing the small producers (9), became active politically in the early 1930's, and has had some influence in Government circles. Although the influence of the once-important National Commission for Rural Development, which represents the interests of organizations of small farmers, has declined, it is still considered one of the four main farm organizations. A fifth organization, the Farm Confederation of Uruguay, was formed in 1968 and is composed of 12 agricultural societies, most of which are for truck farmers.

Agricultural cooperatives and a few agricultural commodity associations have considerable importance in Uruguay. In 1967, there were 150 agricultural cooperatives with about 40,000 members, double the number of members in 1961. Most of these cooperatives are affiliated with the National Federation of Livestock and Crop Cooperatives; however, a small group of former affiliates has broken off to form a rival organization, the Uruguay Federation of Livestock and Crop Cooperatives. Membership in these societies is large compared with that of farm organizations in other Latin American countries. The cooperative movement, however, has not been particularly successful in representing the needs of small farmers, partly because of Government policies and legislation placing limitations on the capitalization of cooperatives. Under the Agricultural Development Plan, 1965-74, however, cooperatives are to be encouraged by proposed governing legislation that will ensure adequate financing.

The Rice Growers' Association has some influence on producer prices and the Poultry Association, South, has successfully exported eggs and frozen chickens since 1963 to Argentina, other South American countries, and Europe. The Farm Confederation of Uruguay, mentioned above, is in effect a commodity association. It helps truck farmers find markets at home and abroad, and assists in obtaining legislation to protect their interests.

Farm credit--The supply of credit to farmers in Uruguay is one of the keys to increased agricultural output. The more readily available sources

of credit to small farmers are the merchants selling agricultural inputs. These merchants sell their goods to small farmers on credit, with the provision that payment in full must be made at the end of the harvest season. Prices are often set at abnormally high levels for credit purchases, and the farmer usually must sell his products through the creditor immediately after harvest, when prices are at their lowest level. Private banks provide only production credit, with the loans repayable in 6 to 12 months. Interest rates from this source in the mid-1960's were generally 30 percent per year or more. Detailed data are not available either for private banking credit to farmers or for the credit advanced by merchants for purchases of fertilizer, seeds, and other production requisites.

The Bank of the Republic replaced the National Mortgage Bank as the main source of public farm credit in 1946 and has since been gaining in relative importance. In 1964, for example, it provided 88.1 percent of the farm credit advanced by public agencies, compared with 8.5 percent for the National Mortgage Bank and some 3.4 percent provided by the Plan Agropecuario. The regulations and procedures of the Bank of the Republic are cumbersome, however--there are some 34 different formulas for determining loan eligibility and conditions. The Bank's minimum interest rate in 1967 varied from 7.0 to 8.5 percent, and the repayment periods varied from 3 months to 4 years. The interest rate for the supervised credit advanced by the Plan Agropecuario, in contrast, is 3 percent per year. This credit, unlike so-called "production credit," is for long-term (7-year) financing for improvement and rehabilitation of pastureland. In addition to the three public agencies listed above, the National Colonization Institute provides some farm credit to encourage colonization.

In relation to agricultural output, total farm credit provided by public agencies has declined since the mid-1950's. Farmers apparently do not give priority to production inputs in assessing their credit needs, although wheat farmers increased the area sown to that crop in 1964/65 in response to a special credit program instituted by the Bank of the Republic. The Bank made loans to wheat farmers for seed, fertilizers, weedkillers, insecticides, fungicides, and harvesting and other related expenses (see section on Wheat). The Bank extended the program in 1965 to include flaxseed, sunflower seed, peanuts, malting barley, corn, and grain sorghums. Bad weather, however, prevented area expansion through the 1967/68 season.

The Agricultural Development Plan, 1965-74, stresses the increased use of supervised credit to encourage development of the agricultural sector.

Trade policies--The Uruguayan Government has long intervened in the country's agricultural import and export trade through tariffs for protection and revenue purposes (3). Since the 1930's, it has imposed strict exchange controls as well as quantitative import restrictions from time to time. Trade policy is influenced to a large degree by a traditional balance-of-payments deficit. Nonessential imports are discouraged by high duties, and the flow of imports is controlled by a series of graduated surtaxes, prior deposits, and exchange surcharges. Most of the basic import duties are assessed on an official valuation (aforo) expressed in Uruguayan pesos per kilogram. Occasionally, ad valorem duties are assessed based on the c.i.f. value. The

ad valorem surcharges are sometimes based on an "official" c.i.f. value determined by Uruguayan authorities (16).

Exchange controls involved multiple rates for imports and exports until December 1959, when the Government instituted a unified exchange market combined with surcharges and prior deposits on imports, and varying taxes (detracciones) on the traditional basic exports. The change in the system of controls formed a part of a stabilization program designed to halt inflation and correct the disequilibrium in Uruguay's balance of payments that had persisted since 1955 and had sharply reduced foreign exchange reserves. Inflationary pressure intensified, however, and the balance of payments continued to deteriorate. Inflation soared in 1967, accelerated mainly by a large budget deficit and poor weather for crops and livestock. The official peso buying rate per U.S. dollar, which stood at 11 pesos in 1963, was progressively raised to 250 pesos by the end of April 1968. A stabilization program, supported in 1967 by foreign assistance, was strengthened in June 1968 by a freeze on prices and wages and a tightening of controls on the sale of foreign exchange by banks and exchange houses. The cost of living rose only slowly during the latter half of 1968. Public resistance to tight controls in early 1969 was strong, but by the end of the year, the public began to appreciate the benefits of inflation controls and appeared more willing than before to accept them.

Proceeds from the export of the "basic" products (wool, flaxseed, sunflower seed, wheat, peanuts, and byproducts of these commodities, as well as beef, dry and salted cowhides, and sheepskins) must be delivered to the monetary authorities, who withhold the export taxes (retentiones or detracciones). Legislation adopted in October 1968 provides for the gradual replacement of these taxes on basic exports by a tax based on the production potential of the owners' land. This productivity tax, however, is to be collected initially through a system of withholding funds from export proceeds. Export taxes on wool are being replaced first, over a 3-year period which began October 1, 1968. Export taxes on other basic products are gradually being replaced also. The new tax structure is expected to stimulate agricultural production and exports, but its effects will be gradual over a period of years.

In 1953, Uruguay became a contracting party to the General Agreement on Tariffs and Trade (GATT). Certain tariff concessions by Uruguay under this agreement benefit U.S. products. Uruguay is also a charter member of the Latin American Free Trade Association. Uruguay both gives and receives preferential treatment on trade with other LAFTA members. Preferential treatment given by Uruguay includes reduced prior deposits on all imports and preferential tariffs on some (4).

Uruguay has several bilateral agreements. With particular reference to agriculture, for example, Uruguay and Brazil have signed agreements from time to time for the sale of Uruguayan wheat to Brazil. The last such agreement was signed on November 25, 1968, for a 1-year period.

Foreign Aid

Between 1949 and the end of 1968, Uruguay received the equivalent of more than US$280 million in external aid; about half came from international

agencies, notably the World Bank, and about half from the United States. Direct aid for agriculture accounts for a relatively small share of total external aid to Uruguay. It does include, however, financing for one of the more promising international agricultural aid projects, the pasture improvement program. World Bank loans in 1960 and 1965 for this purpose totaled US$19.7 million (see section on Livestock and Products).

Other large sums advanced for agricultural development include US$5.6 million from the Inter-American Development Bank in 1964 for crop and livestock production and expansion of the dairy industry; US$15 million from the United States in 1968 for importing agricultural machinery, equipment, seeds, pesticides, and other agricultural aids with the understanding that pesos generated from the sale of the imported commodities be used for farm credit; and US$5 million from the United States for fertilizer imports, authorized in 1966 but first used in 1968.

Portions of the two U.S. dollar loans are to be used to support the pasture improvement program. Also, the Uruguayan currency required by the World Bank and the Inter-American Development Bank for their agricultural programs have been partly supplied by using some of the peso proceeds from the P.L. 480 4/ sales agreements, signed in January and May 1968. Some of the peso proceeds are being invested in other agricultural projects. The first P.L. 480 investment agreement, signed in June 1968, provides for building soil-testing laboratories and other facilities for the soil work needed to develop a good basis for a land productivity tax and to assist farmers in improving their use of land.

The January 1968 P.L. 480 sales agreement, mentioned above, called for Uruguay to undertake a number of self-help measures, including legislation, passed in June 1968, on soil and water conservation, seeds, and fertilizer; legislation, passed in October 1968, establishing a tax on land productivity to permit the gradual reduction and eventual abolition of the existing export taxes on traditional export commodities; and legislation on tenancy and cooperatives, still under legislative study at the end of 1969.

Agriculture has received technical assistance as well as capital aid from both the United States and international organizations. FAO has been particularly active in providing technical assistance.

ORGANIZATION OF AGRICULTURE

Land Use and Types of Farms

Uruguay's topography, climate, and soils are relatively more suitable for grass than for field crops. Almost 90 percent of the total area of the country is classified as agricultural land, and some 90 percent of the agricultural land is in pasture (table 1).

Pasture area has apparently been increasing since the mid-1950's, with the share of crops for harvest dropping from 10 to 8 percent between the

4/ U.S. Agricultural Trade Development and Assistance Act of 1954.

Table 1.--Land use in Uruguay, 1956, 1961, and 1963

Use	1956 1/	1961 1/	1963 2/
	1,000 hectares		
Land in farms:			
Agricultural land--			
Planted for harvest	1,641	1,344	1,275
Arable pasture	728	767	na
Permanent grassland	13,589	13,988	14,325
Natural woods and forests	434	456	na
Total agricultural land	16,392	16,555	na
Other land in farms	367	434	na
Total land in farms	16,759	3/ 16,988	na
Other land	1,934	1,705	na
Grand total	18,693	18,693	18,693

na = data not available.

1/ Estimates based on census data as printed in the Agricultural Development Plan, 1965-74, publications. The plan publications appear to revise slightly some of the census data printed earlier (September 1963); these, in turn, differ somewhat from the annual estimates for 1956 and 1961. Both sources include in the area for pasture the natural woods and forests on farms.

2/ Estimates for 1963 were from the plan publications and are probably not strictly comparable with census data.

3/ Items do not add to total because of rounding.

Sources: (14) (15).

census years 1956 and 1961, and probably reaching a still lower level in 1963. Grains for food and for livestock feed occupy most of the area planted to crops for harvest. The Agricultural Development Plan for 1965-74 (mentioned earlier in Agricultural Policies) calls for the area in crops for harvest to recover at the expense of pasture, and for pastures to be improved (table 2).

At their highest level, the 1974 projections for both crop area and pasture area fall short of the potential area that would result if the soils were also managed so as to protect them from erosion and improve their natural fertility. The potentially arable area of almost 3.4 million hectares, in turn, falls short of the maximum cultivable area, estimated at from 5.2 to 6.6 million hectares. This maximum cultivable area, according to agricultural plan technicians, should be used in rotation between crops and pasture so that in any one year the maximum area that could be devoted to annual crops would total between 3.0 and 3.8 million hectares, or only 19 to 24 percent of the agricultural land (excluding woodland pastures). Even after deducting artificial pasture (annual grasses) from permanent pastures, there would

Table 2.--Projected land use, Uruguay, 1974, and estimated potential

Agricultural land	1974 projections 1/		Estimated potential 2/
	Without agrarian reform	With agrarian reform	
	1,000 hectares		
Arable land:			
Crops for harvest	1,676	1,786	2,985
Annual grasses 3/	600	465	390
Total arable land	2,276	2,251	3,375
Permanent pastures: 4/			
Artificial	810	1,500	2,400
Natural, seeded or fertilized	990	1,500	10,225
Natural, unimproved	11,924	10,749	0
Total permanent pasture	13,724	13,749	12,625
Total agricultural land	16,000	16,000	16,000

1/ 1974 projections are from the Agricultural Development Plan, 1965-74, and show plan technicians' projections of land use with and without adoption of agrarian reform measures recommended in the plan.

2/ Potential land use is estimated, assuming that soils are managed so as to protect them from erosion and improve their natural fertility, and assuming all agrarian reform programs are implemented.

3/ Obtained by deduction.

4/ Excluding natural woods and forests.

remain nearly two-thirds of the total agricultural land in permanent pastures that should not be plowed. All could be improved, however, by upgrading natural growth through seeding, fertilization, and controlled grazing.

Size and tenure of farms--A small number of large estancias and a large number of small farms characterize Uruguay's farmholdings. According to the 1961 agricultural census, 4.4 percent of the farms of 1 hectare or over had 1,000 hectares or more each and comprised some 56.9 percent of all land in farms. At the other extreme, almost 30 percent of the counted farms had 10 hectares or less and comprised only 0.7 percent of the total farm area (table 3).

Landownership is more highly concentrated than farm sizes would suggest. Many landowners possess two or more estancias, which may be operated separately or subdivided for renting as farm units or parts of farm units. Increasing numbers of landowners have been incorporating their properties, largely into personal or family agricultural societies (Sociedades Agropecuarias de Capital), to benefit from the tax exemptions and privileges granted such societies and to prevent the breakup of landholdings through inheritance. Agricultural societies controlled almost 10 percent of the farmland in 1963.

Table 3.--Number and area of farms, by size groups, Uruguay, 1961

Size group (hectares)	Number		Area	
	Total	Percentage of total	Total	Percentage of total
	Thousands	Percent	1,000 hectares	Percent
1-10	25.8	29.7	123	0.7
10-20	14.0	16.1	197	1.2
20-50	15.7	18.1	495	2.9
50-100	9.5	10.9	674	4.0
100-200	7.4	8.5	1,042	6.1
200-500	7.0	8.0	2,174	12.8
500-1,000	3.7	4.3	2,609	15.4
1,000-2,500	2.6	3.0	3,994	23.5
2,500 and over	1.2	1.4	5,680	33.4
Total	86.9	100.0	16,988	100.0

Source: (14).

The 1961 agricultural census does not reveal exactly how much farmland is owner-operated, either directly or through a hired manager, and how much is leased. Many of the larger landowners do not live on their farms, preferring to live in the city and hire a manager to operate their holdings or preferring to lease the land to tenants. Land is commonly leased for a fixed rent that is payable in cash or in kind; but a substantial number of farms are worked by share tenants, squatters, or other persons who use the land free of rent. Many of the large estates and very small farms consist in whole or in part of leased land. The intermediate size farms, however, have the highest share of their farmland leased or mainly leased. These farms also have most of the country's total area in crops for harvest, as shown in the following tabulation:

Size group (hectares)	Share of leased farms 1/ in specified size group	Share of crop area held by all farms in specified size group
	Percent	Percent
1-20	43	11
20-50	49	12
50-100	51	12
100-200	54	14
200-500	52	19
500-1,000	49	12
1,000-2,500	43	11
2,500 and over.	32	9
Total	42	100

1/ Or mainly leased farms.

This correlation between tenancy and crop raising is strongest in the mixed cropping and ranching region northeast of Montevideo.

The Agricultural Development Plan, 1965-74, lists the high level of tenancy and the uneconomic size of farm units as major obstacles to agricultural development. Extremely small farms generally mean overcultivation of the land and severe damage to soils, underemployment of the labor force, and resulting low levels of productivity and income. The operators of such farms are thus unable to afford technical improvements. Extremely large farms, on the other hand, generally mean underutilization of land, little use of labor, and low investment per hectare. The large holdings provide sufficient income so that the owner-operators have no incentive to make technical improvements. The plan authorities have examined farm size and tenure by regions in relation to production potential, availability of markets, and transportation facilities. They have estimated that almost 84 percent of all farms, accounting for 82 percent of the total farmland, have problems of size, tenure, or both (table 4).

Land reform--Many plans have been proposed in Uruguay to make land available to the landless, but until recently they have seldom produced results. Most land is privately owned (the state owns little land), and large landowners have been able to block attempts to break up estates for distribution to the workers of the land. In 1948, a land reform law authorized the acquisition of land for colonization through direct purchase or expropriations. The law established a National Institute of Colonization (Instituto Nacional de Colonización) to carry out its provisions. But in 1967, colonized land still represented less than 2 percent of total farmland.

Legislation to protect farm tenants has been somewhat inadequate. A 1954 law fixes the minimum contract period for tenancy at 5 years and gives tenants the right to a 3-year renewal. At the end of the 5-year period, however, the owner can decide to take over the holding and cultivate it himself or let it out to his close relatives. In reality, this provision limits the contract to a 5-year period. One-year extensions have prevented tenants from being evicted, but have not provided sufficient security of tenure to induce tenants to modernize their operations.

The Agricultural Development Plan, 1965-74, proposes an agrarian reform program that includes land redistribution, better tenancy conditions, and improvement of farm credit and extension and other agricultural institutions. The land reform measures include expropriation and redistribution of land to existing farm operators rather than to new ones; new taxation policies to promote the voluntary sale of some estate lands to new operators; and revision of tenancy legislation to prohibit tenancy except on a fixed-rent basis. This new tenancy legislation would lengthen the contract period from 5 to 8 years and the renewal period from 3 to 6 years, and would require that tenants receive adequate compensation for any improvements they might make.

The aim of the plan authorities is to provide farmers with economic-sized units, large as well as small. The proposal would thus affect some three-fourths of the area in farms with size and/or tenure problems, but little more than half of that area's farm operators. Land is not available, however, according to the authorities, to increase all existing small farms

Table 4.--Number and area of farms with size and tenure problems, Uruguay 1/

Type of problem	Number		Area		Average size
	Total	Percentage of total	Total	Percentage of total	
	Thousands	Percent	1,000 hectares	Percent	Hectares
Size only:					
Too small, all owned	27.7	32.1	881	5.2	32
Too large, all owned	1.2	1.4	3,633	21.5	3,028
Tenure only:					
All rented 2/	13.8	16.0	2,897	17.2	210
Part rented 3/	3.8	4.4	1,639	9.7	431
Size and tenure:					
Too small--					
All rented 2/	21.3	24.7	824	4.9	39
Part rented 3/	2.9	3.4	252	1.5	87
Too large--					
All rented 2/	0.7	0.8	1,731	10.2	2,473
Part rented 3/	0.6	0.7	2,035	12.0	3,392
Total with size and tenure problems	72.1	83.5	13,892	82.2	193
No size or tenure problems 4/	14.2	16.5	3,000	17.8	211
Grand total	86.3	100.0	16,892	100.0	196

1/ Though based on the 1961 agricultural census, data apparently do not refer to 1961, since not only the total area in farms but also its breakdown by land use differ somewhat from data in table 1, as well as from published census returns, which appear in table 3.
2/ By farmers working the land under some form of tenure other than ownership.
3/ By farmers owning some of the land they work.
4/ Farms neither too large nor too small, and owned entirely by their operator.

Source (15).

to economically viable units. Farmers on small holdings not covered by the land reform proposals would be expected to go into nonagricultural jobs that the Government hopes would be created in the process of the country's overall economic development.

Although the agrarian reform program was submitted to the legislature in 1964, only parts of it have been enacted into law and implemented. Legislation which was passed in late 1968, and which may encourage voluntary sale of estate lands, provides for taxes based on potential land productivity to replace export retention taxes on wool and eventually on other livestock products (see section on Trade Policies). In early 1968, the Uruguayan Government

signed a P.L. 480 sales agreement that called for passage of tenancy legislation and certain self-help measures. Such legislation was under consideration in late 1969.

Farm Practices

Most Uruguayan farmers practice an extractive type of agriculture, drawing on the natural fertility of the soil rather than replenishing and gradually improving it through proper crop rotations and good pasture management. Either monoculture or rotation of cash crops is the usual practice on almost all of the harvested land. Many farmers, however, plant some arable land to temporary pastures of grain or other annual grasses; oats account for most of the area in these forage crops. Cattle may be grazed on seedling grain when it is 3 to 6 inches high, after which the cattle are removed and the grain is allowed to head out and ripen for harvest.

Little progress has been made in adopting improved agricultural techniques or practicing soil and moisture conservation. Erosion is a problem, especially on the rolling lands in the arable farming areas. Heavy rains are common and considerable soil and water are lost through runoff. Yields have suffered because continuous cultivation and excessive overgrazing have reduced the productivity of the land.

The need for soil and water conservation was officially recognized before 1950, and during the 1960's the agricultural planning authorities again emphasized the problem of erosion. Because the greater part of the eroded land is in the zones of highest potential productivity, the Agricultural Development Plan, 1965-74, gave conservation high priority among the agricultural projects proposed. A Soil and Water Conservation Law was enacted in mid-1968, but funds and technicians to implement the law are still not available.

Mechanization--In the early 1950's, Uruguay probably had the most highly mechanized agriculture in Latin America, with crop production estimated to be 50 percent mechanized (3). Tractor numbers nearly doubled between 1951 and 1961, increasing from a little over 13,000 in 1951 to almost 25,000 in 1961 (table 5). Estimates indicate that tractor numbers on farms had increased to 32,680 by 1968. Tractor numbers per 1,000 hectares of cultivated land rose from about 7 to 14.5 during 1951-61. This ratio is high compared with that for Argentina, but is low compared with that for the United States. (Using "new tractor equivalents," Uruguay would have 6.8 new tractor equivalents per 1,000 hectares of cultivated land in 1961, compared with 27.7 for the United States.) The number of combines also increased between 1951 and 1961, though there was apparently no increase in the number of machines for bulk handling of grain and oilseeds, much of which still require manual handling (1). Substantial quantities of other machinery, including trucks, trailers, and pickups, were imported during 1951-61.

By 1967, however, reports indicated that a shortage of farm machinery was hampering crop production. To alleviate this shortage, the U.S. Agency for International Development (AID) granted Uruguay a dollar loan in 1968 to be used primarily for importing harvesting and other farm machinery and for expanding the output of wheat and flaxseed (traditional export crops), malting

Table 5.--Selected farm machinery and implements, Uruguay, 1951 and 1961

Kind	1951	1961
	Thousands	
Tractors	13.3	24.7
Plows	141.4	138.0
Disk tillers and harrows	16.2	91.6
Seed drills	9.0	11.4
Mowers	5.4	7.4
Binders, combines, and threshers	4.6	9.1
Corn shellers	25.6	24.7
Wool-shearing machines	1.8	2.5
Carts	68.9	68.2
Trailers, trucks, and pickups	8.2	20.8
Water pumps	na	17.0
Motors and electric generators	na	39.0

na = data not available.

barley, and grain sorghum. Importation of forage planting and harvesting machinery, fencing, and other grassland equipment has been facilitated since 1960 under the Plan Agropecuario. (See section on Agricultural Policies.)

Almost all farm machinery is imported; the principal supplier in most years has been the United States. Farm machinery is imported and distributed by trade organizations, many of which have local agencies throughout Uruguay to provide service and spare parts and make on-the-farm inspections.

Fertilizers--Consumption of commercial fertilizers in Uruguay rose sharply in the early 1960's above the level of the late 1950's (table 6); but even so, by 1964, farmers applied fertilizer to only 10 percent of the area in crops and 0.5 percent of the area in permanent pasture.

About two-fifths of the fertilizer applied to crops in 1964 was used for grains and oilseeds (32 percent for wheat alone); the rest was used for potatoes, sugar beets, sugarcane, truck crops, and orchards. Because pastures rather than field crops benefit from animal droppings, only small amounts of manure are applied to crops. Green manuring appears to be even more rarely practiced than rotation of cash crops with feed legumes to help restore nitrogen to the soil. The Government has encouraged fertilizer use by payment of direct subsidies and by making credit and technical assistance available. The 1960 Plan Agropecuario had a major role in stimulating use of fertilizer on pastures; as a result, use of fertilizer rose by more than 50 percent between 1962 and 1965.

Under the Agricultural Development Plan, 1965-74, grains, oilseeds, fruits, and vegetables, as well as pastures, are to receive sharply increasing applications of fertilizer, with the rate of increase somewhat less for crops than for pasture. The projected demand for 1974 indicates that 45 percent of

Table 6.--Commercial fertilizer consumption in Uruguay, averages 1956-65, annual 1966-68 1/

Period or year	Plant nutrient content			
	Nitrogen	Phosphoric acid	Potassium	Total
	1,000 tons			
Average:				
1956-60	2.2	8.0	2.1	12.4
1961-65	7.8	23.5	4.4	35.7
1966	8.3	21.4	4.6	34.3
1967	7.4	20.6	5.5	33.5
1968	10.0	23.0	7.0	40.0

1/ Data for years ending June 1966, 1967, and 1968 are from the United Nations Food and Agriculture Organization. They are not fully comparable with data for earlier years, which are from The Honorary Livestock Commission (15).

the total fertilizer used will be applied to pastures, compared with 33 percent in 1963. This gain will be in phosphate fertilizers alone. Research during the early 1960's proved that phosphate fertilizers are the key to pasture improvement; the high-quality legumes needed to supply the soil with nitrogen at low cost require added phosphate to do well in Uruguay.

Uruguay imports more than 95 percent of its fertilizer. Part of the imports are in the form of raw materials for the domestic fertilizer industry, which makes single superphosphate, grinds phosphate rock and basic slag, prepares fertilizer from bones, and compounds complete fertilizers. Bones are the only raw material obtained from domestic sources. Uruguayan output of phosphate fertilizer doubled between 1962 and 1966, but it accounted for less than one-third of the country's phosphate fertilizer consumption during that period. Projects for expanding domestic output include construction of a concentrated superphosphate plant.

Irrigation and watering points--The irrigated area of Uruguay increased by nearly two-thirds between 1951 and 1961 and by more than two-thirds from 1961 to 1968, but still represented only a small percentage of the seeded area. Rice and sugarcane, both grown largely under irrigation, account for most of the crops grown on irrigated land (table 7).

Principal sources of irrigation water are the Uruguay River and the Laguna Merín. Gravity irrigation is practically nonexistent; because of the lay of the land, water must be mechanically lifted to the fields. Livestock get water mainly by drinking directly from rivers, streams, and lakes; but artificial ponds and watering places supplied from wells pumped by motors or windmills are also important (fig. 2). By 1961, however, more than a third of all paddocks on farms had no permanent supply of water for livestock.

Table 7.--Seeded and irrigated area in selected crops, Uruguay, 1961, and estimated area irrigated, 1968

Crop	1961			Estimated area irrigated, 1968
	Area		Percentage of seeded area irrigated 1/	
	Seeded	Irrigated		
	1,000 hectares	1,000 hectares	Percent	1,000 hectares
Rice	17.8	17.5	98	35.0
Sugarcane	4.8	4.3	91	4.7
Truck crops	62.0	2.5	4	2.7
Tree fruits	31.3	1.4	5	1.5
Grapes	18.3	0.1	1	2/
Forage crops	619.9	0.5	3/	2/
Other crops	602.2	0.3	3/	0.9
Total	1,356.3	26.6	2	44.8

1/ Based on unrounded data.
2/ Included in other crops.
3/ Less than 0.5 percent.

Most irrigation works, as well as watering points, have been developed by private enterprise. The Government, however, has asked joint help from FAO and the Inter-American Development Bank in developing a program for large-scale construction of needed watering points. Uruguay is cooperating with Brazil and the U.N. Special Fund in preinvestment surveys for development of the Laguna Merín basin. Development would involve both irrigation and drainage in large-scale reclamation efforts for production of crops, particularly rice.

Improved seed--Use of improved seed in Uruguay was very limited until the 1960's, when various agricultural programs were instituted to encourage such use. During the early part of the decade, an efficient seed certification system was organized with FAO assistance. The 1960 Plan Agropecuario not only provided some seed but also advanced information on the varieties and strains of legumes and grasses that are specially adaptable to different parts of the country. The Plan also demonstrated that seed inoculation with rhizobia is essential to the successful establishment of legumes in Uruguay. The Honorary Livestock Commission improved inoculation techniques, made suitable materials available to farmers, and promoted the domestic manufacture of the inoculum. Government payments to lower the market price of improved seed also encouraged its use, as did the agreement by the Bank of the Republic to limit credit for seed wheat to seed that had been certified.

Under the Agricultural Development Plan, 1965-74, the use of good-quality seed is scheduled to spread to the main field crops and permanent pastures. Goals for 1974 call for certified seed output to cover a proportion

Figure 2.--Windmill furnishes the power to pump water from a well at this watering place for livestock.

of the demand for seed that ranges from 15 percent for rice and 20 percent for wheat and brewing barley, to as much as 85 percent for red and white clover.

Legislation passed in June 1968 requires that breeder, foundation, and registered seed be produced by Government experiment stations, and that the certified seed multiplied from registered seed be produced by selected farmers who are members of cooperatives under state control. Such certified seed is now grown by members of three cooperatives, all under the control of the experiment station for crops. This experiment station grows the breeder and foundation seed and has technicians who supervise the production and certify the seed for growers (1). The legislation also provides for regulating the sale of noncertified seed to ensure that it meets minimum standards for purity and germination; however, this regulation should result in little if any change from present practice. By 1967, the area sown with certified seed accounted for almost 15 percent of the total area in wheat and nearly 40 percent of the area in sunflowers.

Plant and livestock pest control--Diseases and insects, birds, and other pests cause much damage to crops in Uruguay. Losses can be high in years when conditions are favorable for some plague. For example, in 1940 stripe rust destroyed 50 percent of the wheat, and in 1961 rusts and septoria blight

together destroyed 30 to 40 percent. Annual losses from pests (other than disease) are estimated at 15 to 20 percent of the value of crop production. Livestock diseases and parasites are estimated to reduce the potential value of livestock output by one-third annually. Aftosa (foot-and-mouth disease), brucellosis, cattle ticks and tick fever, swine fever, and sheep scab exist almost everywhere.

The Government has made some effort to control both plant and animal pests, but has had more success with plant pests. Locust invasions led Uruguay and eight other Latin American countries to sign in 1934 the Inter-American Convention for the Fight against Locusts, and to establish in 1946 the Permanent Inter-American Anti-Locust Committee. This committee publishes annual reports on the locust situation in the countries concerned. Fortunately, Uruguay has been free from locusts for a number of years. During the 1960's, all parts of Uruguay were declared to be in a state of emergency for action against armyworms. A warning service that provides guidance as to when and what kind of pesticides should be used was established to alert citrus and other fruit growers about citrus pests.

Pesticide use is estimated to have tripled in volume from 1955 to 1961, leveling off thereafter. Of the total amount used in 1963, fungicides represented 54.3 percent, insecticides 33.4 percent, weedkillers 11.4, and chemicals for treating seed 0.9 percent. Fungicides are used mostly on vineyards, but also on some tree fruits, potatoes, and truck crops. Weed-killers, on the other hand, are used on field crops. In 1963, weedkillers were used on 54 percent of the wheat planted, 25 percent of the flaxseed, and 100 percent of the sugarcane. Insecticides are applied in both fields and orchards.

Legislation to establish control measures for aftosa dates back to 1961. It required that all centers of infection be reported and that all animals for market be vaccinated against the disease. Under an agreement with the United Kingdom in 1968, Uruguay, Argentina, Brazil, and Chile undertook not only to make aftosa a notifiable disease, but also to ban the movement of stock from any infected farm and to export only carcasses of animals that had been vaccinated against the disease.

Cattle tick eradication may be successful with measures already at hand. By 1950, strict dipping of cattle proved successful in clearing the area south of the Río Negro. A countrywide tick eradication effort, the last stage of which began in October 1968, is in progress whereby Government agents are authorized to go to farms and ranches and dip the stock. Drenching stock for internal parasites as well as dipping for external parasites (fig. 3) began to spread in Uruguay in the mid-1950's. More frequent drenching is needed in Uruguay, where sheep and cattle are pastured together, than in countries where sheep follow cattle on pastures. Where livestock are rotated, many internal parasites are destroyed, since some types seem able to adapt themselves only to one or the other host. Because poor feeding lowers resistance to both parasites and disease, the pasture improvement program mentioned earlier is likely to advance pest control. It should result in better and more balanced feed that should, in turn, produce animals better able to combat disease and parasites.

Figure 3.--On one of Uruguay's large ranches, sheep are being dipped to control external parasites.

The Agricultural Development Plan, 1965-74, calls for sharply stepped-up assaults on both plant and animal pests. Under the plan, fungicides, insecticides, herbicides, and chemicals for treating seed will be used more frequently than before. The plan calls upon the Government to take large-scale action, as it did in the campaign against the armyworm, to combat a number of serious pests, including scarab beetles, greenbugs, weeds considered to be plagues, and some birds such as doves and parakeets. The plant protection program also provides for intensified research on pests and their control, and for extension services to assist growers in the adoption of pest control measures.

Provision for improved animal health under the Agricultural Development Plan, 1965-74, emphasizes research and extension work also, as well as campaigns against contagious diseases and parasites, reequipment of the official diagnostic and control laboratory, organization of mobile units, and the establishment of a quarantine station to observe imported animals.

LIVESTOCK AND PRODUCTS

Uruguayan farming revolves around the production of cattle for meat and milk, and sheep for wool. Pastures cover most of the agricultural land. In 1962-64, livestock products accounted for more than two-thirds of the value of agricultural output and nearly nine-tenths of the value of agricultural exports. Wool is produced mostly, and beef partly, for export. Growth of export trade has been hampered by increasingly heavy taxes on exports of

Table 8.--Livestock numbers in Uruguay, by principal kinds, 1951, 1956, 1961, 1966, and 1967

Year	Cattle	Sheep	Hogs
		Thousands	
1951	8,154	23,150	259
1956	7,433	23,303	381
1961 1/	8,792	21,738	383
1966	8,400	21,800	380
1967	8,300	21,400	375

1/ Census returns for 1961 also show about 10,500 goats, 4,700 donkeys and mules, 478,000 horses, and 15,500 rabbits, as well as nearly 5 million head of poultry (excluding ducks and geese).

Sources: (4) for 1951, 1956, and 1961; (14) for 1966-67.

livestock products. Since the early 1950's, these taxes have impaired the competitive position of Uruguayan products abroad, while also depressing prices received by stockmen.

Numbers, Breeds, and Distribution of Livestock

Although total livestock numbers have changed little over the past 50 years, hog numbers rose to record levels in the 1960's. Although there is no marked trend for either cattle or sheep, 1967 cattle numbers appear to be up slightly and sheep numbers down slightly from the 1951 level (table 8).

Most of the cattle are beef breeds. The Hereford (fig. 4) predominates, accounting for more than half of all cattle in 1951, the latest year for which data are available. Shorthorn and Aberdeen Angus are also important beef breeds. In 1951, dairy breeds, principally the Holande (Holstein-Friesian), made up only 7 percent of all cattle. Crossbreeds are numerous and include crosses with the wild cattle of colonial days, all descended from the long-horned Spanish stock introduced in the early 17th century. This so-called native or criollo breed disappeared as such from commercial herds in the early 1870's. The opening of the export market in England gave impetus to the breeding of blooded stock and the upgrading of herds in Uruguay. Imports of the best animals available over the years have resulted in good foundation stock. Cattle are evenly distributed throughout the country (fig. 5), but the dairy breeds are heavily concentrated in the south.

Sheep outnumber cattle by about three to one, but are kept on far fewer farms than cattle. Sheep are not raised on small farms in the extreme west and southwest; elsewhere, however, they are widely distributed (fig. 6). Sheep breeds have shifted over the years from a predominance of Lincoln, Merino, and Romney Marsh to the Corriedale, in line with the continuing trend toward breeds that produce good meat as well as wool. The quality of the

Figure 4.--Hereford is the principal beef cattle breed in Uruguay.

stock is generally well-maintained on the larger ranches, but almost no attention has been paid on the smaller farms to culling out inferior animals.

Some hogs are found in every departamento of Uruguay, but the 10 southernmost had two-thirds of the sows and three-fourths of the young pigs counted in 1961 census returns. Breeds introduced since the midforties include the Landrace, but the relative importance of this breed is unknown. Hogs are raised for the domestic market, but consumption of pork is limited by the relatively high price of pork, which, in turn, reflects the scarcity and high price of feed grains.

Uruguay's poultry flock consists mostly of chickens but includes some turkeys, ducks, and geese. A large share of the chickens are of unknown breeds or are crosses. During the 1950's and 1960's, commercial producers imported stock from many countries, particularly Denmark, and breeds important before then (Rhode Island Reds, Leghorns, and Plymouth Rocks, together accounting for about one-fifth of the total) may have decreased in their share of total chicken numbers. About four-fifths of all farms keep some poultry, but less than half of these raise chickens on a commercial basis.

Horses were brought into Uruguay about the same time as cattle and sheep. The native or criollo breed was first crossed with northern European breeds

URUGUAY: NUMBER OF CATTLE, 1961

Figure 5

URUGUAY: NUMBER OF SHEEP, 1961

Figure 6

Figure 7.--Gauchos still use horses to round up cattle in Uruguay.

in the mid-1850's, but criollo horses still predominate. Horses continue to be used for handling livestock (fig. 7), but draft horses are steadily being replaced by machines.

Livestock and Pasture Management

Although stockmen became interested in upgrading their animals in the 19th century, many stockmen today continue to neglect feeding, care, and management of their animals. Since supplemental feeding of beef cattle and sheep is rare, the animals are usually ill-fed during part of the year. As a rule, farm animals are poorly sheltered, and each year many lambs and weaker sheep die only because they cannot survive in winter with no dry place to lie and not enough feed to eat. Insufficient feed and poor shelter lower resistance to disease and parasites and thus contribute to reduced fertility. Lack of both proper handling yards and shearing sheds results in unnecessarily rough treatment of stock and is another cause of animal loss in Uruguay. Because the routine practice of caring for the feet of sheep is neglected, sheep often find it so painful to walk that they do not feed properly. On some of the larger ranches, however, sheep do receive excellent shelter (fig. 8) and are treated for wounds or other sores caused by disease or insects (fig. 9).

Figure 8.--Sheep are properly housed on this large ranch in Uruguay.

Shearing methods in Uruguay are usually outmoded. Shearers do not take the fleece off in one piece, as is the more skillful practice, but remove it in several pieces. The quality of the wool is reduced because each fleece must be separately assembled, rolled, and tied before baling.

On most farms, chickens live under primitive conditions, sleeping in trees, barns, and places built for other uses. They are thus exposed to the abrupt changes in temperature that occur frequently.

Nearly all of the permanent pasture in Uruguay consists of unimproved natural grasslands that have suffered from overgrazing since the estancias were enclosed by boundary fences in the last quarter of the 19th century. Livestock producers began stocking their holdings with so many animals that pastures were closely grazed throughout the year (1). Stubble fields, which are used for temporary pasture, are not planted to grass but are left to self-seeded vegetation. At best, this growth can be considered no more than equal in forage value to natural pasture; at worst, it is said to be practically worthless (6).

Continued pasturing of cattle and sheep on the same land has led to severe shortages of feed, not only during prolonged droughts but also during periods of the dry season in summer and cold weather in winter, when grass

Figure 9.--Sheep on this modern ranch receive excellent care, and wounds and insect damage are tended promptly.

growth usually declines. Cattle suffer more than sheep when both are pastured together, since sheep keep the grass so short that cattle can get little to eat. By the late 1940's, seasonal shortages of livestock feed had spread to nearly all ranches and farms in Uruguay, damaging both livestock and natural grasslands.

The need for better pasture management was emphasized in the 1951 report of the joint World Bank/FAO agricultural mission (7) (see section on Agricultural Policies). The Plan Agropecuario, finally adopted in 1960 as a result of this report and financed by a World Bank loan, originally provided for some 600 medium-sized ranches that would serve as demonstration points from which knowledge and experience in modern pasture production would spread throughout the farming community. The number was first increased to 1,000 and then again to more than 1,400 in 1964.

Ranchers participating in the demonstration program are expected to follow the recommendations of the plan. The plan suggests that each ranch be subdivided into some 12 to 15 fenced and watered paddocks; that a fodder reserve be established for feeding animals in seasons of slow grass growth; and that an agreed-upon percentage of the ranch's pasture be improved by application of fertilizers and planting of better grasses. These ranchers receive loans to help finance the improvements and technical assistance and supervision from qualified technicians in implementing them. The Honorary Livestock Commission (Comisión Honoraria del Plan Agropecuario), set up in 1958, has technical responsibility for the plan.

The Commission and its experts, including advisers from New Zealand and Australia, have tried different methods of pasture improvement and have had unusual success thus far. In addition to the conventional and costly plowing of pastures before seeding and fertilizing, the Commission has tried sod seeding and oversowing. In sod seeding, legumes and fertilizer are implanted in the existing grass cover by means of a special machine. In oversowing, pellets of seeds and fertilizer are dropped on the ground, either by top-dressing equipment or from airplanes. By 1964, the Commission had determined which method should be used in the different parts of the country. It had also accumulated information about the legumes and grasses best suited to Uruguayan conditions. Improvement in actual pastures during 1960-64 was as follows:

	1,000 hectares
Permanent pasture improved by:	
Conventional method	81.3
Sod seeding	41.5
Oversowing	26.1
Total permanent pasture	1/ 148.9
Annual pasture	7.7
Refertilized pasture	84.5

1/ Book total 148.6. Excludes 70,000 hectares of improved permanent pasture on nonsupervised ranches.

As a result of widespread demand for extension of the Plan Agropecuario's pasture improvement program, the Government requested and obtained an additional loan from the World Bank in 1965. The loan was sufficient to include an additional 2,600 medium-sized ranches in the plan's supervised credit program, which provides loans for improvement and rehabilitation of pastureland (see section on Farm Credit). The loan also provided financing for the importation of "production essentials" for about 1,000 larger ranches whose operators could draw up development plans with the aid of the Honorary Livestock Commission but would arrange their own financing. "Production essentials" include livestock, seeds, fertilizer, subdivisional fencing, corrals, dips, and machinery for pasture establishment. By 1970, these 3,600 ranchers are expected to have started improving about 400,000 hectares of pasture (270,000 for supervised and 130,000 for nonsupervised ranchers).

The plan has interested landowners in the direct management of their land. They have found that full exploitation of new pasture-management opportunities requires a great deal of day-to-day, on-the-spot supervision and risky decisions that can be handled only by the owners themselves or by highly qualified managers. This realization reportedly has even led a number of participating ranchers to live on their properties or spend much more time on them than formerly, to take personal charge of the ranch development program (6). On the other hand, many landowners refused to take advantage of the new techniques, and led the Honorary Livestock Commission to advocate fiscal measures that would penalize underutilization of grazing lands.

The results of the plan indicate that the rewards of pasture improvement are substantial: participating ranchers have found that improved pastures can carry three to five times as many animals as unimproved pasture, and that the animals mature faster and produce more meat and wool per animal. It is already evident that pasture improvement is feasible and can be profitable in all parts of Uruguay. The Agricultural Development Plan, 1965-74, projects further expansion of pasture improvement, and sets the goal for improved pastures (artificial or seeded, fertilized or not) at 13 percent of total permanent pastures without agarian reform, and at 22 percent with agrarian reform (see section on Land Use and Types of Farms). Even at 13 percent, improved pastures would be nearly three times as large as the area to be improved by 1970 under the Plan Agropecuario.

The Agricultural Development Plan, 1965-74, also emphasizes improvements in the care of sheep, shearing practices, and marketing facilities.

Most of the large farms or ranches have stock pens and other facilities for auction sales of livestock for breeding and slaughter. Large numbers of animals are sold at these farm auctions or direct to packinghouses, but many of them are shipped to Montevideo for auction at the terminal market. A good road and rail network covers most of the livestock-producing areas; but in some places, unpaved roads become impassable after heavy rains. Many animals are still moved by rail, but truck transportation has been gaining in importance.

Livestock Products

Wool and beef are the principal products of Uruguay, and wool is by far the most important foreign exchange earner. Raw wool alone accounted for 30 percent of the value of the country's exports in 1963-66, and together with wool tops, it accounted for 45 percent of the total. Uruguay also contributes an appreciable share of world wool exports. It ranks as the fifth world exporter, following Australia, New Zealand, Argentina, and South Africa. Wool production in Uruguay fluctuates from year to year (table 9), depending largely on weather conditions. Shearing takes place in October-December. Most Uruguayan wool grades from 50's to 58/60's; 5 to 6 percent is of finer counts and about 5 percent is of lower counts. No carpet wool is produced.

The failure of wool output to expand may be due in large part to Government exchange rate and export tax policies. Speculation over expected changes in both the exchange rate and export taxes has been responsible for delayed marketing of wool.

The legislation passed in late 1968, gradually replacing the wool export tax by a tax on land productivity, should increase returns to efficient producers and stimulate modernization of the wool-growing business.

The United Kingdom ranks first among the major markets for greasy wool from Uruguay, followed at a distance by the European Common Market and the United States. The Common Market takes most of Uruguay's exports of scoured wool and tops.

Table 9.--Production and exports of wool, Uruguay, averages 1956-64, annual 1965-68 1/

Period or year	Production 2/	Exports			Available for domestic consumption 4/
		Raw	Tops 3/	Total	
	1,000 tons, greasy basis				
Average:					
1956-58	86	56	22	78	8
1959-61	83	58	21	79	4
1962-64	83	40	24	64	19
1965	76	60	19	5/ 79	5/
1966	88	42	25	67	21
1967	80	45	25	70	10
1968 6/	75	57	26	5/ 83	5/

1/ Estimates are mainly from Agricultural Development Plan, 1965-74, publications, which differ somewhat from estimates published by the United Nations Food and Agriculture Organization and by the U.S. Department of Agriculture.
2/ Wool year ending September of year shown.
3/ Including noils and waste.
4/ Includes wool for the manufacture of textiles for export. No adjustment has been made for changes in stocks.
5/ Exports, domestic consumption, or both drawn in part from stocks.
6/ Preliminary.

Source: (15).

Beef, including veal, accounts for about four-fifths of the red meat produced in Uruguay (table 10). Pork accounts for about 6 percent, and mutton and lamb make up most of the rest. Beef is also far in the lead among the red meats consumed and exported. Both consumption and exports have been influenced by Government policy regarding export taxes, prices, and slaughter and sales regulations. Despite restrictions on cattle slaughter for domestic consumption, exports of beef showed a steady drop from 1964 to 1967. Higher liveweight prices for cattle and lower carcass beef prices discouraged packers from slaughtering for export. With domestic sales curtailed, slaughtering of cattle and calves in 1966 and 1967 dropped to the lowest level since 1959. Scarcity of beef supplies in local markets increased the demand for mutton and pork, resulting in heavy slaughter of both sheep and hogs in 1967.

Total meat exports recovered somewhat in 1968 and early 1969, but developments during the remainder of 1969 created a chaotic situation in both the meat export and domestic markets. Traditionally, the United Kingdom and West Germany have been the major outlets for Uruguay's exports of frozen and chilled meat, and East European countries have taken substantial quantities since the mid-1950's. Effective June 15, 1969, however, the United Kingdom banned imports of Uruguayan meat because the meat-inspection service did not

Table 10.--Production and exports of red meat, Uruguay, averages 1951-65, annual 1961-67

Period or year	Beef and veal		Mutton and lamb		Pork		Total		
	Production	Exports 1/	Production	Exports 1/	Production	Exports 1/	Production	Exports 1/	Available for domestic consumption 2/
	1,000 tons, carcass weight								
Average:									
1951-55	295	56	60	6	20	3/	375	62	313
1956-60	261	58	51	3	20	3/	333	61	272
1961-65	313	98	51	5	24	0	389	103	286
1961	264	62	46	3/	24	0	333	62	271
1962	272	83	45	0	25	0	342	83	258
1963	321	97	46	1	25	0	392	98	294
1964	369	150	49	3	25	0	443	153	290
1965	341	97	71	18	22	0	434	115	319
1966	261	69	56	8	23	3/	340	77	263
1967	241	55	82	6	25	3/	348	61	287

1/ Includes carcass-weight equivalent of fresh, chilled, frozen, and prepared red meat. Excludes offals, fats, and live animals. There are no recorded imports.
2/ No adjustment has been made for changes in stocks.
3/ Less than 500 tons.

Source: Mainly U.S. Department of Agriculture publications.

meet U.K. standards. Furthermore, a second British measure, effective October 1, 1969, prohibits imports into the United Kingdom of all beef-with-bone from countries where aftosa is endemic. Uruguay currently does not have equipment to bone its beef for export. Uruguay is hiring additional meat inspectors, but the service does not yet meet standards set by the United Kingdom. The packing plants are contemplating the purchase of new equipment to modernize their operations, but funds are low and machinery for boning is not yet available. The loss of the U.K. market is being partly offset by increased shipments to Italy. Although the United States is the largest export market for Uruguay's cooked beef, it does not admit chilled or frozen meat from Uruguay because of the prevalence of aftosa.

Another difficulty during 1969 was the 4-month strike affecting workers in much of the packing industry. This strike disrupted the domestic market for meat as well as export sales. Until recently, the only large slaughter-house serving the domestic market was the Government-owned National Slaughter-house (Frigorífico Nacional), known as Frigonal. Established in 1928 in Montevideo, Frigonal was forced to sell meat at low, Government-fixed prices and to support an unduly large staff, said to be chosen and maintained through political patronage. As a result, Frigonal operated at a financial loss, and, for this reason, was closed intermittently during 1968 and 1969. The plant was also closed during the strike, and independent packers supplied Montevideo with meat during that period.

Beef consumed in other towns and rural areas comes mainly from municipal slaughterhouses. Slaughter of cattle on farms is restricted by the warm climate prevailing most of the year; the beef is eaten at once or preserved by drying it in the open. Though mutton is consumed on sheep-raising farms, beef is preferred by people living in the countryside, as in the cities.

Commercial production of milk in Uruguay averaged 698 million liters annually in 1963-67. According to the 1961 agricultural census, commercial output accounted for more than two-thirds of the milk produced. Commercial production is estimated by the Milk Producers' Cooperative (Cooperativa Nacional de Producción de Leche, known as Conaprele), a Government agency established in 1935. It has the exclusive right to provide milk for Montevideo, and more than a fifth of the nearly 10,000 commercial dairy farms send their milk to the cooperative to supply the fluid milk sold there. Prices are fixed at farm, wholesale, and retail levels. Members of the cooperative have a daily sales quota for which they receive the fixed price. Milk sent in excess of the quota and used mostly for manufacture brings lower prices. Fluid milk sold in the capital has long been pasteurized.

Some milk plants in the interior also buy from producers on a quota basis; others buy on the basis of quality and butterfat content. Producers may sell raw milk to retailers for direct distribution to consumers, as well as to milk plants for pasteurization. Producers also make a substantial part of their milk into butter and cheese. Estimates for commercial output in 1967 of 2,100 tons of butter, 3,200 tons of cheese, and 1,120 tons of casein show a drop from 1965 of some 16 percent for butter and cheese and 37 percent for casein. During the mid-1960's, casein ranked first among dairy product exports and dried milk ranked first among such imports. The United States

bought most of the casein and gave Uruguay most of the dried milk through charitable organizations, under P.L. 480.

Hides, skins, and tallow are the most important byproducts of the livestock industry. Production of tallow, used largely in the domestic soap and shortening industries, averaged about 24,000 tons annually in 1962-66. Hides and skins are important export items. Output depends on the commercial slaughter of animals. Annual average production in 1962-66 included almost 1.5 million cattle hides and calf skins and 3.1 million sheep and lamb skins. The principal export outlet shifted from the United Kingdom in the early 1950's to the European Common Market in the mid-1960's.

Output of both eggs and poultry has increased substantially since 1950. Production in 1963 totaled 358 million eggs (about 16,000 tons) and nearly 5,500 tons of poultry meat. Foreign trade in eggs has been erratic. Imports were necessary in the 1950's. Exports shot up to more than 2,000 tons in 1965, but dropped in 1966 and 1967, and the 1965-67 average was 1,300 tons. Poultry was exported in 1964, with shipments of 360 tons, but these exports also declined, averaging 115 tons in 1965-67.

MAJOR CROPS

Except for grass, the major crops produced in Uruguay are grains and oilseeds; they are also the leading export crops. The country produces much or most of its supply of sugar, fruits, and vegetables, but imports the bulk of its cotton and tobacco.

Grains

Wheat--Uruguay's major staple food grain, wheat, leads among harvested crops in area sown. It became an important export crop in the 1950's. Exports dropped off in the 1960's and imports were needed in 1964 and 1968, when production was unusually low (table 11). Argentina was the principal supplier in 1964, and the United States in 1968, when shipments were made under the P.L. 480 program. Brazil is usually the principal market for Uruguayan wheat in years of exportable surplus.

Output has declined primarily because former high-cost producers have abandoned wheat growing in the face of less remunerative prices maintained by the Government in the 1960's compared with previous years. Since 1963, support prices have been supplemented by a Government loan program designed to encourage the use of better production techniques. As mentioned earlier in the section on Farm Credit, loans are made by the Bank of the Republic to wheat farmers for operating expenses for such things as seed, fertilizer, pesticides, and harvesting. Improved production techniques are also emphasized in the Agricultural Development Plan, 1965-74. Authorities believe that unit yields can be raised substantially and costs lowered sufficiently to permit Uruguayan wheat to compete successfully in world markets.

Wheat is grown mostly in the south and west (fig. 10) on farms of over 100 hectares. Aside from a high degree of mechanization and the increased use of certified seed since 1964, wheat farmers have been slow in adopting

Table 11.--Wheat area, production, and net trade, Uruguay, averages 1951-65, annual 1961-69

Period or year	Area sown for grain 1/	Yield per hectare 1/	Production 1/	Net trade 2/	Available for domestic consumption 3/
	1,000 hectares	Quintals		1,000 tons	
Average:					
1951-55	623	9.8	610	-248	362
1956-60	630	8.1	513	-149	364
1961-65	448	9.5	424	-7	417
1961	523	7.9	413	4/	413
1962	436	8.5	372	4/	372
1963	400	11.3	452	-47	405
1964	354	6.7	237	+115	352
1965	527	12.3	646	-104	542
1966	527	10.4	547	-132	415
1967	380	8.7	329	-11	318
1968	222	6.5	144	+246	390
1969	5/ 520	9.0	468	na	na

na = data not available.

1/ Crop harvested beginning in November and ending in January of year shown. 2/ + = imports; - = exports. Includes flour in terms of wheat. 3/ No adjustment has been made for changes in stocks. 4/ Less than 500 tons. 5/ First official estimate.

Sources: (13) (19) and U.S. Department of Agriculture publications.

improved techniques. Few of them prepare the land adequately for sowing, which takes place in April-August. The growing crop is seldom fertilized or protected against pests other than weeds. Armyworms, greenbugs, and scarab beetles inflict heavy damage, as do doves. The major diseases affecting wheat are septorias and rusts. Harvesting takes place in November-January, almost everywhere by combine; bulk transport from the field, introduced in the mid-1960's, has begun to spread in Colonia and Soriano departamentos.

Rice--A major export crop, rice is second only to wheat as a food grain in Uruguay. Both output and exports have trended upward since 1960, as shown in the following tabulation (in thousands of tons, milled rice basis):

	Production	Exports
1959-61 average	36	10
1962-64 average	40	22
1965-67 average	68	33
1968	68	18
1969	82	na

Commercial rice production is relatively new in Uruguay. The country relied substantially upon imports for its rice until the mid-1930's, when the crop first met domestic needs. The Government then prohibited imports,

URUGUAY: WHEAT AREA, 1961

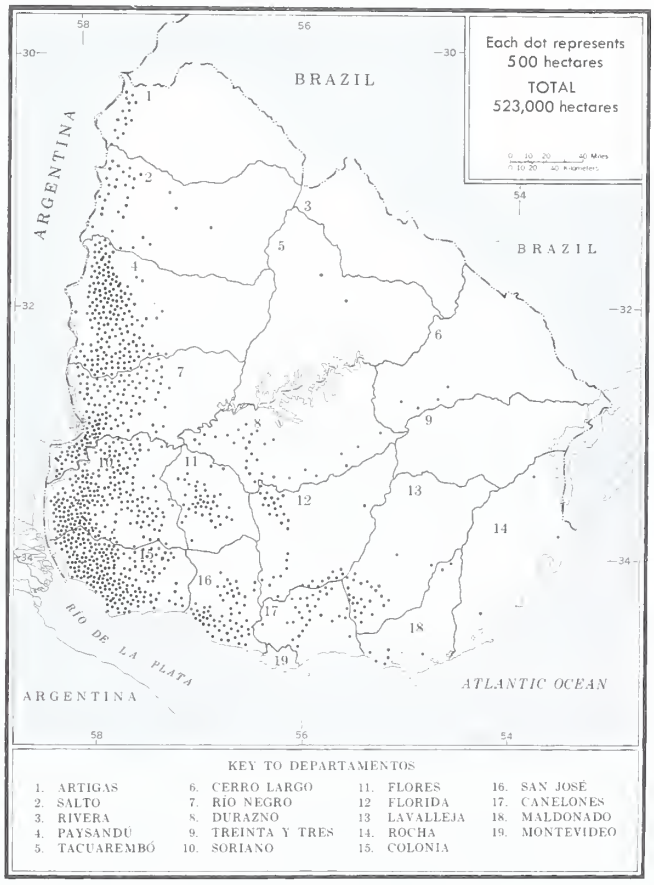

Figure 10

Table 12.--Corn area, production, and net trade, Uruguay, averages 1951-65, annual 1961-69

Period or year	Area sown for grain	Yield per hectare	Production	Net trade 1/	Available for domestic consumption 2/
	1,000 hectares	Quintals	1,000 tons		
Average:					
1951-55	291	6.9	201	-2	199
1956-60	316	5.5	173	+27	200
1961-65	228	6.4	147	+16	163
1961	277	7.9	220	+7	227
1962	267	5.8	155	+9	164
1963	236	8.7	206	+1	207
1964	167	5.4	91	+61	152
1965	192	3.3	63	+4	67
1966	213	8.4	180	+1	181
1967	226	5.2	117	+9	126
1968	162	4.3	69	3/ +164	233
1969	175	5.4	95	na	na

na = data not available.

1/ + = imports; - = exports. Sources available for the 1960's vary as to amounts imported and exported, but the variations are small in relation to the supply available for domestic consumption.

2/ No adjustment has been made for changes in stocks.

3/ Estimated total for year, including small quantities of cornmeal in corn equivalent.

Sources: (13) (19) and U.S. Department of Agriculture publications.

except for seed, and controlled producer prices through the 1959/60 season. Prices have since been fixed by agreement between the independent rice growers' association and the large rice mills, which own and operate large farms, extend production credit to independent growers, and buy nearly all their output. The area sown to rice, which had never exceeded 20,000 hectares before 1963, averaged 33,000 hectares in 1967-69.

Foreign markets for Uruguayan rice in the 1950's included the United Kingdom, Canada, and Belgium. Canada's demand for high-quality rice has reportedly resulted in a shift in production away from short-grain japonica varieties to the so-called medium-grain Carolina and long-grain Double Carolina types. These two latter types together represented 80 percent of production in the mid-1960's, compared with about 50 percent a decade earlier. By the mid-1960's, however, little if any Uruguayan rice was going to Canada. Major markets in one or more of the years 1963-67 included Chile, Cuba, Czechoslovakia, and Peru.

Table 13.--Oats and barley, area, production, and net trade, Uruguay, averages 1951-65, annual 1966-69

Period or year	Area sown for grain 1/	Production 1/				Net trade 2/	Available for domestic consumption 3/
		Oats	Malting barley	Common barley	Total		
	1,000 hectares	1,000 tons					
Average:							
1951-55	94	41	20	10	71	+1	72
1956-60	127	40	23	8	71	+7	78
1961-65	131	65	21	13	100	4/	100
1966	158	97	17	11	125	-11	114
1967	134	72	28		100	-1	99
1968	84	33	14		47	5/ +2	49
1969	129	74	42		116	5/ -6	110

1/ Crops harvested beginning in November and ending in January of year shown.
2/ + = imports; - = exports. Data in sources available for the 1960's vary as to amounts imported and exported, but the variations are small in relation to the supply available for domestic consumption. The series shown above for 1961-69 includes the barley equivalent of exported barley malt.
3/ No adjustment has been made for changes in stocks.
4/ Less than 500 tons.
5/ Estimated.

Sources: (13) (15) (19) and U.S. Department of Agriculture publications.

Most of Uruguay's rice is grown under irrigation in the Laguna Merín basin by independent growers who rent medium-sized to large farms. Growers usually cultivate the land for 3 years and then move to new and more fertile fields. On large, owner-operated farms, rice is rotated with pasture to rebuild fertility of the soil and to eradicate weeds. Renters and owners almost never apply fertilizer, but they do practice disease and insect control. The principal insect pests include armyworms and beetles; blast and other fungus diseases are of some importance, but none is widespread. Rice is planted in November and harvested in March-July, mostly by combine.

Corn--Production of corn dropped below the 1951-60 average in most years from 1961 to 1969 (table 12), but corn remains the principal feed concentrate grown in Uruguay. Corn is grown in all departamentos of the country, but concentration is heaviest in the south. Seeding takes place in September-October and harvesting in April-June. Unit yields are low, partly because the rainfall pattern is not favorable to the growth of corn, and partly because growers generally use primitive methods in cultivating the crop. Labor is primarily by hand, seeds are of poor quality, no fertilizer is used,

Table 14.--Flaxseed, area, production, seed crushed, and trade, Uruguay, average 1961-65, annual 1961-69

Period or year 1/	Area	Production of seed	Seed crushed	Oil produced	Exports, in oil equivalent 2/
	1,000 hectares	1,000 tons			
Average:					
1961-65	133	76	58	23	20
1961	118	67	55	21	26
1962	144	96	55	20	16
1963	160	84	75	32	32
1964	132	62	39	15	10
1965	113	71	67	25	17
1966	63	38	29	10	16
1967	66	40	33	12	11
1968 3/	51	27	21	8	11
1969 3/	70	45	na	na	na

na = data not available.

1/ Data are for production years ending in February except that trade data are for calendar years.

2/ Includes linseed oil and oil equivalent of flaxseed exports. Sources available show no imports of either.

3/ Preliminary, except for 1968 area and production.

Source: (19).

and growers practice no pest control. Production of certified hybrid seed began only in 1966/67.

A small part of the corn crop is consumed as green corn or as polenta, a dish made from cornmeal flavored with cheese or tomato sauce. Many rural families serve this dish in place of bread (3). Small quantities of corn also go into the manufacture of starch, alcohol, or corn oil. Most of the crop, however, is fed to poultry, hogs, and horses--about two-thirds of it to animals on the farm where it is grown. The small 1968 crop made unusually large imports necessary. They were purchased under P.L. 480 on long-term dollar credit. Agricultural planning authorities contemplate that corn for feed will be replaced by grain sorghums, which are considered better suited to Uruguay's climate. Projections for 1974 place corn output at only 55,000 tons, compared with 149,000 for grain sorghums.

Other grains--Uruguay produces oats, barley, and a small amount of canary seed for feed. Grain sorghums increased in importance during the 1960's, with output rising from 1,000 tons in 1961 to an estimated 48,000 tons in 1969. Small amounts of rye for food and some barley for malting are also produced. All the small grains are winter crops, planted in May-August and harvested in November-January.

Table 15.--Sunflower seed, area, production, seed crushed, and trade, Uruguay, average 1961-65, annual 1961-69

Period or year 1/	Area	Production of seed	Seed crushed	Oil produced	New trade, in oil equivalent 2/
	1,000 hectares	1,000 tons			
Average:					
1961-65	132	73	62	17	3/
1961	153	98	90	21	3/
1962	137	80	33	19	3/
1963	141	87	86	20	-3
1964	121	63	62	14	+1
1965	110	39	37	9	+2
1966	122	99	97	22	3/
1967	164	76	75	17	3/
1968 4/	109	49	47	11	3/
1969 4/	91	65	na	na	na

na = data not available.
1/ Data are for marketing years beginning April 1 except that trade data are for calendar years.
2/ + = imports; - = exports. Sources show no trade in sunflower seed.
3/ Believed to be insignificant, if any.
4/ Preliminary, except for 1968 area and production.

Source: (19).

Oats are planted more for forage than for harvest as grain. They rank first among annual grasses sown on arable pasture but have recently gained favor as a feed grain. Output of oats during the 1960's fluctuated at levels high above the averages for 1951-55 and 1956-60 (table 13). In most years, Uruguay imports small quantities of oats, but in 1965, 1966, and 1969 the country became a net exporter of oats. Neither malting nor common barley has shown any marked trend in production.

Oilseeds--Flaxseed and sunflower seed follow grains in importance among crops cultivated in Uruguay. Peanuts are grown also, but in small quantity. Flaxseed is important in the country's export trade. Exports are chiefly in the form of linseed oil for industrial use, plus cake and meal for livestock feed. Sunflower seed and peanuts are grown almost entirely for the domestic edible-oil market, though a substantial part of the residues from pressing for oil are exported as cake and meal. Oil output from these seeds is usually supplemented by small quantities of imported edible and industrial oils. Imports of edible oils usually exceed exports, but there is a substantial net export of industrial oils.

By the late 1960's, production of both edible and industrial oils had dropped well below the levels prevailing in the early 1950's (tables 14 and 15).

Although output and exports of flaxseed have declined, Uruguay has retained its position as the world's fourth largest exporter of flaxseed and linseed oil, following Argentina, Canada, and the United States. Flaxseed is a winter crop, grown chiefly in the west and south. Seeding takes place in July-October and harvesting in December-February. Most of the crop is crushed for oil and by-products, largely for export.

The first sizable harvest of sunflower seed was in 1940. The crop gained popularity as a source of cooking oil during World War II, when olive oil was not readily available (3). The area sown declined in the early 1960's, showed considerable recovery in 1966 and 1967, but declined sharply again in 1968 and 1969. Unlike flaxseed, sunflowers are a summer crop, planted during the last quarter of the calendar year and harvested the following April-May. Unit yields are low, largely because of the practice of sowing sunflower seed as a second crop on wheat stubble and because of losses from disease, insects, and birds. The spreading use of certified seed is helping to reduce losses from disease, and experiments under way emphasize breeding for higher yields per hectare and for higher oil content of the seed.

Other Crops

Both sugar beets and sugarcane are grown in Uruguay, but beets account for more than four-fifths of total sugar output. Sugar production has risen sharply since the early 1950's, but Uruguay remains heavily dependent on imported sugar. Brazil is the principal source of raw sugar. Domestic output rose from an annual average of 21,000 tons (refined sugar equivalent) in 1953-55 to 51,000 in 1963-65, but declined again in 1967/68 to 31,000 tons. Imports declined from the mid-1950's to the mid-1960's, but in 1967/68 still represented 40 percent of total consumption (95,000 tons), compared with 76 percent of consumption (86,000 tons) in 1953-55.

The Government has fostered development of the domestic sugar industry by subsidizing it with profits obtained by selling imported sugar at the fixed, higher domestic price. Prices are set by the price-wage council, established in December 1968 to regulate wages and prices of the private sector.

Wine grapes are grown by nearly 8,000 producers, most of whose farms are small. Wine-grape varieties account for over 95 percent of all vines planted, and production of grapes for wine represented 9 percent of the value of total crop production in 1963 and more than 3 percent of the value of total farm output. Production in the mid-1960's averaged 130,000 tons annually. The Government fixes the price of grapes, usually after the size of the crop has been determined and a study of production costs and demand factors has been made.

Other fruits produced in Uruguay include citrus fruits and apples, peaches, pears, quinces, plums, melons, and olives. Total production of these fruits was estimated at 134,000 tons for 1963. Except for citrus fruits, which have been exported in small quantities only since 1961, all output of fruits is consumed in Uruguay. Imports of fruit exceed exports because bananas, which do not grow in Uruguay, are imported. Citrus fruits are produced mostly in the subtropical north. Deciduous fruit production, on the other hand, is highly concentrated in the south.

The value of vegetable production in 1963 almost equaled that of wine grapes and table fruits combined. Vegetables are grown in some quantity in all departamentos of Uruguay, but potato production is concentrated in the south. Potatoes and sweet potatoes are the principal vegetables, accounting for almost 40 percent of the value of vegetable output in 1963; dry legumes added another 4 percent. The remainder covered a wide variety of Temperate Zone vegetables. Domestic production provides most of the vegetables consumed except for potatoes and dry legumes. Lentils and chickpeas are mostly imported, but beans and peas--which account for the bulk of legume production--are grown in sufficient quantity in most years.

Potatoes for both table consumption and seed have been imported. During the 1950's and early 1960's, imports consisted mainly of consumption potatoes, but in 1963-65 they were mostly for seed. Drought conditions in 1967-69 again necessitated imports of potatoes for consumption. Canada and Western Europe have been the traditional suppliers of potatoes. The United States sent potatoes to Uruguay for the first time under a P.L. 480 agreement signed in May 1968, which called for shipment of 50,000 tons of potatoes and potato products valued at US$3.5 million (including ocean transportation).

Uruguay produces little cotton, and imports most of the raw material for its textile industry. The usual harvest does not exceed 450 tons, lint basis.

FOREIGN TRADE IN FARM PRODUCTS

Agricultural products have always formed all but a small part of Uruguay's export trade. During 1960-67, their share of total exports, by value, dropped at one point to as low as 93 percent, but averaged 95 percent. In contrast, Uruguay's agricultural imports are relatively unimportant, usually accounting for less than a fifth of the value of all imports.

Exports

Although Uruguay trades with many Western Hemisphere countries, Western Europe has been and remains the chief outlet for Uruguay's traditional exports--wool, meat, and hides and skins. These items together accounted for almost 88 percent of the value of agricultural exports in 1967 (table 16). The leading market is the European Common Market, which takes large quantities of hides and skins, linseed oil and other oilseed products, and wool and meat. The United Kingdom is usually the leading single-country market for wool and meat. Spain became an important buyer of meat in the mid-1960's, and Eastern Europe took both wool and meat in the late 1950's and again in 1967. The United States is a good outlet for Uruguayan wool, and the Latin American Free Trade Association (see Agricultural Policies) is a major outlet for grain because of sales to Brazil.

Imports

A large part of the country's agricultural imports regularly consist of cotton, yerba maté, tobacco, bananas, coffee, and rubber (table 17); these are all products that are either not produced domestically or are produced only in small quantities. Sugar is another significant, regular import item. Grain

Table 16.--Value of Uruguay's agricultural exports, by commodity and country of destination, 1967 1/

Commodity	Peso value, f.o.b.								Percentage of total, by commodity	Total U.S. dollar value, f.o.b.
	European Common Market	United Kingdom	United States	LAFTA 2/	Spain	Eastern Europe 3/	Other	Total		
	Millions								Percent	Millions
Wool 4/	2,190	2,705	600	509	5/	644	1,515	8,163	54.0	79
Meat and preparations	554	533	142	174	1,278	234	661	3,576	23.7	40
Hides and skins	997	25	192	12	7	112	186	1,531	10.1	13
Grains and preparations	17	2	0	642	0	179	208	1,048	6.9	7
Oilseed products 6/	285	49	0	9	5/	3	48	394	2.6	3
Other	31	33	77	202	4	4	51	402	2.7	6
Total	4,074	3,347	1,011	1,548	1,289	1,176	2,669	15,114	100.0	148
	Percent									
Percentage of total, by destination	27.0	22.1	6.7	10.2	8.5	7.8	17.7	100.0	...	...

1/ The Uruguayan peso fell heavily in value during 1967. Standing at Ur$75.90 per US$1 at the beginning of the year, the official buying rate was depreciated at intervals to Ur$98.00 per US$1 on August 11 and then to Ur$198 per US$1 on November 6. Dollar export value by commodity, as percentage of total agricultural export value, differs somewhat from the percentage of total calculated on peso value.

2/ Latin American Free Trade Association includes Argentina, Brazil, Bolivia, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Uruguay, and Venezuela.

3/ Includes the Soviet Union.

4/ Includes tops, noils, and wool waste; other exports mainly from Denmark (460), Hong Kong (454), and Japan (172).

5/ Less than 0.5 million pesos.

6/ Oil cake and meal and linseed oil.

Source: (11).

Table 17.--Value of Uruguay's agricultural imports, by commodity and country of origin, 1967 1/

Commodity	Peso value, c.i.f.								Total U.S. dollar value, f.o.b.
	LAFTA 2/					United States	Other	Total	Percentage of total, by commodity	
	Brazil	Paraguay	Argentina	Other	Total					
	Millions								Percent	Millions
Cotton	44	187	1	3/ 168	400	0	0	400	17.2	5
Yerba maté	330	7	3	1	341	0	0	341	14.6	4
Tobacco	38	45	10	29	122	123	4/ 67	312	13.4	4
Fruits, nuts, vegetables, and preparations, including hops	151	6	9	5	171	15	4/ 75	261	11.2	3
Seeds for sowing	5/	0	22	5/	22	16	4/ 193	231	9.9	3
Sugar and preparations	216	0	0	0	216	0	0	216	9.3	3
Coffee	57	43	3	14	117	0	3	120	5.1	1
Rubber	2	0	0	0	2	0	4/ 90	92	3.9	1
Corn and oats	13	0	76	0	89	0	0	89	3.8	1
Other	55	28	85	11	179	6/ 9	83	271	11.6	2
Total	906	315	210	228	1,659	6/ 163	511	2,333	100.0	27
	Percent									
Percentage of total, by origin	38.8	13.5	9.0	9.8	71.1	7.0	21.9	100.0	...	...

1/ The Uruguayan peso fell heavily in value during 1967. Standing at Ur$76.20 per US$1 at the beginning of the year, the official selling rate was depreciated at intervals to Ur$99 per US$1 on August 11 and then to Ur$200 per US$1 on November 6. Dollar import value by commodity, as percentage of total agricultural import value, differs somewhat from the percentage of total calculated on peso value. 2/ Latin American Free Trade Association includes Argentina, Brazil, Bolivia, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Uruguay, and Venezuela. 3/ Mainly from Mexico (92) and Peru (71). 4/ For "Other," tobacco came mainly from Cuba (27), the Philippines (19), and the Dominican Republic (15); fruits, nuts, vegetables, and preparations, mainly from Poland (45) and Romania (22); seeds for sowing, mainly from Australia (106), Canada (60), and the European Common Market (17); and rubber, mainly from West Malaysia (87). 5/ Less than 0.5 million pesos. 6/ These data evidently do not include P.L. 480 shipments.

Source: (12).

imports are usually small, but in years of poor grain harvests, wheat for consumption may lead all other imported farm products.

Most of Uruguay's agricultural imports come from Western Hemisphere sources. Brazil sends sugar, bananas, and yerba maté. Paraguay, Mexico, Brazil, and Peru have supplied most of the cotton since the formation of LAFTA. The United States was a major source of cotton imports in earlier years; in 1960-61, for example, somewhat more than 70 percent of Uruguay's raw cotton came from the United States. Although the United States is the leading source of tobacco, in 1967 the LAFTA countries together sent almost as much (in value) as the United States did. Because of shipments under P.L. 480, the United States ranked first as a source of wheat imports in 1960 and again in 1968.

U.S. Trade with Uruguay

The United States and Uruguay produce many of the same commodities, and agricultural trade between the two countries is small in most years. Although the major share of U.S. exports to Uruguay consists of nonagricultural products, they include agricultural inputs such as fertilizers and farm machinery. Even so, exports of agricultural items total more than US$2 million in most years (table 18). In years of poor harvests in Uruguay, they are substantially above this level; in 1960, for example, they totaled almost US$24 million. United States purchases of agricultural products from Uruguay vary widely from one year to another, but the trend appears to be downward (table 19).

Tobacco is traditionally the principal U.S. agricultural export to Uruguay, although cotton outranked it in value in 1959, and both cotton and grains outranked it in 1960. U.S. grain exports to Uruguay in 1960 reflected the heavy demand for foodstuffs resulting from unusually poor harvests of wheat and corn in Uruguay. The P.L. 480 program for the sale of U.S. agricultural commodities for foreign currency and on long-term credit, has been instrumental in maintaining sales to Uruguay. An exception is sales of cotton, a commodity Uruguay now purchases largely from LAFTA members. Preferential treatment for commodities moving within the LAFTA community has practically eliminated Uruguay's imports of U.S. cotton.

The first shipments to Uruguay under P.L. 480 were in 1956 under barter arrangements. The first sale for foreign currency was in 1959. From the beginning of the program in 1956 through 1967, the dollar value of sales under P.L. 480 totaled US$40.6 million, or 65 percent of U.S. agricultural exports to Uruguay in those years. Exports under U.S. Government programs jumped sharply in 1968. Most of the total was accounted for by sales of wheat and corn for long-term dollar credit (wheat, US$12 million; corn, US$4.8 million).

Agricultural imports usually account for more than three-fourths of the total value of U.S. imports from Uruguay. In 1967 the principal agricultural products imported into the United States--wool and meat--were both down significantly in value from the level of the previous 2 years. Drugs, herbs, roots, and similar products are the only U.S. imports from Uruguay classed as complementary, or noncompetitive with products of the United States. Although carpet wool is considered complementary, Uruguay produces mainly apparel wool, which is

Table 18.--Value of U.S. exports to Uruguay, averages 1952-66, annual 1962-68

Commodity	Average 1952-56	Average 1957-61	Average 1962-66	1962	1963	1964	1965	1966	1967	1968
	1,000 U.S. dollars									
Tobacco	1,281	2,261	1,450	2,319	1,112	2,237	564	1,016	947	681
Cotton	314	2,853	115	473	0	0	0	100	0	0
Grains and preparations	1/	4,339	113	94	79	117	164	110	201	17,750
Food for relief or charity 2/	1/	70	357	220	379	448	450	289	492	211
Seeds, except oilseeds	132	105	202	77	62	280	365	226	383	135
Hops	1/	128	141	160	118	159	119	150	146	170
Other agricultural	584	692	294	339	263	306	250	314	296	959
Total agricultural	2,311	10,448	2,672	3,682	2,013	3,547	1,912	2,205	2,465	19,906
(Under P.L. 480 and other assistance programs)	(3/ 77)	(6,900)	(924)	(1,663)	(623)	(878)	(801)	(653)	(801)	(18,422)
Nonagricultural	33,795	32,128	27,695	40,554	27,862	31,836	17,505	20,717	19,049	18,371
Total exports	36,106	42,576	30,367	44,236	29,875	35,383	19,417	22,922	21,514	38,277

1/ If any, included in other agricultural.
2/ Excludes grains and preparations.
3/ $387 in 1956 only.

Sources: (16) (17).

Table 19.--Value of U.S. imports from Uruguay, averages 1952-66, annual 1962-68

Commodity	Average 1952-56	Average 1957-61	Average 1962-66	1962	1963	1964	1965	1966	1967	1968
	1,000 U.S. dollars									
Wool	23,373	8,262	12,611	11,732	11,465	2,838	19,828	17,192	4,746	9,832
Meat 1/	4,422	4,194	5,024	5,833	5,431	4,899	5,466	3,492	1,691	2,779
Animal hair	447	235	476	428	440	441	480	589	498	548
Casein or lactarene	2/	133	495	269	583	551	513	560	308	238
Drugs, herbs, roots, etc.	2/	91	84	49	81	71	98	120	96	145
Other agricultural	1,765	367	470	218	288	391	509	947	771	546
Total agricultural	30,007	13,282	19,160	18,529	18,288	9,191	26,894	22,900	8,110	14,088
Nonagricultural	8,701	4,057	5,947	5,408	6,075	3,593	6,618	8,041	5,835	7,879
Total imports	38,708	17,339	25,107	23,937	24,363	12,784	33,512	30,941	13,945	21,967

1/ Mainly canned beef.
2/ Included in "other agricultural," which also includes hides and skins.

Source: (16).

competitive with wools produced in the United States. In 1965, when U.S. wool imports from Uruguay reached a value of US$19.8 million, they represented 8.6 percent of all supplementary wool imports. The reduced value in 1967 was 4.6 percent of apparel wool imports into the United States.

AGRICULTURAL PROSPECTS

Uruguay has excellent potential for greatly expanding its agricultural output. Few farmers now use modern agricultural techniques, and unit yields of crops and livestock are therefore low. But policies and programs set forth in the Agricultural Development Plan, 1965-74, seem in general well designed to intensify agricultural production. These plans call for an increase in agricultural output by 1974 of at least 38 percent over the 1963 level, as shown in the following projections (1974 as percentage of 1963):

	Crops	Livestock	Total agriculture
Without agrarian reform	160	126	138
With agrarian reform	194	137	158

Although program delays make the goal for 1974 seem high, the projected growth rate of 4 to 5 percent a year is realistic, given a reasonable degree of economic and political stability in the country. The plan may well overstate prospective increases for some crops, while understating them for livestock products. There is doubt, for example, as to the technical and economic feasibility of more than doubling wheat output in a decade, mainly through increased yields. Some technicians believe that many parts of Uruguay are marginal for wheat production, considering the climatic, hydrological, and soil conditions. On the other hand, successful pasture improvement has already been demonstrated under the Plan Agropecuario. Livestock output may well rise faster than projected by 1974. In any case, if weather conditions are reasonably good for crops over the 1969-74 seasons, total crop output may also increase sharply. The year-to-year outlook for both crop and livestock production in Uruguay is affected by the wide extremes in weather conditions. The 1968 wool clip, for example, was cut by severe drought that reduced pasture feed and encouraged marketing of sheep; also, the heavy rainfall of December 1968 damaged the wheat crop that was being harvested, and reduced average yields per hectare.

Basic problems remain to be solved. Major factors still limiting progress include tax policies, scarcity of farm credit, limited extension services, and inadequate technical knowledge among farmers. The low level of technical knowledge reflects a lack of interest and incentive on the part of absentee landowners and wealthier farm operators. Among poorer farmers, it is often associated with poor general education as well as poor vocational education.

The Agricultural Development Plan, 1965-74, however, makes recommendations that, if carried through, could provide the structure for agricultural growth. Included in the recommendations are improved extension services, expanded research and experimentation, and increased agricultural credit. Action already taken to ensure realistic product and input prices through maintenance of adequate foreign exchange and tax policies needs to be continued and strengthened.

BIBLIOGRAPHY

(1) Brannon, Russell H.
1968. The Agricultural Development of Uruguay. Ford Foundation Series. Frederick A. Praeger, New York.

(2) Chebataroff, J.
1960. Tierra Uruguay: Introducción a la Geografía Fisica, Biologica y Humana del Uruguay. Montevideo.

(3) Farnworth, Constance H.
1952. The Agriculture of Uruguay. U.S. Dept. Agr. For. Agr. Bul. No. 3.

(4) Food and Agriculture Organization of the United Nations.
Various years. Production Yearbook. Rome.

(5) _____.
Various years. Trade Yearbook. Rome.

(6) Hirschman, Albert O.
1967. Development Projects Observed. The Brookings Institution, Washington, D.C.

(7) International Bank for Reconstruction and Development, and the Food and Agriculture Organization of the United Nations.
1951. Agricultural Development of Uruguay. Wash., D.C., and Rome.

(8) London Economist.
November 2, 1968

(9) Pan American Union.
1964. Inventory of Information Basic to the Planning of Agricultural Development in Latin America: Uruguay. Wash., D.C.

(10) Schmidt, Orvis A.
1966. The World Bank Group in Latin America. Address before the Canadian-Inter-American Association, March 2. Montreal.

(11) Uruguay. Bank of the Republic.
1967. Exportaciones Cumplidas, Nos. 10 and 11. Montevideo.

(12) _____.
1967. Importaciones Cumplidas, Nos. 26 and 27. Montevideo.

(13) Uruguay. Ministry of Livestock and Crops.
Various issues. Boletin Informativo. Montevideo.

(14) _____.
1963. Censo General Agropecuario 1961. Montevideo.

(15) _____.
1966-67. Plan Nacional de Desarrollo Economico y Social. "4-Plan Desarrollo Agropecuario." Vols. 1 and 2; and "5-Estudio Economico y Social de la Agricultura en el Uruguay." Vols. 1 and 2. Montevideo.

(16) U.S. Dept. of Agr., Economic Research Serv.
1952-67. U.S. Foreign Agricultural Trade.

(17) _____.
1967. 12 Years of Achievement under P.L. 480. ERS-Foreign 202, and Supplement, 1968.

(18) U.S. Dept. of Commerce.
1968. Foreign Trade Regulations of Uruguay. OBR-68-79.

(19) U.S. Foreign Service.
Various dates. Despatches and reports from the American Embassy, Montevideo.

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