THE DEVELOPMENT OF THE URUGUAYAN REGION
A study of regional planning.

by

EDUARDO BARAÑANO DA COSTA

Submitted in Partial Fulfillment of the Requirements for the Degree of MASTER IN CITY PLANNING from the Massachusetts Institute of Technology January 1943
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THE DEVELOPMENT OF THE UNDOCUMENTED MIGRANT
A study of recent immigrant history
by

HUNCHO HATANEO DE COSTA

in partial fulfillment of the
Requirements for the Degree of
Master of City Planning

May 1943
Dean Walter H. McCornack  
School of Architecture  
Massachusetts Institute of Technology  
Cambridge, Massachusetts

Dear Dean McCornack:

Submitted herewith for your approval is a thesis entitled "The Development of the Uruguayan Region," presented in partial fulfillment of the requirements for the degree, Master in City Planning at the Massachusetts Institute of Technology.

It is my hope that the goals to which I have aspired in this work, namely, the development of planning in Uruguay by applying the successful methods of planning in different regions of the United States, and the better understanding of Uruguay in the United States, will be fulfilled in the future.

It would be impossible to properly give acknowledgement to the many who have supplied information or otherwise helped in the preparation of this study. Many officials in Uruguay and others have gone to much trouble to furnish accurate information. Without their cooperation this project would have been impossible.

The author has been especially privileged to study under Professor Frederick Adams and Professor Justin Hartzog. To their instruction and guidance he owes much.

Very respectfully yours,

Signature redacted  
Eduardo Barañano da Costa.
During my third term at the City Planning Division of the Massachusetts Institute of Technology, I carried out a study of South America to determine a reasonable division of the continent into regions. On the basis of this study a system of regions covering all South America was proposed. The regions were delimited on the basis of physical, anthropological, economic and other factors.

Uruguay, along with sections of Brazil and Argentina, comprise Region 6. The thesis which follows is a study of the problems of the future development of Uruguay in relation to the region of which it is a part.
COMPOSITE REGIONS.
1. Andean region.
   a. North
   b. Centre
   c. South
2. Amazonas lowland.
3. Orinoco lowland and plains.
4. Guaiian Massis
5. Brazilian plateau.
   a. North
   b. North-east
   c. East
   d. Central
6. Uruguay region
7. Pampa region
   7a. pre-cordillera
10. Chilean region
    a. South chilean.
    b. Centre
    c. Desert.
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GENERAL ANALYSIS

REGION NUMBER 6
The outlook of planning in the United States is "for better development and for better channels for human activity, for suppression of slums and super-density of our cities." The outlook for the Uruguayan region must be somewhat different: for the creation of new activities, for the increase of population and a constant renovation of old practices in the utilization of natural resources.

The outlook of the United States is: we must rebuild our cities, we must convince our citizens to utilize the natural resources for the welfare of the whole community, we must organize our great capacity for action.

In the Uruguayan region the outlook should be: we must create new cities, we must create new industries to obtain a better distribution of human and economic resources of the nation.

Having studied in the United States for more than one year, having visited all the most interesting regions of this country, I arrived at the conclusion that the most useful research I could make for my thesis should be a subject of real application when I get back to Uruguay.

In spite of the great difficulties I anticipated in such work, I selected the study of Uruguay from a Regional Planning standpoint. During this study I have tried to apply to Uruguay the solutions that several regions have adopted in this country, especially those from similar regions, such as Texas (land utilization and topography),
North Carolina (climate), Wisconsin (rural zoning) and the general work of the National Resources Planning Board.

I know that this work is not entirely complete. I did not try to obtain such a result. My interest has been primarily to train myself in problems of Regional Planning such as this, because these problems are the first that Uruguay and South America in general should solve.

My desire is to be able, when I get back, to do this job again with new statistics and a new contact with the real problem. This thesis should be, then, a simple sketch of a real NATIONAL PLANNING IN URUGUAY.
Reasons for the Creation of Such a Region

In order to make a successful master plan of a region, two of the most important elements to be considered are the selection of such a region and the logical delineament of its boundaries.

As we analyzed South America from the Regional Planning Standpoint, we selected the area of the present study within three countries, namely, Brazil, Uruguay and Argentina. I will call these areas Brazilian Region, Uruguayan Region and El Litoral, all of them included under the common denomination of Region number 6.

This region is located between 30° and 38° south latitude of the American continent and from 62° to the Atlantic Ocean.

We think in terms of homogeneousness when we look over Regional Problems. But of course it is impossible to find an absolute and total homogeneousness of natural and human elements in it. We must look for a general organic region clearly differentiated from the other areas surrounding the region; but it is not a complete unit: the absolute unit in Regional Planning does not exist.

We consider, however, that under the general characteristics of the continent it is very possible to localize different areas of similar natural and human elements. This is one of the conclusions of our
THE URUGUAYAN REGION.
A STUDY OF REGIONAL PLANNING.
EDUARDO BARANANO
CITY PLANNING THESIS.

LEGEND

TOPOGRAPHY.

- **Green**: 0 to 328 feet.
- **Light Green**: 328 to 656 feet.
- **Red**: 656 to 1640 feet.
- **Blue**: Sea level.

SCALE: 1" = 80 MILES.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
first study of South America.

We selected Region number 6 because of the homogeneity of its principal features: land, people and activities of mankind, and also because of its historical development as a unit, its actual problems and its probable evolution in the future.

**Topography**

Region 6 is one of the most homogeneous of South America from the physiographical standpoint; in fact the land, rising from 0 to 2000 feet is practically an extensive prairie.

Its conformation is extremely pleasant, quite rolling in the Eastern part and mostly flat in the West. From the Uruguayan border towards the north the land becomes more and more hilly until we arrive at the Coastal Mountains of the Brazilian Region.

The lack of high mountains, together with other physical reasons, made of this region one of the most exclusive cattle-raising regions in South America. In fact it is considered one of the best areas for that activity in the world.

The rolling character of its topography is the reason for the good drainage system of the land as well as for its typical rural pattern.
Climate and Rainfall

Its climate is temperate. It goes from 35° to 70° F. and its average is 60° F. There are several reasons which make the climate quite variable in different parts of the region. In the Southeast (Uruguayan Region), for instance, it is quite cold in winter because of the strong wind coming from the ocean. This wind makes the temperature very pleasant in summer, but it gets extremely cold in winter. (35°)

In the Northeast of this region (Brazilian Region) the climate is somewhat warmer but always within the limits of 68 or 70° F.

The Western part of the area, or Litoral, is hot in summer, and it receives a very dirty wind from the center of Argentina (pampa) which often changes the rhythm of rainfall of this zone.

The rainfall is abundant but quite irregular. It raises from 900 inches in the South to 1350 in the North. The winds are the reason for this sudden change in the rainfall.

Geological Analysis of Region 6

The geological formation of region 6 is the continuation of the great trap plateau (Gondwana system) in the eastern part of Brazil. The main part of it occupies a great part of Rio Grande do Sul and continues south in
THE URUGUAYAN REGION. A STUDY OF REGIONAL PLANNING.
EDUARDO BARANANO
CITY PLANNING THESIS.

LEGEND

RAINFALL

\[
\begin{array}{|c|c|}
\hline
\text{Scale: } & 1'' = 80 \text{ MILES.} \\
\hline
\text{inches.} & 50-60 \\
45-50 & \\
40-45 & \\
35-40 & \\
30-35 & \\
\hline
\end{array}
\]
TEMPERATURE IN CENTIGRADES.

<table>
<thead>
<tr>
<th>Departments</th>
<th>Summer</th>
<th>Autumn</th>
<th>Winter</th>
<th>Spring</th>
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<td>on the Uruguay river.</td>
<td>22.95</td>
<td>13.63</td>
<td>13.20</td>
<td>20.37</td>
<td>17.54</td>
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<td>on the La Plata river.</td>
<td>22.12</td>
<td>14.60</td>
<td>11.97</td>
<td>17.29</td>
<td>16.49</td>
</tr>
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<td>on the Atlantic Ocean</td>
<td>21.80</td>
<td>12.68</td>
<td>12.65</td>
<td>17.71</td>
<td>16.22</td>
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<tr>
<td>Interior</td>
<td>22.48</td>
<td>13.35</td>
<td>13.35</td>
<td>20.61</td>
<td>17.44</td>
</tr>
</tbody>
</table>

The 36.2% are sunny days.

132 clear days.
125 somewhat cloudy days.
108 Very cloudy.
MAIN HOURS OF RAINFALL.
Source: Statistics.
URUGUAY.

Diagram showing rainfall distribution by season:
- Summer
- Fall
- Winter
- Spring

Each season diagram includes a central circle marked 'noon' and a ring marked 'm.n.' indicating minutes.
the central part of Uruguay. It disappears under some lower cretaceous sediments (light colored, coarse clays and sandstones forcing extensive beds in the valley) in the Uruguay valley and rises again in the Entre Ríos Province of Argentina. This trap plateau is formed principally of clays and cretaceous sandstones; another part of this system limits the main trap plateau in the south and east; this latter is composed mostly of sandstones; at the south of these we find other deposits of the same system very similar to the first formation; gray sandstone and clay.

The other deposit which occupies the main part of Region 6 is the so-called metamorphic rocks. This deposit is composed of granite, gneiss, phyllite and other crystalline rocks. It is very deep and it is limited at the north by the third deposit of the Gondwana system and at the south by the alluvial deposits of the Atlantic coast. These metamorphic deposits are found in the center of the Gondwana system covering one area of around 100 square miles.

These alluvial deposits on the Atlantic coast are in close relation with the topography and the flora of the area.

All the valley of the Uruguay River is an extensive deposit of lower cretaceous sediments of a reduced depth. These deposits extend west on the mouth of the Parana
River and disappear beneath the Jurasics sediments of the Litoral region. (Argentina)

The general characteristics of the geological formation of Region 6 are very similar to the formations of South Africa, and this similarity has promoted very interesting studies about the interrelationships of both formations, such as "Africa and South America" by Du Toit.

Soil and Vegetation

In the center there are great quantities of granite and poor soil, and in the east and northeast the soil is sandy.

The types of vegetation vary somewhat. Beginning from the southeast we find palm trees and pine trees in extensive areas along the ocean.

The hinterland is scantily covered by forests (8 percent) and only at the edges of the rivers and streams.

All the Southwest is very swampy, and the rest is an extensive prairie covered here and there with shrubs and sometimes groups of aboriginal trees.

Mining Deposits

The minerals of the region are of limited importance. As a general statement it can be said that the mining importance of this region was never great in the economy
of the region, and very probably it never will be.

However, several mineral deposits are found in this region, and some of them have been extracted lately.

We find in the Uruguayan region an area of 50 square miles in which deposits of coal are found. Uruguay has a large amount of marble of great beauty and variety especially in the eastern part. There is also a large quantity of granite. In the departments of Salto and Artigas there are fine specimens of agate, onyx, and opal. For more than 50 years there have been gold mines working at Cunapiru in Rivera.

In the Brazilian region we find some coal deposits also, but the quality of this coal is very poor and, consequently, it has not been exploited to a great scale. There are no deposits of oil or deposits of iron ore in Region 6.

Activities of Inhabitants (SEE TABLE 1.) also 2, and 3-4.

The principal activity in this region is pastural and, in second term, agriculture. Almost 80 per cent of the total area of this region is devoted to cattle raising and only 9 per cent to agriculture. The other activities of people are urban activities: industrial, business, etc.

In general it can be said that the character of the Region number 6 is pastoral. Of course this fact promotes
another phenomena: concentration of population in urban centers.

In fact 65 percent of the Brazilian population in this region and 60 percent of the population in Uruguay live in urban centers. The different governments of these countries have studied during the last 20 years this problem of depopulation of the country and tried with their policy to attract new settlers to the hinterland, but they have been successful only in the Brazilian region. More than 14 per cent of the inhabitants of such area are immigrants who arrived there less than 30 years ago.

In some areas of this region several mining centers have been exploited regularly although in small scale; this fact, however, has not affected the life of fundamental areas within the region; its general pattern has remained the same probably because the small scale of these operations.

Practically all the eastern coast of Uruguay is bounded by shallow banks excellent for fishing purposes; this is one of the national resources that the State has carried out during the last 15 years.

The economy of the area is in general a dependent economy. Especially that area indicated in the map as exclusively a cattle raising area.

The region represents, in the economic life of the
world, a dependent region with very little chance of self-sufficiency in the future.

In fact because of the lack of coal, steel, petroleum and other fundamental raw materials, this region interchanges for these raw materials, and other manufactured products and industrial equipment its cattle and cattle products or some part of its agricultural production.

There are in this region areas with very good soil, favorable location, regular rainfall and adequate climate, and consequently suitable for agricultural production which are not engaged in agricultural pursuits. On the contrary these areas obtain the necessary agricultural products from other areas, frequently from quite distant areas such as France, Great Britain or the United States.

Because of this, these areas remained marginal and maintained unnecessarily such marginal economy for a period of time.

Some industries have been developed during the last ten years: paper mills, cement factories, textiles, glass factories, and many other industries such as aluminum plants, accessories for automobiles.

These latter industries have been developed with the raw materials, aluminum, steel, iron, etc., imported from Europe during 1910 to 1939 and from the United States in the last five years.
Determination of Boundaries

Region 6 is limited on the south and east by the La Plata basin and the Atlantic Ocean. These natural limits of the Uruguayan republic are the basis for the selection of this study. The La Plata River limits Area number 6 on the Southern part. The River Plata, the main seaward entrance, is less a river than an estuary or great basin into which flow the Rivers Parana and Uruguay and their tributaries. Measured from Piedras, Argentina, to Brava, Uruguay, the Plata has a width of about 56 miles, and where the Rivers Parana and Uruguay branch off (say from Martin Chico to San Fernando) the width is 23 miles. The river is 100 miles long as the crow flies, and mud and sand give it a thick, brownish color for the first 50 miles of its length. It is shallow and the passage of ocean vessels is only possible by continuous dredging of the recognized channels.

The tides are of little importance, for there is only an 18 inch rise and fall at spring tides. The depth of water is influenced mainly by the direction of the wind and the state of the Parana, Uruguay and Paraguay Rivers. The river rises with south and southeasterly winds and falls with a wind from north northeast or northwest. The southwest is a bad-weather wind called the Pampero, and its strength will sometimes cause the river to rise because of the large volume of water brought in from the
The length of the principal rivers are: Rio Uruguay, 940 miles; Parana, 2,800 miles; Plata, 100 miles. The areas of the three parts of Region 6 are: Uruguay, 72,000 square miles; Brazil, 81,600 square miles; Argentina, 75,600 square miles.

We selected the Parana River as the west boundary because not only physical reasons but for practical reasons as well. In fact the provinces at the west of Parana River lie closer to the Buenos Aires Metropolitan region than to Uruguay or Brazil. The railroad system and the highway layout follow this policy. The agricultural products and the cattle for exportation are sent by railroad or sometimes by water to the docks of Buenos Aires and from there to Europe and the United States.

The Parana River, one of the longest in South America, is the natural way of exportation of Paraguay and northern Argentina. The cities on the east are connected with the hinterland by railroads and they do not have many bridges of real connection with the western part of Argentina.

The Parana River is one of the political boundaries in Argentina.

These were the reasons for the selection of such a boundary in the west of Region 6.

The northern boundary was selected for physiographic
reasons primarily. In fact the climate, the topography and the land use of this area of Brazil changes as soon as we cross the zone showed in the map. From a region nearly flat and covered with few forests, we find a region of undulating character and well forested. The culture of the area north of our boundary is absolutely different from the culture of the south of Region 6; from cattle raising and agriculture of temperate climate (wheat, corn, potatoes, etc.) of Region 6, it changes towards the cultivation of coffee and tropical products.

The general pattern of the region changes too. The easy topography for the layout of highways changes. The railroads are unified in the valley and the highways are less abundant.

Consequently the relations with the southern part of Region 6 disappear and the general aspect of the region changes. Trees quite scarce in the rest of the area grow in groups and cover mostly all the hills and the mountains of South Brazil. The general drainage system of the region changes; only wide valleys carry all the rainfall of Region 6.

The climate is somewhat warmer and even the type of population changes.
Montevideo city.
Montevideo city.
Urban Pattern

The urban pattern of Region 6 is very irregular. Nearly all the population is concentrated in three or four areas: in the Montevideo area, in the Parana area, in the surroundings of Porto Alegre and around Bage. There are, in Region 6, 1 city of 780,000 people, 3 cities between 500,000 and 700,000, 2 cities between 100,000 and 500,000, 1 city between 50,000 and 100,000, 6 cities between 30,000 and 50,000, 6 cities between 10,000 and 30,000, 10 cities between 5,000 and 10,000, and 15 cities between 2,000 and 5,000.

We consider rural population all the other towns with less than 2,000 people.

Cities, Harbors and Seaports

Uruguay

Montevideo, the third largest city in South America, is located in the south of Region 6. It is one of the best natural harbors on the Atlantic coast of South America and, although its depth is not great, by a constant canali- zation of the bottom of the La Plata River, it became the main exportation and importation center of the Region. Montevideo has excellent connections with the rest of the Uruguayan Region and through it with the Brazilian Region. Although the railroad systems in the Litoral Region and
the Uruguayan region could be inter-related to become an unique transportation system, the Uruguayan Region and Litoral Region are connected only by water.

Montevideo is the most important city of the whole region, and it commands mostly all the economical and financial life of the area.

In the Brazilian Region the main port is Porto Alegre, 275,739 inhabitants. Located at the end of the Patos Lagoon, it is the main center of South Brazil.

Other centers in the same lagoon with a great trade with the northern part of South America are Pelotas, the cattle center, and Rio Grande of 72,000 and 100,000 people respectively.

Fray Bentos is a port on the Uruguay River 120 miles above Buenos Aires and 250 miles from Montevideo by water. There is one of the most important packing meats (frigorificos) of the country. Although it is connected by railroad with all the points north of the Negro River, it is not easily connected with Montevideo because of the lack of bridges upon the Negro River. It is one of the best ports on the Uruguay River (24 foot depth).

Paysandu on the east bank of the Uruguay River (navigable to vessels of 14 foot draught) is the second city in the republic. Population 50,000. Soap and shoes are manufactured. It is reached from Montevideo 300 miles by railway, bus, or steamer; from Salto by Midland
THE URUGUAYAN REGION.
A STUDY OF
REGIONAL PLANNING.

EDUARDO BARANANO

CITY PLANNING THESIS.

LEGEND

LOCATION OF INDUSTRIES.

- Corn & flour mills, boot & shoe mfrs, Tanneries, Soap mfrs, Cement, tobacco manufactures, woolen woven mills,
- Mining industries: frigoríficos, canning factories, packet meat.
- Extractive industries: precious stone, mineral water natural, marble.

Department of Statistics, Uruguay, 1939.
South American Handbook, 1941.

SCALE: 1" = 80 MILES.
railway; from Buenos Aires by steamer.

Salto, an important port on the Uruguay River, is the third city of the republic. There are paved streets, electric lighting, modern sewerage, and good suburban roads. It has a population of 48,000, and it is a center of the livestock and agricultural interests. It is connected by the Midland Railway and steamer with the capital, and by rail with Brazil. It is separated only by the river from Concordia, Argentina, and it is 366 miles from Montevideo by rail, 299 miles by water from Buenos Aires. Salto is justly named the "City of Oranges," for there are 5,000 hectares planted with the trees besides large groves of tangerines.

Colonia, port on the La Plata River, is about 150 miles from Montevideo by rail, road or steamer. It has a population of 10,000. There is a ferry service to Buenos Aires, 25 miles away. The establishment of a Customs free zone has been sanctioned, and extensions are contemplated which should have the effect of largely increasing the commercial importance of the port. The principal products are cereals, milk, butter, sand and gravel.

Dolores, department of Soriano, is a small port on the River San Salvador 20 miles above its confluence with the Uruguay River, 28 miles by road from Nueva Palmira. This port lies in a wealthy farming area and is an
important grain shipping point. Population, 16,000.

Nueva Palmira is a port of call for river steamers for the shipment of cattle and cereals. Population, 3,500. It stands 20 miles up the Uruguay River above its confluence with the Parana, 76 miles by steamer from Colonia.

Brazil

Porto Alegre is situated at the junction of five rivers which flow into the Rio Guahyba and thence into the Lagoa dos Patos, one of South America's largest fresh water lakes. It is the capital of the most southerly state of Brazil, Rio Grande do Sul, and is the most important commercial center south of Sao Paulo with a population of 275,739. Fourteen per cent of the population is German descent.

A large area of reclaimed land has been used for building, and extensions have been made to the quays, port warehouses and cargo facilities. The city has a large number of good concrete roads, and delightful motor drives can be taken throughout the surrounding country which is hilly and picturesque.

Porto Alegre is rapidly becoming one of the most modern and up-to-date cities in Brazil, for it is essentially "a city in construction," with skyscrapers, new buildings, roads, gardens springing up on all sides.
There are now two commercial and one military landing fields, two airports and three long-wave broadcasting stations.

Owing to the opening of channels in the Lagoa dos Patos, Porto Alegre can now be considered a port for ocean-going steamers up to a limited draft. British and Scandinavian lines maintain regular services from Europe and the United States direct to this port. It is, besides, the connecting link by air between Rio de Janeiro and the Southern Republics. A road is open to Curityba.

Rio Grande, at the entrance to the Lagoa dos Patos, ranks fifth in importance among the major ports of Brazil. It is the most southerly port available to ocean-going steamers. 100,000 inhabitants.

Bage, on the Bage River 140 miles from Pelotas, is important as the center of the xargue industry. It is reached by rail from Rio Grande. The main products, besides cattle and dried meat, are potatoes, maize, alfalfa and wine. Population, 84,000.

Pelotas, the second city in the State of Rio Grande do Sul is 29 miles up the Lagoa dos Patos between Rio Grande and Porto Alegre. It is a center of the xarque, or dried meat industry. There are also tanneries, flour mills, candle, soap, furniture and shoe factories. The main products are frozen and canned meats, hides, and rice. 72,000 inhabitants.
Uruguayana, upon the Uruguay River facing Argentina, is important as a frontier town, a center of the cattle industry and the head of the Uruguayana Railway from Porto Alegre. Products: jerked beef, soap, candles. Population, 22,000. A bridge is being thrown across to the Argentina town of Paso de dos Libres.

Argentina

El litoral

Parana, a port on the right bank of the Parana and the capital of Entre Rios Province, is an important cereal center. This city is connected by road with Villaguay and Concordia, and through these highways with the ports on the Uruguay River. It has trade with Buenos Aires primarily and with Uruguay and Brazil through the new roads built in the last three years. (See map of roads.)

Concordia, on the right bank of the Uruguay River facing Salto, is one of the chief towns in the Province of Entre Rios. Several lines of railway converge at this point and there is good river transport. The town has 36,507 population and is the center of a considerable business with Brazil, Paraguay and Uruguay. The place is one of the best angling centers in Argentina. It is connected by road with Parana and with Uruguayana. (See map.)

Corrientes, the capital of the province of Corrientes, is located 660 miles north of Buenos Aires. It stands 25
miles below the confluence of the Parana and Paraguay Rivers. The town seems destined, by virtue of its communications, to a large growth in importance.

Concepcion del Uruguay, in Entre Rios province and the terminal of the Entre Rios Railway, is a river port of historical interest and commercial importance. It is the seat of a national university. Population, about 26,000. It does a large trade with Uruguay and is growing rapidly.

Gualeguaychu in Entre Rios is a port 12 miles up the Gualeguay tributary of the River Uruguay. Fray Bentos (Uruguay) is upon the left bank of the main river. Local steamers connect the two towns four times a week. The town is reached by rail from Buenos Aires (230 miles) and by steamer and by the Entre Rios Railway from Concordia. There are tanneries and frigorificos. The population is 30,585.

Transportation

The transportation system in this region is quite good. It covers the area pretty well, but it lacks, we find, the little interrelationship among the Uruguayan, Argentinian and Brazilian Regions and also within the region itself. It was not planned as a unit when started and when developing. The port of Montevideo is the point where all the highways, railroads concentrate all their
THE URUGUAYAN REGION.
A STUDY OF REGIONAL PLANNING.
EDUARDO BARANANO
CITY PLANNING THESIS.

LEGEND
TRANSPORTATION

railroads
highways
airlines
pan american highway.

SCALE: 1" = 80 MILES.
lines. There is an overlapping in the layout of the highways which most of the time are parallel with the railroad tracks. The towns formed around the railroad stations are also unified by the highway system. The northern part of the Uruguayan region is practically isolated from the south of the region; in fact there are only two railroad bridges which connect both parts. Montevideo and Portoalegre, the two main cities of region 6 are connected by railroad, but only with one line which is not direct. The cities of Rio Grande and Parana, the two seconds in importance, are not connected at all. In 1942 one line between them will be finished.

The Litoral Region is absolutely isolated from the other two; it has trade with the Buenos Aires metropolitan region, but it should be connected also with the Uruguayan and Brazilian Regions.

Because of the topography of Region 6, the problem of highways is not difficult. The rocky topography (flat land) and the character of the soil are excellent conditions for the construction of highways through the region.

The air transportation system within Region 6 is very complete. It connects the principal cities in this region, as we can see in map number 3.

It connects also the principal cities in the outskirts of Region 6 with the centers of the other three regions.
The rapid evolution of this system of transportation indicates to us the probable trend of the transportation system in the future after the war. We think that air transportation will occupy the place of the railroads and highways in the years 1920 to 1940. These two last systems will be of connection between the large airports, and systems of transportation of agricultural products or cattle.

We believe, too, that the cities will be provided with a clear system of transportation which connects these airports with the main stations and industrial areas.

The principal problem that this region shows is one of the interrelationships among the transportation systems, between the transportation systems and the use of land, especially with the agricultural areas, the location of new centers of activity, the elimination of competition between highways and railroads, and the improvement of the water transportation within the region.

Interrelationships of the Region

We can establish in Region 6 a clear system of relationships. El Litoral Region and Uruguayan Region, for instance, can be brought closer together by the interdependency of their highway and railroad systems.

Some of the principal cities within each region should be related by the layout of highways, railroads
THE URUGUAYAN REGION
A STUDY OF
REGIONAL PLANNING.
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CITY PLANNING THESIS.

LEGEND

LAND SUITABILITY

- CATTLE RAISING
- AGRICULTURE (incl.)
- MIXED CATTLE & AGR
- SUITABLE FOR FOREST
- PROBLEM AREAS
- RECREATION AREA
- SANDY LAND
- MARSHY LAND
- WATER

SCALE: 1" = 80 MILES.
The principal ports on the Uruguayan border should be connected with the agricultural regions of the hinterland in order to obtain an easy exportation of these products.

The different movements of exportation among the three regions of Region 6 should be studied as a whole.

The utilization of the best ports within this region should be emphasized in our Master Plan, not only the main ports on the Atlantic Ocean but the secondary ports on the principal rivers of the region. See page .

The general layout of highways should be determined to a great extent by the proposed land use of each area. The agricultural regions should have an easy connection with the principal highways and with the principal ports of exportation.

The recreational areas of the Uruguay Region, Atlantic Ocean and Rio Negro dam will attract quite a number of people from the Litoral Region and Brazilian Region. A general layout of highways should be provided for the movement of such people.
THE URUGUAYAN REGION
PRESENT LAND USE.

Photo by Pedro Rey.

Size of the map: 3' 1/2 x 2' 1/2.
Introduction

Planning is looking forward. It is a process peculiar to the human race but one relatively undeveloped in application to community or collective enterprise.

Plan may be expressed in maps and diagrams or in terms of guiding principles. Plans designed to guide the development of dynamic organisms such as a city, a State, or a Nation over a long period of years must of necessity take chiefly the form of policies and guiding principles with a minimum of dependence upon maps. Because most people are familiar with the blueprint type of plan, the general public does not readily grasp the idea of community, State or National planning.

The term "planning" has caught the popular imagination during recent years more rapidly than has grown understanding of its proper meaning and application. Countless specialized groups talk of planning, having in mind quite different processes and things. Economists, sociologists, agriculturalists, and engineers talk of regional or national planning each in his own language.

Physical planning, the planning that deals with land, water, structures, and all the other material objects that comprise physical environment is but the tangible or visual expression of social and economic desirability and necessity. Physical planning without social and economic planning is gainless. The effective-
ness of social and economic planning, in turn, is largely to be measured by their effect upon living environment as expressed in physical things.

The term "Regional Planning," therefore, as used through this report even when applied to a specific physical thing assumes all pertinent social and economic considerations.

Effective planning for the Uruguayan Region involves the weaving of a full network of municipal, departmental, and state plans bent upon the master pattern of a national plan. Substandard conditions resulting from failure to fill in any part of this network must inevitable result in proportionate structure of the national pattern and proportionate liability to be borne by the Nation as a whole. Planning is not a panacea. It will not prevent all mistakes. It offers no miraculous foresight into the requirements and eventualities. It is a guiding process necessarily subject to constant adaptation to new and unforeseen conditions and requirements.

Planning may take the form of regimentation or of absolute control over initiative of the individual, but this is neither an essential quality of planning nor is it a likely expression of planning in Uruguay. Planning may be directed toward quite the contrary objective, absolute freedom of the individual. Somewhere between the two extremes probably lies the greater social and
economic good and the greater likelihood.

The Uruguayan Region

This region has been selected as a unit for political reasons primarily.

Uruguay, the smallest republic in South America, is perhaps the most homogeneous. Of an area of 72,126 square miles, it lies between the two most powerful countries in South America, Argentina and Brazil. Being the result of powerful historical trends, it was formed as a buffer state between these two former countries. (Uruguay supported in the 19th century one domination from Argentina and another from Brazil.)

The Uruguay River determines its boundaries with Argentina, although as practically all the river boundaries, it is not a line of demarcation of use of land or other features. In fact the people, the climate, and even the type of soil are the same. (See the maps of soil, topography and population.)

Several streams, part of the Merin Lake, and artificial boundaries accepted by several agreements separate Uruguay from Brazil.

Uruguay is one of the most advanced countries in political development and legislative set-up.

Its government is of a parliamentary of the French type.
It provides for a Chamber of Deputies of 99 members elected by the departments according to population, and a Senate of thirty members chosen by nation-wide suffrage, one-half being from the majority party and one-half from the minority. The right to vote is universal and compulsory, and failure to cast a ballot is punishable by fine.

Uruguay's legislative and governing bodies now consist of:

1. A president and vice-president and a cabinet of nine ministers appointed by him from the two major political parties—the Red and White groups.

2. A senate of 30 members, presided over by the vice-president, who holds the casting vote. Seats in this body are likewise distributed between the two parties.

3. A Chamber of Deputies of 99 members, the seats are assigned to each political faction in proportion to the number of its votes, and each department of the Republic is taken into account.

The President and the Cabinet of nine members are subject to votes of censure. In the case of a majority vote of censure, the President may request the Ministers to resign, but if there is less than a two-thirds majority he may require another vote. Should the second vote be a majority but not two-thirds, the President may dissolve Parliament and call a new election. If the new Parliament
sustains the censure by a bare majority, the President and the Cabinet are forced to resign; and the Parliament then selects their successors.

An absolute majority is required in both Senate and Chamber of Deputies before fresh taxation can be levied. Revenue bills cannot be originated by Parliament; they must be introduced by the Cabinet. The Constitution provides for compulsory, universal suffrage, and for old-age pensions, child welfare, workmen's accident insurance, the eight-hour day and six-day week, minimum wages and other social measures.

Elementary education has been free and compulsory since 1877, and the proportion of illiterates is lower than in most South American countries. Fifty per cent of the population are Roman Catholics, but no religion is established by the State, and all beliefs are free.

For some years Uruguay has made extensive experiments in state socialism. Many of the country's socialistic enterprises are now incorporated in the new constitution.

The State holds some enterprises of public interest, such as, Ancap. (Alcohol plants, cement plants, oil refineries). A Government organization, the Institute of Quimica Industrial, has a monopoly for the manufacture of chemicals in Uruguay. Among its products are alcohol, sulphate, chloride and carbonate of soda, chloroform, collodions, sulphuric ether and acid, superphosphate, com-
commercial sulphate of iron, benzol, toluol, and naphtalene, nitric acid, hydrochloric acid, caustic soda and ammonia.

The State owns one of the main frigorificos in Uruguay, located in Montevideo. This Organism controls the prices of meat for local consumption and for exportation too.

The UTE is another organism which controls all light, power, telephones, and hydroelectric development.

The National Ports Administration controls all port and river traffic in Montevideo and elsewhere.

Uruguay has studied the possibility of buying the railways owned by the British.

An administration known as SOYO controls the state fisheries in the eastern coast of the country.

The chief hotels, especially those along the beaches and casinos, are owned and operated by the Montevideo Municipality.

The state controls banking through its ownership and operation of the Bank of the Republic, the State Insurance Bank, and the Mortgage Bank.

All forms of insurance—life, fire, marine, industrial, accident, and so on—are on exclusive government monopoly; Uruguay is the only country in the world where this is true.

The National Ports Administration controls all port and river traffic in Montevideo and elsewhere.
Topography and Vegetation

The topography of the Uruguayan Region is very uniform. There are no mountains of great height. None of the peaks attains 2,000 feet; on the west and the north they are distinguished by the name of Cuchilla de Haedo, and on the south and east as the Cuchilla grande. (See map 2.)

The two main hills of the country, as we can appreciate in the pictures, are covered very seldom with grass. Most of it is a rocky, useless area.

The type of land varies greatly. All the east part is sandy land, low and somewhat swampy. This area extends for 200 miles along the ocean like a ribbon 70 miles wide.

The Uruguayan Region is almost completely lacking in trees. Only along the numerous streams trees and shrubs are found.

On the Atlantic coast, however, pine trees and eucalyptus have been planted during the last 20 years.

Consequently, we can't speak about forestry in this region, although there are great areas with some woods (montes), but they have a very reduced forest value.

There is no natural reason for this lack of trees in this region. The climate and the type of soil over most of the area is favorable for forest purposes. This lack is due to the wrong policies of land owners and
cattle raisers exclusively oriented toward the exploitation of cattle raising as an industry without a general appreciation of the resources of the land.

The state has made efforts towards making this group realize the value of forest products and of agricultural products as well.

This effort, however, has not met with success in a great scale.

Drainage Basins

The drainage system of this region is very efficient on account of numerous rivers and streams. The Rio Uruguay which limits this area from the Argentina Republic (El Litoral Region) is one of the main drainage basins. Rio Negro which crosses the Uruguayan Region from northeast to southwest and, together with the Rio Yi, are the two secondary drainage systems of the Region. Another drainage basin is Lake Merim where several important rivers such as Cebollati flow.

The erosion is very great and no general policies have been applied to stop it. A general policy will be studied at the end of this analysis.

The fourth drainage basin is the Plata and Ocean coast basin.

The Plata basin is the recipient of the whole system. Several small rivers flow into it. Santa Lucia, etc., etc.
Pando stream.
We can assume that its respective areas are:

<table>
<thead>
<tr>
<th>Basin</th>
<th>River</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st basin</td>
<td>R. Uruguay</td>
<td>22,700 sq mi</td>
</tr>
<tr>
<td>2nd basin</td>
<td>R. Negro</td>
<td>23,800 sq mi</td>
</tr>
<tr>
<td>3rd basin</td>
<td>L. Merim</td>
<td>12,000 sq mi</td>
</tr>
<tr>
<td>4th basin</td>
<td>L. Plata</td>
<td>13,500 sq mi</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>72,000 sq mi</td>
</tr>
</tbody>
</table>

As we can appreciate on the topographical map, the Uruguayan Region is very well covered by rivers and streams. The basins are not deep valleys but rolling lands which do not need any special irrigation for agricultural or cattle raising purposes.

Some complementary system of transportation could be obtained if dredging would be possible in the principal rivers.

There are some navigable rivers in this region; the Uruguay River is navigable up to Salto (240 miles); the Rio Negro is quite shallow in the northern part, but it is navigable in the 90 miles of its confluence in the Uruguay River.

In the year 1933 an hydroelectric plant was being built on the Rio Negro Valley to provide electricity for the capital and also to make possible the location of new industries in the interior of the country. This plant which will create an artificial lake of almost 400 square miles will be finished in 1943.

This work will provide not only energy for the country,
but it will control the floods of the Negro River and it will make this river navigable. The project includes the study of a channel of 9 feet all through the 200 miles of the Negro River.

It is the most important work done in Uruguay from a Regional Planning standpoint. The lake will change all the natural characteristics of the region and it will be studied in close relation to other elements in our Master Plan, especially to the location of new industries, land use, and the transportation system.

We think of that work as a possible TVA. RNV has, in fact, many similarities with TVA: first, the aim of this work (obtention of power) and the general economy of the region are very similar. There is a main difference between the two, however, and it is the use of land; in fact in TVA 29 per cent of its total area was covered with forests which are unknown in the Rio Negro Region. Sixty per cent of the area of TVA is devoted to agriculture; RNV has only 2 per cent.

The Merim lagoon is navigable for small vessels which carry the products between the Uruguay and the Brazilian coast; during the last 10 years the interchange of products between the two countries has been greatly developed as we can appreciate in chart number .

The main cities of South Brazil are located on its shores.
The main characteristic of the Uruguayan rivers is its unexpected flood; in fact having a very irregular rainfall and without any provision for flood control, they make the conditions in several low lands quite difficult for any use.

In fact the areas of swampy land and "banados", as we can see in map number , are very extensive.

Quite a number of important cities located in the confluence of two rivers suffer almost periodically by the heavy floods.

Geological Analysis of Soil Type

The physiographic features of the Permo-triassic Gondwana, cretaceous sediment, of the central and northern parts of Uruguay represent a rather even rolling country with characteristics of a very mature peneplain.

The sedimentary basin, which is a continuation of the wide belt of Gondwana sediments of southern Brazil (cretaceous sedim), extends in Uruguay through the departments of Rivera, Tacuarembo, Cerro Largo, and northeast Duraano occupying a total area of approximately 25,000 square kilometers. (10,000 square miles equals one-seventh of total area.)

Besides the table lands which are typical features in the erosion of the Gondwana rocks, there are many dome-shaped hills most of which are due to batholithic
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CITY PLANNING THESIS.

LEGEND

SOIL TYPES.

- Lower cretaceous sediments.
- Cretaceous sandstones and clays (Gondwana System).
- Granite, Gneiss, phyllite, and other crystalline rocks.
- Tacuarembo sandstones (Gondwana System).
- Cretaceous sediments.
- Jurassic, Tertiary, and Quaternary Alluvials
- Gray sandstones and clay (Gondwana System).
- Silurian.

SCALE: 1" = 80 MILES.
Southwest-northeast geologic section from Fray Bentos to Jaguarí, URUGUAY.

Vertical scale in meters.
Horizontal scale:

West-east geologic section from Jaguary, Uruguay, to San Antonio, Brazil.

Vertical scale in meters.
Horizontal scale. . . . . . 0.5 10 kms.

LEGEND
1. Dark clay and black clay (Melo.)
2. Red sandy shale
3. Horizontal sandstones
4. Granite
5. Gray sandstones and clay.

masses or to the proximity of the crystalline basement.

The greatest part of the area does not exceed the average elevation of 100 to 150 meters though on the Uruguayan-Brazilian border the elevations are locally as great as 250 meters above sea level.

The central and southern parts of the basin are drained by Tacuarembo River and its tributaries, and the southern part is drained by the valley of Rio Negro.

The Serra Geral, a basaltic elevation of approximately 700 to 900 meters, which extends more than 1000 kilometers north and south through southern Brazil, continues southward as a wide plateau in Uruguay with an east-facing escarpment 250 to 300 meters high; extending as a wide trap plateau west of the sedimentary basin the basalts gradually dip southward and disappear beneath Cretaceous sediments in the Valley of Rio Uruguay.

Regional Geology

The sedimentary basin is sharply defined on its eastern and southern margins by the metamorphic and crystalline rocks of the Basement complex and, as has been stated, by the basaltic traps of the Serra Geral on its western margins. On the north the basin continues into Brazil. The exact limits of the Permo-triassic Gondwana rocks (Cretaceous sediment) at the east extend along the broad belt of Algonkian and Archean metamorphic rocks which form
the remaining eastern and southern parts of the country. The contact line extends from Paso Minuano on the border of Brazil toward the southwest, lying about 15 kilometers south of Melo and Fraile Muerto and crossing the headwaters of Arroyo Cordobes farther west. (See map number .)

The eastern contact with the Triassic traps of the Serra Geral extends approximately along the railroad from Rivera to Tacuarembo, narrow area of Devonian sandstones typically exposed at the locality of Carmen.

Much of the southern part of the basin shows well developed glacial Permian formations of the Bonito Itarare series (gray sandstones and clay).

The tillites and glacial boulders with characteristic striated surfaces crop out here and there in some localities of the area. (Tacuarembo)

The Melo Horizon contains the red and variegated shales of the Estrada Nova beds of Uruguay corresponding with the upper part of the Passa Dois series of Brazil.

The general character of the Melo and its incomplete development as compared with the Iratay suggest its deposition in lacustrine or edge-water conditions. The greatest horizontal and vertical development of the Melo beds is attained in the Department of Cerro Largo.

The variegated shale beds of the Estrada Nova cover the northern part of the Department of Rivera extending across the border into the State of Rio Grande do Sul in
Brazil.

The largest part of the western border of the basin is formed by the Tacuarembo sandstones. They are red or cream colored sandstones of a fine to very coarse texture, false-bedded, overlying, or in places interbedded with layers of clay stones. This formation is correlated with the Sao Bento series of southern Brazil.

In the southern part of the Department of Rivera a large mass of the crystalline basement rocks is exposed in the midst of the sedimentary area. The contacts with the Estrada Nova beds at the north and Palermo beds at the south reveal extensive faulting, probably of post-Permian time. The sedimentary and crystalline rocks in the Sierra de Acegua in the Department of Cerro Largo show similar faulted contacts. (See map.)

The trap plateau occupies almost the entire western half of the country. This trap rock is found also by drilling in the Province of Entre Ríos in Argentina evidently as a continuation of the same formation. Only in the valley of Rio Uruguay are these traps covered by irregularly developed Cretaceous sandstones and clays. At the boring of Palo Ulestie, in the Department of Rio Negro, these sedimentary rocks have a thickness of 260 meters overlying a melaphyre and diabase sheet 360 meters thick.

Devonian formations.
The southern most limits of the sedimentary basin are formed by a narrow strip of coarse white sandstones, typical at the locality of Carmen. In the Department of Durazno the outcrop extends from approximately Faruco at the northeast to Carmen at the southwest.

**Soil Types**

The soil in the Department of Soriano is composed of clay-sand, humifera, its subsoil is deep, black and of a regular composition rich in azote, and poor in calcareous.

The soil of Rio Negro is very similar. Potentially this area, Soriano y Rio Negro, can be devoted to agriculture with great success.

The soil of Durazno constitutes the second great block of farmland of the country; its soil and subsoil is deep, rich in azote and of medium qualities.

The soils of Salto are very similar with the soil in Canelones. It is more fertile with more deposits of quicklime and acid phosphate.

Paysandu has a type of soil a little different: more stony and with more nodulus calcareous. This type of soil is very rich in quicklime.

In Salto and the northern part of the coast there is a region of 400 square miles suitable for orange crops.

In Artigas there is a small zone of the same
characteristics; the type of soil is sandy and somewhat stony.

In Rivera, Cerro Largo North and Northwest, Montevideo, Canelones, Rivera y Tacuarembo there are several regions of undefined boundaries suitable for this kind of crops.

In the basins in the Yaguaron and Candiata Valleys between 31° and 32° latitude and 53° and 54° longitude, there is a deposit of coal of an area about 50 miles by 30 miles.

As a general statement we can assume that 40 per cent of the area of Uruguay is suitable for agriculture.

Mineral Deposits (Unexploited)

Minerals are not very abundant in the Uruguayan Region. In fact its geological formation relates the Uruguayan Region with the other areas of Region 6 where, as we said, mining doesn't represent an important part in its economic life.

However, we find some minerals of sound importance, such as lead sulphide.

Petroleum Possibilities

Petroleum has not been found in Uruguay. No active seepages are known, and no showings of oil or gas were observed in the many test wells.
The occurrence here and there of the very slightly bituminous shales of the Melo horizon has no significance as an indication of possible oil-bearing sands. These shales are the continuation of the considerably more developed Iraty shale horizon of Brazil which has been already proved unimportant as an oil-bearing horizon.

The bituminous impregnations in the Tacuarembo sandstones in the Department of Rivera are similar to, though smaller than, the well known impregnation in Bofete, Sao Pedro, and many other localities in the State of Sao Paulo, Brazil. They are probably due to deposition by the circulating subsurface waters of the Iraty beds (Melo in Uruguay). The impregnations are commonly observed around or in contact with intrusive diabases where the fracture planes opened ways of circulation for the underground water, thus explaining the deposition of bituminous material in the sandstones of Upper Triassic formations.

This lack of oil has been one of the reasons for the slow progress of its industries. Oil was imported from Great Britain or from the United States. In the last years it was imported directly from Venezuela. (See exportation charts.)

The People

The Uruguayan Region has almost 2,357,000 inhabitants.
URUGUAYAN PEOPLE.
Its distribution is very irregular. In fact being a grazing country, cities are the only places where men can find opportunities for living. The so-called phenomenon of "Attraction of the cities" appears.

Chart 3 shows the per cent of inhabitants per square mile in the different "departments" (counties). It rises from 3 per square mile to 342 per square mile.

The location of the towns in the country is determined by economical reasons (value of the land most of the time) rather than for any other reason. Consequently, it is very common to see in the country small towns located in areas easily flooded or on soil inadequate for living, or others with poor connections with the principal centers, etc.

The Uruguayan population is one of the most pure stocks in South America. Its composition is approximately 98 per cent white people (descendants of the Spaniards, Italians or French) and 2 per cent negroes. (Economic Geography, Vol. II, 27, page 360)

This people racially active, living in a temperate climate and in a very good location (ocean boundaries) has naturally a normal activity capacity that other races in different latitudes of South America do not possess.

The composition of the population can be obtained only by reliability. In fact although Uruguay publishes censuses periodically, these two last ones are not
complete, and there is a general lack of material about population here in the United States. We have a quite complete data about the city of Montevideo, the main city of this region. This data has been obtained by a careful survey of the metropolitan area and of the city itself made in 1941.

The composition of the population is:

<table>
<thead>
<tr>
<th></th>
<th>Urban area</th>
<th>Rural area</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>45 square miles</td>
<td>166 square miles</td>
<td>211 square miles</td>
</tr>
<tr>
<td>Men</td>
<td>333,804</td>
<td>28,615</td>
<td>362,419</td>
</tr>
<tr>
<td>Women</td>
<td>361,602</td>
<td>23,664</td>
<td>385,266</td>
</tr>
<tr>
<td>Per cent of Total</td>
<td>93.01</td>
<td>6.99</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Fifteen per cent of the total population, or 342,359, are children. Two hundred thousand children attend the 1600 elementary schools over the country.
STATISTICS OF POPULATION.

Total Population
Rural Population

SOURCE: Riqueza y Pobreza del Uruguay.
Julio Martínez Lamas. Montevideo.

International Labour Review.
Uruguayan Population Growth and Movements (SEE TABLES 5, 6 and 7)

Among the basic considerations of social sciences are the characteristics, growth and movement of population. Planning as a social science deals fundamentally with people. It is apparent that any change in population trends vitally affects all phases of community life. The study of such changes is, therefore, significant when community life assumes significance.

The interplay of population growth and movements with the many social and economic events accentuates the difficulties of the study especially when the problem reaches beyond historical data. And although there have been many ventures in population predictions, few have met with great success. Nevertheless, at least a periodic analysis of this problem is essential.

There is a regular shift in quantity of our population, from the rural to the main urban centers. Constant readjustments of society to such shifts are therefore necessary. Public construction and improvements, the building of schools and highways, the planning of recreational areas, in short all public enterprises which impose themselves not for a year or two but for twenty or thirty years necessitate not only an analysis of population trends but the extension of such trends into the coming twenty or thirty years. Schools and highways are built for the satisfaction of future as well as present needs.
An idea of what such future needs will be must somehow be ascertained. In the case of schools a study of the age composition of the population is essential and in the case of highways the trend of migration must be discovered. It is the need for this information that prompts the present study. We do not have all the information necessary for the obtention of the future population by tabulating method, such as the Wisconsin Regional Committee utilized in its study; but we are going to assume that the population in 1960 will be 4,000,000.

Continued urbanization of the Montevideo metropolitan area may be expected. By 1960 centralization expanding eastward and northward from the metropolitan area will cover a thin strip along the ocean as far north as Miramar and broadening northward toward Canelones and Santa Lucia River.

Other metropolitan areas will be urbanized, too; those like Salto, Paysandu y Fray Bentos on the Uruguay River, Durazno and others on the artificial lake, Colonia on the Plata River and Rivera on the Brazilian border.

Our study of population shows the ultimate withdrawal of the population from the poorer lands and the continued growth of urban centers especially those of the east (ocean border) and west (Uruguay River).

It is expected that by then these important centers of population clusters will be joined together with the
further development of trade and market conditions between them. The trends indicate that the departments of Colonia, Rio Negro, Paysandu, Salto and San Jose, which make up the land region of this state will continue to show slow increases in their cities and villages at the expense of the surrounding areas.

At least three important conclusions might be drawn from our analysis:

1. Uruguay population will increase slowly by natural growth, but it can be bigger by a sound policy of immigration. During the decade 1920 to 1930 the Uruguay population increased 700,000. Although we cannot look forward to similar substantial increases, we may expect increases at least to 1960 and probably beyond that time.

2. Urbanization and centralization in Uruguay will continue. The question of centralization has become a subject of great interest in Uruguay. Analyses of population and occupational trends in no way indicate decentralization. Such analyses point, in fact, to greater centralization. In fact chart of population shows the small rate of the rural population compared with the urban growth.

3. The actual change from the urban workers toward the industry should be increased. A careful policy of subdivision of the land by a sound tax system should be
provided. Aid to industrialists and cooperation between the state and private enterprise should be increased in order to obtain a better equilibrium between the land use of Uruguay and between its industries: cattle products, manufacturing products and agriculture, and new industries, as aluminum, cement, paper, etc.

Population Economic Status

The discussion of population growth and movements, of occupational trends, and of employment and relief can all be summarized in a discussion of economic status. In all of the above studies we have attempted to follow the people of Uruguay in their slow adjustments to changing forces. Every changing phase in the economic evolution of Uruguay has affected the economic well-being of the people of Uruguay. Centralization of activities and people, new industrialization trends have all contributed to the economic status of the people.

Wrong settlement on areas that have become or that have always been submarginal create scattered populations living on resources that are inadequate for their proper support.

Areas with a scattered population have their problems in costly but inadequate school facilities, in low income possibilities, and in high tax needs.

A sound policy of centralization of all these scat-
tered centers in the best located areas should be provided. A careful zoning should be provided to discourage such small and scattered settlements in submarginal land.

Land Use

Mostly all the area of the Uruguayan Region is devoted to cattle raising; some parts of it are used for extensive agriculture, however.

In the following chart we will find the areas devoted to agriculture, cattle raising and other uses.

We assume, following the advise of the principal experts in types of soil, that the area suitable for agriculture in Uruguay is 28,800 square miles. Of this amount only 5,434 square miles have been sown. 63,406 square miles are devoted to cattle raising and almost 10,000 of these are utilized periodically for some agricultural purposes.

Consequently, the general pattern of the population in the Uruguayan Region is of a great centralization of activities and people in some cities and an absolute depopulation of the country. This phenomenon can be changed by a general policy of "returning to the land" and also by the policy of creation of secondary industries, such as tanneries, textiles, shoe manufacturing, and so forth.

It can be changed, too, by a logical layout of high-
AREAS CULTIVATED (In square miles).

STUDY OF THE LAND

Water, rocky land and wasted land.
Forests.
Cattle raising.
Agriculture. (Intensive).
Suitable for crops.
Agriculture (extensive) and cattle.
Fruit trees.

Number 1: total area.
Number 2: land suitability.
Number 3: actual land use.

Total area: 72,000 s/m.
Suitable for cattle raising and agric. 55,000 "  (Extensive)
Suitable for Agric. 35,918 "  (Intensive).
" Forests 8,000 "  (Woods).
Wasted land. 10,000 "  (Rocky land, water).

SOURCE: International Labour Review.
June-sept 1937 and sept 1940.
ways and railroads and by an educational process of the people.

There is no rural zoning in the Uruguayan legislation and, consequently, even the useless land of some areas is being devoted to cattle raising purposes or to agriculture.

Rural zoning as well as urban zoning should be provided in Uruguay.

Urban Land Use (1)

It is the intensive use of a relatively small amount of land rather than an extensive usage of a large amount that denotes the importance of land utilized for urban purposes. The intensity of usage of the urban land is shown by the fact that 65 per cent of all the people in the Uruguayan territory live in urban centers. (The term of urban center as used in this study means a town with a population of more than 2,500 people. Towns with a population less than 2,500 are considered a part of the rural population.) On the basis of size and function the urban centers of these basins fall into three main classes:

(1) route, trade, and manufactural centers of first magnitude, (2) route and trade centers serving areas larger than counties, and (3) county seat trade centers.

The urban centers of first magnitude are similar in

(1) Economic Geography, 1940, page 314.
that they are all important route centers, and their wholesale, jobbing, and warehouses are the major collecting and distributing establishments in the basins.

Hydroelectric Power

In 1943 will be finished the dam on the Negro River which will provide 500,000,000 kilowatt hours per year; this power will be transported to Montevideo, and it will provide energy for practically all the country.

This dam located in the middle of the country is located in a rather flat valley, and consequently, the lake produced will cover a great area. The lack of mountains in Uruguay determines this project which gets its energy by the volume of the mass of water rather than from its height. This lake of 1480 square kilometers will change the physiographic and economic features of such area, and it should be studied as the Tennessee Valley Authority with the problem of the Tennessee valley. (See report on Tennessee Valley Authority.) In fact although there are definite differences between both valleys and also between the two general conditions, economical, land use, and interrelationships within these areas, the same principles which applied in Tennessee Valley Authority could be applied to Rio Negro Valley with great success. The area of Tennessee Valley Authority is approximately two-thirds of the area of Uruguay.
The topography of the area will make a very large lake.
ECONOMY OF URUGUAY
Pastoral Activities

(see table 8).

The economic life of Uruguay is far from self-sufficient. Uruguay has more than 80 per cent of its area devoted to cattle raising and 7 per cent to agriculture. Practically all the production of the country comes from the pastoral activities as we can appreciate in the following charts.

On the other hand, there being few men needed for such pastoral activities, the rural population of the country is extremely small. This is a problem which we consider to be one of the most important of our studies. (See Master Plan).

In the present part III we are going to analyze as carefully as we can the actual features of the productive and consumer life of the country, and as a second step the exportation and importation of Uruguay.

Our economy is not likely to be changed suddenly, and furthermore, only if a very sound state policy in planning is applied, will it be changed in the next 20 years.

Uruguay can obtain a more equilized life if the agricultural and industrial activities are improved. And these improvements can be obtained by state action in such a country as Uruguay where the governmental set-up is favorable for such measures of state control.

Cattle and its derived products being the main
Uruguayan cattle.
factors of Uruguayan resources, we will analyze especially this feature in our chapter about "Exportation."

In fact, as a summary, we can show the amount of such activities in the following chart, and in the chart which shows the land utilization of Uruguay. (See also map of actual land use.) (see table 9.)
Agriculture (see table 10).

As we can appreciate in our map of actual land use, the agricultural centers occupy primarily four places over the Uruguayan Region:

1. Canelones area (surrounding Montevideo); practically two-thirds of the total area devoted to agriculture.
2. Uruguay River area with small centers in Salto, Paysandu, north of Fray Bentos.
3. Mercedes area.

There are other small agricultural centers scattered over the country but of a very relative importance. This can be studied in our land use map.

In 1932-33 only 1,027,755 hectares (4111 square miles) were sown. In 1920-21 the total number of persons engaged in agriculture was 92,704 in an area of 780,000 hectares or 3,120 square miles. In 1932 it was 85,662 in an area of 1,027,755 hectares (4,111 square miles). In 1934 it was 1,300,000 hectares or 5,200 square miles. However, it is estimated that this figure of 1,300,000 hectares includes about 500,000 hectares of occasional crops, in particular oat fields for fodder. There is reason to believe that in 1920-21 these crops, which come rather under the head of stock-raising, did not form so large a proportion of the total.
The impression given by these figures, together with the analysis of the economic tendencies of Uruguay, is that such progress as is being made by agriculture is very slow. This is really surprising in a country with more than enough land, suitable for cultivation of any crop belonging to the temperate zone, endowed throughout with a perfectly healthy climate, and still having a population of only 10 persons per square mile in some regions.

The reason is that the three main branches of Uruguayan economic activity—stock-raising, industry and crop-raising—move in a state of mutual interdependence, a sort of equilibrium which, in a period of economic uncertainty like the present, tends to give the superficial observer an impression of stagnation. It would be difficult, however, to find in Uruguay any new or even temporarily inactive economic factor of the kind which has helped other countries to extract themselves from the trough of the depression. The prosperity of Uruguay rests almost exclusively on the exportation of the products of the stock-raising industry; for fifty years their value has always represented over 80 per cent of the total value of exports.

The industry of the country, on the other hand, is altogether dependent on the home market. This is also true of crop-raising except for one or two crops, flax
and oats. If Uruguayan industry is to expand, there must first be a revival of stock-raising, the underlying economic foundation of the country; there must be a rise in the international prices of meat, hides, and wool, leading to an improvement in purchasing power at home. The same argument applies in some measure also to crop-raising, the growth of which, moreover, is dependant on the increase of the population.

If the state, by means of a general policy, should decide upon the formation of new farmer settlements in some of the regions classified as "good agricultural lands", these difficulties would be eliminated. So the population increased, the purchasing power increased too, a rise of new manufacturing industries in some part of the territory would be possible. (See map number .)

The reason for an increased crop raising depends in a rise of agricultural products in the international market. In fact Uruguay can not compete with Argentina in this field. The Uruguayan land, while excellent for stock-raising, needs a careful and scientific development of its agriculture. Not that the land is bad in itself, but its yield is said to be lower than that of Argentina. If we analyzed the yield of wheat per hectare, we would confirm this; although this cereal is cultivated mainly in districts recognized as particularly suited to it, the average yield per hectare was only 571 kilograms for the
period 1911-1920; it rose to 790 kilograms for the years 1926-30 and fell back to 553 kilograms in 1932-33.

The other reason that confirms this statement is this: There is so much difference in the return from crop production and from stock-raising in Uruguay that its economy is not affected by the former in a great proportion. It is not so in Argentina where the return of crop production determines the future area devoted to stock-raising or to agriculture in accordance with this return. In Argentina these two activities are very dependent one from the other; in Uruguay the latter dominates the economic life of the country nearly exclusively.
Exportation:

Animals. Cattle and related products.
Horns.
Meat and extracts.
Sow.
Hides.
Fat.
Fertilizer.
Bones.
Wool.
Other products.

Agriculture and related products:

Grains. Birdseed, rice, oats, barley, flax, corn, wheat.
Flour.
Butter.
Fruits and vegetables.
Fodder.
Others.

Extractive Industries, mining, fishing, etc:

Metals.
Fishes.
Hunt.
Others.

Provisions for Ships
Principal exportations:
Uruguayan Statistics, 1939.
Pastoral Industry

The pastoral industry furnishes about 80 per cent of the total exports. It constitutes the basis for the economic, commercial, political and even social life of the country as a whole. In no other South American republic does one industry play so vital a part in the national welfare. This is inevitable in a country so richly endowed with grazing lands and so miserably handicapped for any other resources. Nearly 80 per cent of the total area of this nation is devoted to pastoral activities.

This dominance of the grazing industry results from favorable physical factors and economic conditions. The mild climate with an annual rainfall of 40 or 50 inches, in general fairly evenly distributed through the year, provides nutritious grasses in all seasons and permits open range grazing at all times. Thus, feeding in expensive sheds is not necessary. While the summers are hot, rather constant refreshing breezes alleviate the heat of the summer day and pump most of the water for the cattle. The rolling green pasture lands are well drained and, consequently, excellent for sheep; in addition the numerous small streams furnish water for the thirsty roaming animals. The whole country lies near the sea or
has transportation facilities which provide outlets for the products of the range.

Various economic conditions favor the dominance of the grazing industry. They include the sparse population with a traditional preference for a free open life on the range, large land holdings, and profits in the industry. Omitting the city populations of the capitals of the departments, Uruguay has a population density of 10 persons to the square mile as an average; few immigrants flock to Uruguayan shores for the country has little need for them with its huge land holdings. All the cattle lands of Uruguay are divided among 31,400 properties. Large "estancias" common to most parts of Uruguay favored the extensive development of the animal industries; they afforded the pasturage for thousands of animals under one management. They gave through huge profits from a grazing industry on a gigantic scale the funds sufficient for a comfortable living and good education for the Estanciero and all the members of his family, and to introduce imported purebred stock, a factor of prime importance in the evolution of the animals products in the export trade.

Wool

For three centuries after the introduction of cattle into Uruguay from Argentina in 1603 and sheep five years later, wool, hides and tallow constituted the chief commer-
cial products of this pioneer grazing country. Wool, easily produced in this remote region, because of its high value in proportion to its weight could stand the cost of transportation to distant markets without appreciable deterioration. Although the sheep industry languished, little attention being given to the improvement of the flocks for more than 200 years, wool led all other commodities in commercial importance. Wool constitutes almost one-third of the total exports of Uruguay.

**Hides and Skins**

Hides and skins were associated export commodities of wool for centuries. They were produced cheaply, could be handled easily and transported long distances without marked deterioration. In colonial days cattle and horses roaming the rolling hills of Uruguay were hunted like wild animals for their skins which when salted or dried could wait months in remote corners of the world for the uncertain means of transport of the times.

While hides were a primary product of the animal industry for 300 years, they have come to be during the present century a by-product of the slaughtering industry, except for a few horse hides.

Other than hides, wool and meats various miscellaneous animal products constitute about 8 percent of the total export of the country. Among these tallow and
grease, by-products of the packing, canning, and extract industries, contribute 4 per cent; frozen meat offal and canned tongue, the preserved instruments of bovine speech, 1 per cent; horns, bones and hair, adornments for the pocket knife, and the brush, 1 per cent; and meat extract, the most concentrated form of beef, 1 1/2 per cent.

Meats

In contrast to wool and hides, meat products have come forward in the trade of the country only during the last fifty years. Before that time the carcasses of the animals were of little value since they could not be transported in quantities for long distances to the markets. In the old days thousands of sheep were driven to brick kilns, slaughtered on the spot, and their bodies, stripped of the hide, were flung into the furnace to feed the fires. But the rise of the jerked beef industry, the development of refrigeration and cold storage transportation, the establishment of modern slaughtering plants, the increasing demand for meats in northwest Europe, and the marked decline of beef exports from the United States following 1900 have combined to advance Uruguay in spite of small area to second place as a beef exporting country.

The meat exports of Uruguay include a variety of products. In the order of increasing importance they were frozen mutton, jerked beef, canned meats, chilled beef and
frozen beef.

Other Products

Frozen mutton, jerked beef or tasajo, canned meats, frozen and chilled beef.

Products of the Farm (see table 16)

Although climate, relief, and soil favor the production of a great variety of crops in most areas of Uruguay, the products of the soil play an small place in the commerce of the country. In fact farming is little developed in the Republic; about 2,000,000 acres, or per cent of the area of the country, are under cultivation. Also only per cent of the population are engaged in crop production. Nearly all the cultivated land which is devoted largely to grains, seeds, and vegetables lies in the five southern departments of Canelones, Colonia, San Jose, Minas and Florida, departments in close proximity to Montevideo and the Rio de la Plata. With this small area devoted to crops the country barely supplies its own wants although in years of abundant harvests a small surplus remains for export, especially rice.

In fact although nearly 80 per cent of all the area of Uruguay is suitable for intensive agriculture, Uruguay imports all the potatoes needed by its population. This import came before the war from France especially. (1)

(1) Foreign Commerce Weekly, August 29, 1942.
The importation, exempt from all custom duties and charges, of a maximum of 17,000 tons of potatoes for domestic consumption is authorized by Uruguayan decree of August 3rd published in the Diario Oficial, August, 1942.

A number of conditions have retarded the expansion of the crop areas. The estancieros with extensive land holdings have had huge incomes from the sheep and cattle industries without much effort. No economic pressure forced them to consider the cultivation of the soil. The population of the whole country is sparse; these people composed chiefly of herders not accustomed to the laborious planting, tilling, and harvesting of crops prefer the easy life in the saddle to one working the soil. No large stream of immigrants, as in Argentina or Brazil, entered and of necessity broke the sod for crops; the persistent pastoral estates did not make room for them. The periodical appearance of grasshoppers or locusts with their all-devouring appetites catch the crops, except wheat and flax, at the height of their vegetative growth when most appetizing to these voracious pests.
Provisions for Ships

Montevideo is the anchorage during the winter months of various whaling flotillas owned by British and Scandinavian firms operating in the South Atlantic. Up to 77,000 barrels of whale oil have been secured in a season.

These flotillas as well as the other ships coming from Europe and the United States demand a large amount of provisions of all kinds.

The needs of their populations as well as fuel and other provisions for these ships constitute one of the main resources of the Uruguayan exportations.
Extractive Industries

All minerals now belong to the nation as its imprescriptable and inalienable property, and no fresh claims can be recognized.

Uruguay has a large amount of marole of great beauty and variety, as may be seen in many large buildings at Montevideo, especially the Houses of Parliament. There is also a large quantity of granite.

In the departments of Salto and Artigas there are fine specimens of agate, onyx, and opal. For more than 50 years there have been gold mines working at Cunapiru in Rivera.

Coal, oil and firewood are all imported.

The good quality of clay in some regions, especially in Soriano, Paysandu and Malsonado, has promoted the development of numerous brick manufacturing plants; these plants are scattered over the country, but the main important ones are located in the outskirts of Montevideo.

In the outskirts of Montevideo there has been developed during the last 10 years a huge cement plant which is one of the most important industries in Uruguay for being practically self-supporting. The kind of minerals for such manufacture is extremely good in the southern part of the region.

In the departments of Colonia, as we have seen in the former analysis, there are huge quarries of stone
and of a very good quality of sand for building construction. This is one of the main resources of the southwest part of this region. Other products such as limestone, talc, chalk, "agatha," and some metals are found also in this region.

In the southeast part of this region (Maldonado, Rocha) there are extensive banks where fishing activities have been developed during the last 15 years. In the islands which border this point wolves' skins have been the main income of the inhabitants of this southern part.

Hunting represents a very small amount of the extractive "industries" in Uruguay. The state controls the epoch of hunting in order to prevent the extermination of the different animals of each region.
Industrial Developments

The artificial stimulus of a protective tariff has bolstered up many small firms run on uneconomical lines. Rationalization has not yet spread to Uruguay, and these small firms with their high overhead charges increase the costs of production and are the object of constant solicitous legislation.

The four Uruguayan frigorificos have an estimated capacity of 4,000 cattle and 7,000 sheep carcases per day. In addition there are numerous saladeros producing charque, or jerked beef, for country consumption and for export to Cuba.

The more important firms manufacture cloth and leather goods, building materials, and wines and non-alcoholic drinks. The cloth factories are improving the quality of their output every year, but it will be many years before the weavers can hope to equal British materials.

Boots and shoes made locally are of first quality, and the building material industry turns out first class products. Uruguayan marble is used extensively both in this country and in Argentina, and a first class Portland cement is manufactured although the supply is still insufficient to meet the demand.

Other important articles produced are cotton, woven and knitted, jute bags, cordage, flour and biscuits, glass and bottles, cigars and cigarettes, disinfectants, wine,
**Industrial Activities and Mining Deposits.**

<table>
<thead>
<tr>
<th>Location</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTIGAS</td>
<td>1 Dry Meat Plant, Precious Stone, Canning Factories.</td>
</tr>
<tr>
<td>RIO NEGRO</td>
<td>Meat Plant, Canning Factories, Corn and Flour Mills, Brick Manufacturing, Soap Manufacturing, Boot and Shoe Manufacturing</td>
</tr>
<tr>
<td>COLONIA</td>
<td>Quarry, Corn and Flour Mills, Brick Manufacturing</td>
</tr>
<tr>
<td>MINAS</td>
<td>Mineral Water Natural, Cement Plants, Marble, Coffee Manufacturing</td>
</tr>
<tr>
<td>MALDONADO</td>
<td>(The same as Rio Negro), Marble</td>
</tr>
<tr>
<td>GRENADA</td>
<td>(The same as Artigas), Gold in small quantities.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>RIO NEGRO</td>
<td>Sulphur lead, gold, silver and copper. (Small quantities).</td>
</tr>
<tr>
<td>MALDONADO</td>
<td>Copper in Pan de Azucar Limestone.</td>
</tr>
<tr>
<td>CAIBOLES</td>
<td>Marble and Slate Shale.</td>
</tr>
<tr>
<td>CHERO LARGO</td>
<td>Copper and Porphyry.</td>
</tr>
<tr>
<td>COLONIA</td>
<td>Lead, Iron, Sand and Stone, Graphyte.</td>
</tr>
<tr>
<td>DURAZNO</td>
<td>Gold, Silver, Copper and Talc.</td>
</tr>
<tr>
<td>FLORIDA</td>
<td>Gold and Manganese.</td>
</tr>
<tr>
<td>FLORIDA</td>
<td>Iron and Slate Shale, Red Granite.</td>
</tr>
<tr>
<td>MALDONADO</td>
<td>Coal, Copper, Lead Porphyry, Marble</td>
</tr>
<tr>
<td>LINAS</td>
<td>Lead Sulphide, Copper, Amethyst, Rock Crystals, Agathe.</td>
</tr>
<tr>
<td>MINAS</td>
<td>Rock Salt, Hydraulic Lime.</td>
</tr>
<tr>
<td>MINAS</td>
<td>Salt, Green Granite</td>
</tr>
<tr>
<td>RIVERA</td>
<td>Gold</td>
</tr>
<tr>
<td>MINAS</td>
<td>Mineral Coal from the &quot;Sierra General de Rio Grande&quot; Brazil</td>
</tr>
</tbody>
</table>

NUMBER OF INDUSTRIAL ESTABLISHMENTS.

2390 establishments obtain its raw materials in other countries.
2867 " " " " Uruguay.

There are 100,000 workers and employees.

Source: La Republica del Uruguay.
Elzear S. Chaffra.
Montevideo. 1935.
beer and spirits. A company formed to manufacture motorcar type and rubber articles now practically monopolizes the market.

A Government organization, the Institute of Quimica Industrial, has a monopoly for the manufacture of chemicals in Uruguay. Among its products are alcohol, sulphate, chloride and carbonate of soda, chloroform, collodions, sulphuric ether and acid, superphosphate, commercial sulphate of iron, benzol, toluol, and naphthalene, nitric acid, hydrochloric acid, caustic soda and ammonia. Large quantities of soap are manufactured in 12 factories in Montevideo and 30 in the interior.

**Ports of Importation and Exportation**

(see tables:17 anul8).

As we can appreciate in table number , there are primarily 13 cities or towns of importation and 22 of exportation and importation.

The principal six custom houses are located on the Uruguay River (Argentina border) and practically all are well connected with the center of the Region; Montevideo. In general there is no system of relationship among the different ports, and such a system should be provided in our master plan; to have an organic layout of highways and railroads connecting these ports and the different agricultural, cattle raising or industrial areas is vital to the life of the region as a whole. (See Master Plan.)
The Import Trade

(SEE TABLE 19)

Since manufacturing industries in Uruguay are of little consequence, the imports consist almost entirely of manufactured commodities of one kind or another. The small manufacturing establishments of the country are engaged in the primary preparation of the products of the range for the export movement. This trade situation naturally grows out of the handicaps hindering large scale manufacturing developments.

Uruguay lacks the resources and facilities for significant industrial operation. It has neither coal nor petroleum of importance. Only three per cent of the areas support a forest which might furnish some fuel for power. While the country has a network of streams, they supply little or no hydroelectrical energy up to now. In 1943 it is expected to have finished the Rio Negro dam that will provide for 500,000,000 kilowatt hours per year. I will mention this fact later on.

Basic minerals, as iron ore, copper and others, are not present in Uruguay. The sparse population and a small immigrant class do not supply the necessary cheap labor for manufacturing. In addition the landed aristocracy, supported by huge incomes from vast estancias, has not favored many industries.

In spite of these disadvantages a number of commodities, such as flour, shoes, furniture, brick, tile, cement,
glass and some textiles, produced at home under the protection of a significant tariff, find a ready market. These manufacturing interests, however, are chiefly small local concerns and cannot supply the market which must depend almost entirely upon the importation of foreign goods.

**Foodstuffs and Beverages**

Although Uruguay is one of the most arable countries in the world, food products and beverages constitute the leading class of goods imported. They make up about 18 per cent of the total receipts. Like the food imports of Chile they consist, with only one significant exception, of products which Uruguay cannot cultivate owing to climatic conditions. They include in order of value sugar, potatoes, olive oil, yerba mate, coffee, tea and wines.

Sugar, the leading item in this class, amounts to one-third of the class or to 5 1/2 per cent of the total import trade. Cane sugar for climatic reasons cannot be produced in Uruguay while the lack of a labor supply and the climate have not favored the cultivation of the sugar beet. Consequently, sugar must be imported. About 80 per cent of all sugar consumed in Uruguay comes from the United States; the remaining 20 per cent consists of beet sugar chiefly from Germany. (Figures before the War.)

Despite the fact that the second industry of Uruguay
is crop production, Irish potatoes follow sugar in the list of imported foodstuffs. Potatoes occupy less than one-half of one per cent of the crop land of Uruguay although climatic, soil, and relief conditions are not adverse to the growth of potatoes. They do not fit well into the dominant stock-farming industry. Most of them come only a short distance from Argentina, but France supplies small quantities; even the far away United States has had a share in the business. (Data up to 1940.)

Olive oil, a product for the most part of a climate markedly different from that of Uruguay, stands third or fourth in the list of foodstuffs. Practically all of this commodity comes from Mediterranean Europe (chiefly from Spain) the region which supplied the basal stock of Uruguay's population.

Among the beverages imported and consumed yerba mate, or Paraguayan tea, leads. What coffee is to the Scandinavian yerba mate is to the Uruguayan in all the country districts. It is considered one of the necessities of life of the campos. For the common people it serves as the breakfast beverage, and at intervals during the day it strengthens the tie of friendship at social or business gatherings.

Uncultivated in Uruguay for lack of favorable climatic conditions, it enters the import trade to 5,000,000 pesos. With the spread of the habit of partaking of mate
and an increase in the population, the purchases of this commodity will increase although coffee and tea may replace it in some districts among people of the upper classes. Coffee imports amount to about \( \frac{1}{3} \) of the purchases of yerba mate; nearly all of the product comes from Brazil.

Tea from British India and Japan enters the import trade as one of the important beverages. In the cities it takes the place of mate as the afternoon tea.

Wine vies with coffee for second place in value in the list of imported beverages, but in quantity it amounts to four times as much. Nearly all wine imports came from Spain, Argentina, France, and Italy; Spain supplied the major portion.

In addition to the preceding principal imports of this class, Uruguay buys in small quantities a great variety of foodstuffs from diverse regions. The more important ones include fresh grapes from Argentina, farina from Brazil; oranges from Paraguay and Brazil, dried fruits from Argentina and Chile, raisins from Spain and the United States, sardines in oil from Spain, and canned goods from the United States.

With the exception of potatoes the major imported foodstuffs and beverages cannot be produced on Uruguayan soil. Consequently, they will continue to enter the trade in significant amounts. A rising standard of living accompanied by a large purchasing power and an increase
in population will swell the trade in many minor food products, both in amount and variety, and increase the importance of this class of goods. On the other hand, the expansion of farming will eliminate some of the major imports, especially potatoes and many of the minor ones since relief, soil and climatic conditions favor the production of such crops.

**Raw Materials**

The first class of goods in the import trade of Uruguay consists of iron and steel products which include automobiles, industrial and agricultural machinery, and a large variety of general iron and steel commodities. Since the country does not have the basic materials for manufacturing these products, local plants depending upon imported raw materials and fuel turn out a very minor part of the requirements. Consequently, general prosperity in the country, a growing building industry, the expansion of agriculture, a road improvement program, and increased industrial activities create a rather active market for this class of goods which amounts to 43.11 per cent of the total imports.

**Automobiles**

Automobiles constitute almost 4 per cent of the total imports. The rapid increase during recent years in the
number of automobiles purchased represents one of the most striking developments in Uruguayan trade. The betterment of living conditions, favorable financial conditions in the rural districts, and extensive road improvement increase the use of automobiles.

Within its small area Uruguay has better roads than most South American countries. A well developed system of highways penetrates a considerable distance inland from Montevideo. From the capital to Canelones, San Jose, Minas, Florida, and Atlantida, Piriapolis, the roads are macadamized. As in Argentina during the dry season, automobiles may traverse much of the range without great difficulties. However, nearly all the cars are in the southern part of the country.

As in the other South American republics, the United States dominates the trade in automobiles; it supplies 97 per cent of the total. Motor truck transportation is little developed in Uruguay; even in the cities trucks are little used. The expansion of farming, road improvement, and a rising standard of living will increase materially the use of the automobile throughout the country. In spite of this fact in the last five years this situation is quite changed; trucks are more and more used in competition with the railroad and other systems of transportation.
**Industrial Machinery**

Industrial and construction machinery follow automobiles in the list of iron and steel imports. Port improvements, railway and road construction, city development and the expansion of manufacturing industries account for the major receipts of this class of machinery. While a number of countries share in this trade, British goods lead with those of Germany second, Argentina third and the United States fourth. (Data 1939). With the changes brought by the war this situation is absolutely changed, of course.

**Agricultural Machinery**

In spite of the small place farming plays in the export trade of Uruguay, agricultural implements constitute a significant item in the import trade especially during recent years. The increase in the area devoted to wheat, oats and flax accounts for the chief imports of farm implements. They included plows, harrows, drills, planters, harvesters, and tractors. Also numerous implements entered the farming districts. The United States supplies more than 50 per cent of the requirements.

A number of conditions point to an active market and increasing imports of agricultural machinery; the small output of Uruguay for want of raw materials, power and labor, the small rural population making necessary the
use of labor saving machines, the level land and fertile friable soil free from stones and stumps, facilitating the use of machinery of all kinds, and the extension of the farming area which most certainly will take place during the next decade.

General Iron and Steel Goods

In keeping with the major activities of the country the chief items in this group include (1) wire fencing, which encloses the vast stock ranges and the smaller crop lands; (2) iron bars, rods, sheets, pipes, and tubes for general construction purposes; (3) galvanized sheets chiefly for roofing; (4) steel rails for the upkeep of the railways; and (5) tin plates for the extract factories and the meat canning establishments. United Kingdom has the largest share of the trade in these commodities as a group while the United States, Belgium and Germany supply practically all the remainder. (1939)

Without basic raw materials, power, labor, and capital for great industrial establishments and with continued expansion of agriculture, shipping, and construction the market for iron and steel products will expand.

Petroleum Products and Coal

Uruguay mines no coal; it produces no petroleum. It cuts an insufficient supply of firewood from the meager
forest areas. Consequently, its packing plants, small manufacturing establishments, railways, steamships, and even the homes for cooking must depend on importation for fuel needs and for illuminating and lubricating oils.

Mineral oils and coal constitute respectively 12 and 10 per cent of the imports of the country.

The mineral oils include a variety of products. Naphtha (benzene) and gasoline, both used for automotive purposes, amount to about 30 per cent of the purchases of mineral oils. Fuel oil, used extensively for ocean shipping, on the railways, and for industrial establishments, makes up almost 30 per cent of the oil imports. However, it is being replaced by coal on some railways.

As in the petroleum imports of Argentina, the United States has the dominant position in those of Uruguay, supplying nearly four-fifths of the total. Mexico supplies nearly all the remainder.

In contrast to the petroleum products, coal comes largely from the United Kingdom although in recent years the United States and Germany have furnished small quantities. (1939) Most of the coal imported by Uruguay is steam coal for the railroads and industrial plants. The railways are the principal consumers, followed by the Montevideo Gas Company. Domestic consumption of coal is small and confined to cooking.

Uruguay will continue to import coal and in increas-
ing quantities as railways expand, as the range and the
farms supply more products for the export movement, and
as new factories develop.

Textiles

Textiles and textile manufactures make up about 10
per cent of the imports of Uruguay. They consist almost
entirely of manufactured articles although twelve cotton
factories import ginned cotton. Domestic mills turn out
about 15 per cent of the consumption of cotton goods and
35 per cent of the woolens.

An active market exists for cotton goods in Uruguay
since the country grows no cotton and manufactures only
about 10 per cent of the consumption.

In the imports of textiles woolen goods rank next
to cotton, with about one-fourth of the total in spite
of a large clip of wool and a well advanced domestic
woolen industry which turns out one-third of the total
requirements. In general woolen goods are worn by men
in both summer and winter and by women chiefly in winter.

In the textile trade as a whole the United Kingdom
leads with about one-fifth of the total. While it supplies
all classes of cotton and woolen goods and fabrics of jute
and linen, it dominates the trade in high grade cotton and
woolens, furnishing as much as four-fifths of the pur-
chases.
Wood Products

With only three per cent of the land of the country supporting a forest growth and these areas in the more remote parts, Uruguay has to depend upon foreign regions for its requirements of forest products. These amount to about 3 1/2 per cent of the total imports in spite of the fact that most buildings are made of stone or cement. The imports consist mostly of pine lumber, box shocks, hardwood flooring, fence posts and paper. They will be used in greater quantity as the country progresses. As a matter of fact the importation of paper has been reduced by the creation of a great manufacturing center in the Negro River (Mercedes).

Other Imports

While a great variety of other commodities amounting to more than one-third of the total receipts are imported, few have special significance. Tobacco amounts to 1 1/2 per cent of the foreign purchases.
Trade Evolution

The commerce of Uruguay reflects the whole economic status of the Republic. It has been strikingly dominated from early times by a single industry. The animal industries have contributed, until recently, more than $9/10$ of the export commodities and have contributed to the purchase of most of the imports. Along pastoral and agricultural lines the future of the country lies.

For significant manufacturing developments the country is peculiarly handicapped. It has no coal, no petroleum, no minerals for a basic iron and steel industry, meager forest resources, little water power and few other raw materials for large factory establishments. The Uruguayan government has created a big hydroelectric plant in the middle of the country on the Negro River; this plant will be finished in 1943, and it is expected to improve the power for the industrial development of the country.

Manufacturing in Uruguay consists chiefly in the preparation of the products of the range and the farm for export and for local use or the making of cement, brick, glass and furniture for domestic consumption.

On the other hand from the standpoint of arable land Uruguay is one of the most usable countries in all the world. Cattle ranches, farms, and mixed cattle ranches and farms contain $87$ per cent of the total area. On
these lands Uruguay depends for its commercial prestige. While the animal industry has dominated the trade of Uruguay for centuries, the evolution in the products of the range from wool, hides, tallow, and tasajo of the old days to frozen beef, chilled beef, canned beef, frozen mutton, wool, and hides of today accounts for the rapid growth of commerce during the past 30 years. This progress will continue in spite of the fact that Uruguay does not have vast areas of ungrazed lands like Argentina. Although the total number of meat animals may not be increased greatly, some increase may come by the extension of forage crops, fenced ranges, and better grazing methods. A market improvement in the grade of animals, resulting from the eradication of the tick in the northern half of the country, the elimination of the hoof-and-mouth disease, importation of purebred stock, better breeding methods, and the constant demand in Europe for high grade meats will increase greatly the shipment of chilled and frozen beef which will add materially to the value of the export commodities.

A greater evolution, however, will take place along another line. Until recently farm products have contributed less than 5 per cent of the exports; in 1925 they supplied 10 per cent; in 1939 they supplied 20 per cent. Some of the agricultural commodities imported have decreased. With only 8 per cent of the land under culti-
BUILDING ACTIVITY.
URUGUAY. Dept. Montevideo.
Authoris. permits.
1929 = 100.

Source: Monthly bulletin of Statistics.
League of Nations.
No.1.- Vol. XXI. 1940.
vation, a rapid influx of immigrants (they have already begun to arrive and the government is making room for them) and an active demand in the world market for farm products, crop production will sweep like a great wave across the pastoral domain of former years and will multiply in volume and value the trade of the country. Uruguay, in the evolution of its agriculture and its trade, stands upon the threshold of a period of great expansion.

Building Activities

One of the most significant aspects of the economic trend of Uruguay is seen in the analysis of the following chart about "Building Activities," where we can appreciate the variation of one of the most important urban activities as a result of the internal situation and the reflection of the world situation.

We can see, for instance, the variation of this activity since Pearl Harbor, and its lower rate after the raw materials existing in Uruguay were utilized in 1940-41.

And the world crisis is very well shown in the chart.
1. Problems of land use adjustment.
   Cattle raising areas.
   Agriculture.
   Forests
   Recreation, hunting and fishing.
   Flood control.
   Problem areas (reservations, submarginal land, premature land subdivisions).

   Resettlement problems; possibilities; state aid.
   Centralization of too small towns into cities of 15,000 to 40,000 inhabitants.
   Future cities; location; size.
   General recommendations: Urban planning, town planning and rural planning.

3. Transportation problems.
   Highways.
   Railroads.
   Navigation.
   Airways.
   Transportation summary and proposals.
MASTER PLAN.
Photo by Pedro Rey.
Size of the map: 3' 1/2. x 2' 1/2.
4. Industries.
   General considerations.
   Actual location and future location.
   Proposals.

5. Carrying out the plan.
   Actual planning programs in Uruguay.
   Legal administrative problems of National planning
   in Uruguay.

6. SUMMARY.
Problems of Land Use Adjustment

The problems calling for planning the utilization and conservation of Uruguay's natural resources have been presented in the preceding pages of the report. Before discussing planning itself, it may be well to summarize these problems. Since the state is quite varied, it is best to consider them by areas: (1) the predominantly cattle raising area, roughly 90 per cent of the total area; (2) the predominantly agricultural area, with one total of 5,434 square miles, nearly 8 per cent of the total area; and (3) the predominantly forest areas, 2 per cent of the total area.

The agricultural area can conveniently be divided into an urban-agricultural section dominated by metropolitan milksheds, truck farms having many cities and villages and a more general farming area with predominantly rural interest (estancias).

1. Cattle Raising Areas.

In the cattle raising area the problem of adjustment will be to reduce the area to the best suitable for this purpose. It will be necessary to avoid, by State action, the use for cattle raising of areas unsuitable for this purpose. Also the areas of good soil for agriculture and well located will be prevented for use for cattle raising. This adjustment should be made gradually in
order to obtain a new equilibrium of the finances of Uruguay which for more than 100 years has been dependant on the cattle products.

This new policy should be carried out by the Department of Cattle and Agriculture and by special system of taxation over the enormous parcels of land in such conditions. The department of Public Works should plan its highway system principally in connection with the problem.

We propose the change of areas for cattle purposes as follows: a reduction of the area from 63,406 to 40,000 square miles during a period of 20 years.

The first step in this direction should be the zoning of the areas of good soil and good location for mixed cattle and agriculture purposes, and the zoning of the rocky hills showed in the plan as "reservation", or "problem areas."

2. Agricultural Areas

The departments of Canelones, Colonia, Soriano y Rocha should increase its areas devoted to agriculture.

A complementary highway system and railroad lines should serve these areas. The State should advise the location of new cities by the facilitation of public services, and the location of schools and other public services on appropriate locations. (See Master Plan.)

In the agricultural area where farms occupy most of
land the problems of readjustment are largely private to be made by the farmer himself. The exception is erosion control which calls for public activity, aid, and regulation. In the eastern departments it may involve concerted action to secure wind breaks to control wind erosion, etc.

In the non-agricultural area there are some compact agricultural settlements near markets on railroads and highways and on good soil. Insofar as there is need for further expansion of agriculture it should take place on the land suitable for agriculture in already established communities so as to reduce the demands for new schools, roads, etc. to a minimum. Insofar as submarginal land is now in use, or settlements have become scattered, the land should be vacated in favor of other land uses. The first calls for planning in settlement, the second for the planning of resettlement.

Agricultural Policy

We express another aim for the planning of agriculture in the Uruguayan Region. The methods of agricultural organization, types of farming, size of farms should be encouraged. We consider, however, that these are matters primarily within the sphere of agriculture rather than that of Town and Country Planning. Being Uruguay a country of rural activities, we suggest the study of both agriculture and planning policy as related matters.
3. **Forest Areas**

Uruguay has no forests. This is, of course, a result of its geological formation, but it is the result, also of the lack of initiative from the State and from the people, to change this situation. The State through the Department of Agriculture has tried to develop some areas for the creation of forest reservations, but always in a small scale. In June, 1942, the State bought an area of 24 square miles in the eastern part of the country (department of Rocha) to devote for forests.

As the existence of scattered woods in Uruguay are only on the main rivers and in the northern part of the country (department of Rivera), we propose the connection of these areas in order to obtain the best uses of them. These reservations should be studied in close relation with the recreational proposals which we propose along the future lake on the Negro basin.

The eastern coast of the country, quite sandy and undeveloped in spite of the recreational settlements of the last 10 years, should be another important area for future forests. The existence of pine trees all along the ocean in the department of Maldonado and of palm trees further north show us the possibilities of this region.

A very severe system of regulation for the location of cities and for the protection of natural resources in these areas should be provided.
It has been estimated that at least 400 square miles should be in forests for watershed protection, flood and erosion control, etc. In addition we need a considerable area of public and private forest. Planning here calls for:

First, public and private forests (including farm wood lots) whose main function is to produce timber, pulpwood, fuel and other forest products.

Second, "protection forests" for watershed protection, erosion control, etc. These may or may not yield wood and timber as by-products and can serve as recreational forests.

Third, recreational forests either for their aesthetic value as the hinterland for private recreation land or as the home for game and fish. This use is not inconsistent with the first two, but where land is submarginal for commercial forests the land may be managed for recreation directly.

**Recreation**

Planning involves an approximation of the area needed by a population of about 2,400,000 people in the form of public beaches, playgrounds, parks, and wilderness areas consisting of land primarily unsuited for forestry but capable of tree growth. Some of the finest recreation areas are to be found in the predominantly agricultural area as, for instance, the lake region of the Negro Valley,
SUMMER RESORTS
Atlantic coast.
the Eden Valley, and the east coast of Uruguay. Recreation will be a coordinate use with the forests of this area and even the farms. Both are a part of the landscape. It may be good public policy in the urban-agricultural area to use some of the agricultural land for recreation. In other words in certain respects "recreation" is the "highest" land use we have. Adequate state, county and city parks, playgrounds, beaches should be provided here.

The coordination of state, county and city recreational land plans is very important. It also touches the heavy traffic, scenic highways and trails.

In the non-agricultural area where land for recreation has few competing uses, public land for parks, game refuges, wilderness areas, scenic highways, etc. should be provided in reasonable quantities.

Planning for recreation should include privately owned land riparian to rivers and lakes used for summer homes, resorts, clubs and camps. These users have established themselves on the lakes and rivers in many parts of the state often to the exclusion of the general public. This emphasizes the need for public recreational grounds. On the other hand, in some of our counties private recreational lands are paying a large proportion of the taxes and any planning program should include the development and interrelation of this type of land use with the related uses of forestry and agriculture. It will call for an
Eden Valley, Tacuarembo. Future recreational area.
adequate highway system and close correlation with the administration of water resources, health and conservation.

Proposals: Recreation

The possibilities for recreation in Uruguay have been appreciated to a great scale, more perhaps than other of its problems.

In fact as we can appreciate in table , one of the main resources of the State is the amount of the expenditures made by the tourists who visit our country; the number varies between and during the three months of summer.

During the last six years a dependence of the Department of Foreign Relations has been developing a very interesting work to attract more tourists to our shores. This is the National Tourism Committee.

As we propose in our Master Plan, the recreational areas of the country should be carefully selected and its areas should be determined by a scientific procedure of correlation with the distribution of population and with its possible increase not only within the region itself but in the surrounding regions as well.

The Negro dam should be studied in connection with this problem, and as we propose in our Master Plan, the recreational area of the Eden Valley (Tacuarembo) should be bound together with the recreational areas on the lake and also with the banks of the Negro River in the north.
that actually are covered with shrub and trees.

The great possibilities for recreation of the ocean coast of Uruguay have been recognized during a long period of time. The natural beauty of its rolling land and its mild climate make Uruguay a possible recreational center of Region 6, but in our opinion Recreation has been overevaluated in Uruguay. In fact as we analyze the population of Region 6, of El Litoral and of the other regions surrounding Uruguay, and as we analyze the transportation system and the economic level of these regions, we appreciate that the future of Uruguay lies more in a sound increase of production rather than in an artificial development of its recreational possibilities. Recreation should be proportionate with our populations and with the population of Region 6 and the Buenos Aires metropolitan area. Recreation should be planned in a sound relationship with transportation systems, with land planning, erosion control, flood control, and improvement of agriculture and forestry; but recreation is not the only promise for the future of Uruguay. We believe that the future of Uruguay lies in a better distribution of its population, in the increase of its adquisitive power, in the increase of the exploitation of its natural resources, and a correlated physical and administrative system; we do not believe that Uruguay could be converted into a Montecarlo of the La Plata River, but it really could be a model state among the South American republics, not only as it is now because
of its advanced legislation, but because of the equilibrium of its activities, its population, the resources of its land, and its location in the Southern Hemisphere.

Recommendations

1. Acquisition and development of extensive river frontage for public recreational use in the principal rivers as we can see in the Master Plan.

2. Improvement of opportunities for fishing through restocking and uniform State fishing laws.

3. Acquisition and zoning of areas surrounding the lagoons in the eastern part of the country. Improvements of its woods and study of its possibilities as forest reservations. (See Master Plan.)


5. Zoning for the recreational use of the spots on the Atlantic coast showed in the Master Plan.

Hunting and Fishing

These forms of recreation have somewhat different land needs than the recreation discussed so far. They call for "wide open spaces" yet the public land available for this purpose is at present distinctly limited. More public land will become available as the land acquisition program goes forward, and this type of land use must be correlated
with the forest use. However, in the predominantly agricultural areas of the state it will be necessary for privately owned land to be used for these sports. The same problem has already arisen in the North. Public hunting on privately owned land is an adjustment still to be perfected.

Planning for hunting and fishing will also involve the National program of marsh restoration and public game refuges and the activities of the Department of Agriculture (conservation) in its game and fish work. Fishing especially will call for close coordination with water resources.

Coordination

Within urbanized areas regional planning for highways, parkways, forest reservations, water supply, etc. should be coordinated with the larger and more comprehensive State plan.

Transferring the Plan to the Land

After a plan has been made on paper and each class of land is assigned to its "best use," the problem still remains of transferring the plan to the land. If all the land were owned by the State, the Planning Board and other administrative boards would have the power to direct the uses of the land in the same way that a farmer arranges
his wood lot, crops, pastures, lanes, and gardens. However, the state does not own all the land; some is held by the towns, cities and counties. By far the largest area is privately owned and under least control by public agencies.

Much of our public ownership is thrust upon us by tax delinquency and there is a tendency to force it back into private ownership irrespective of its capacity to remain there. On the other hand the fact that publicly owned land is so responsive to the will of the State agencies is in part responsible for the condition of the public mind to get as much land as possible into public ownership. But public land of any kind is tax exempt for all units of government. Even if it is revenue producing land, as forest land eventually will be, the revenue will go to whomever owns it unless some arrangement is made in sharing the receipts as is done under certain departments. (Counties in the United States.) Non-revenue producing public lands mean direct loss of taxes from the town clear up to the "Department." Indirectly there may be considerable income to the state as, for instance, in hunting and fishing licenses and gasoline taxes paid by tourists. Local government especially will benefit if public parks and forests attract summer homes, resorts, etc. whose privately owned land becomes an important part of the tax base.
The area of privately owned land should be kept as large as possible consistent with public policy. In order that the private owner may use his land profitably to himself and yet in line with public policy, a new form of land tenure should be worked out.

Some special arrangements could be worked out to induce and assist the owner to control erosion, raise game, and permit the use of his land for certain recreational purposes. This principle can be extended to cooperation between two units of government and to the private utilization of publicly owned land.

Another mechanism for achieving the objectives of planning is zoning, the use of the police power to bring the utilization of privately owned land into harmony with public purposes. There is no zoning at all in Uruguay. Actually the owner of land can use his land as he pleases without even looking for a general and comprehensive use of the land of the Department (county).

Zoning should be studied in Uruguay in a close relation with land classification and a general policy of subdivision of the land, especially in the departments of the northern part.

Zoning is sometimes confused with "classification." Classifying land into agricultural and non-agricultural, forest and non-forest does not prevent the owner from using or selling it for farming or forests nor from
establishing a legal residence on an isolated tract where his presence creates expenditures for education, highways, relief and other public services. Classification, however, aids in setting up the zones.

Whether there is a formal "plan" or not, zoning becomes planning backed by the police power to enforce the plan. At once it creates the necessity for other public activities.

1. Since the zoning cannot be made retroactive, it does not correct the mistakes of the past. Settlers remaining in restricted districts are entitled to schools, roads, and other services just as if the ordinance had not been passed.

For this reason the State resettlement plans are of great significance. The two programs complement each other. Zoning without resettlement will only prevent future isolated settlement. Relocation of settlers without zoning will merely take out one group of farmers but will not prevent another group from repeating the mistakes of the past by buying any private land left in a submarginal land or problem area. Therefore, the situation with respect to high cost schools, roads and local government would remain unaltered.

2. The fact of having a zoning map is not enough. Designating an area as "forest" for instance is not enough. Unless the district really becomes a forest in reality as
well as on paper the results will be mainly negative. Land in state forests, being in stable ownership, causes no concern. A general policy should be adopted by the State in order to get the forests as well as other land uses where the land classification and the zoning map indicate it should be. Private land ownership should be induced to practice forestry, or agriculture or cattle raising on the respective areas that the law indicate. If he does not care to do this, he could trade his land for "Department" owned land in an unrestricted zone and the department can add the land so relinquished to its forests. The aim should be to eventually place all the land in a forest zone in stable forest ownership.

This will remove the temptation to use or sell land for purposes prohibited in the ordinance and make forestry a reality.

3. The zoning ordinances that Uruguay should approve should permit the recreational use of land in a forest district as long as this does not involve year-long residence. In fact camps, resorts, hunting and fishing cabins, etc., should specifically be mentioned as permitted uses. The forest zone should also include all "protection for states" and other forested land not acceptable under the classification study which will find their best use in general recreation, especially as "wilderness areas," hunting and fishing. In fact insofar as any land is
owned by the Department, it can be zoned and placed in a restricted zone without approval of the towns. Private recreational lands within a forest district will receive the benefit of forest surroundings protected by ordinance from undesirable uses. This will tend to enhance their value and make them more valuable from the standpoint of taxation.

4. Where private recreational uses require year-long residence for caretakers and others, counties should create "recreational districts." In these agriculture should be prohibited but forestry should be emphasized. Since the prohibition does not touch the question of residence, they do not change the situation with respect to schools and roads. Therefore, it can be said that the "recreational districts" are in fact "land use zones" in which the purpose is to preserve the district for recreation. In this respect zoning complements the work of the State Board of Health in connection with the Lake and Stream Shore Planning Laws. This particular type of zone could be adapted to any part of the state and the restriction made stringent to promote the highest use of riparian land.

After the 19 departments have been zoned, the readjustment of local governments to meet the new conditions becomes apparent, especially if these are large blocks of land in public ownership. The necessity becomes more acute
if a resettlement program redistributes population. Changes will no doubt have to be made in town and school district boundaries, and some of them may be vacated or dissolved entirely. Other changes may be desirable in the highway system, rural routes, in administrative policies with regard to state aids, etc. This will involve state administrative departments, such as conservation, highway, and education.

6. Under an ideal zoning setup agricultural zones will consist of compact settlements on good roads near markets, schools, churches and community centers. As in New York it should become our policy to supply these areas with the best public facilities possible commensurate with their needs and taxable wealth. As the number of people per mile of road or per school reaches the optimum this can be done most efficiently and economically with the smallest demands for state aid.

7. The principle of public control over private land so far established in urbanized areas and in the "marginal areas" can also be used in other land uses providing the public interest is sufficiently involved.

Flood Protection and Low Water Control

There are no studies about flood protection in any of the rivers or streams of Uruguay. A careful research should be made in the important rivers where floods are
especially injurious, such as Uruguay River, Rio Negro River, and Santa Lucia River. Of course, this control should be emphasized on these rivers because the location of the principal cities on its banks.

The floods in some of these cities are extremely harmful every year. No protection has been provided for the avoidance of such situations.

The Rio Negro dam, of which I will mention later on, will provide the regulation of this river. Some other projects have been studied for this river as well as for the Uruguay River. These projects have primarily the goal of obtention of electric power for the surrounding cities, but it should be also adapted to regional conditions by the obtention of an efficient control of flood and navigability. These are (1) Baygorria, with an hydraulic capacity of 60,000 kilowatt hours and a cost of 15 million dollars; (2) Paso del Puerto, with a hydraulic capacity of 115,000 kilowatt hours and a cost of 25 million dollars; (3) Rio Negro Kim. 125 with an hydraulic capacity of 84,000 kilowatt hours and a cost of 20 million dollars; (4) Rio Queguay, with an expected generated energy of 47,000,000 million kilowatt hours per year and a cost of 4 million dollars; and (5) Arroyo Cunapiru, with a generated energy of 40 million kilowatt hours per year and a cost of 3 million dollars. (1)

(1) From data provided for the Director of Rio Negro dam, Ing. Victor Soudriers, August 1941.
For the maintenance of soil fertility and for the reduction of erosion on such lands subject to erosion, the following familiar practices may be adopted: rolling lands can be planted in permanent pastures and perennial hays; cropland can be terraced and plowing can be done along contour lines; sheet erosion can be checked through the planting of crops in strips; rotation practices can be adopted that will provide soil cover; the production of close growing crops can be increased and the production of intertilled crops decreased; the turning under of cover crops increasing the absorption of water will serve to lessen run-off; drainage outlets can be built into the soil to carry off heavy rainfall; gueley erosion can be checked mechanically and with vegetation planting.

1. Fertilizer.
2. Devotion of land for grazing.
3. Reforestation.(1)

An extensive program for protection of cities and towns by means of levees and protection walls along the main river and by dams, channel improvements, and flood walls on the branches should be constructed. Improved land practices should offer partial solution for retarda-

(1) Sources: U. S. Geological Survey.
Soil Conservation Service, Department of Agriculture.
U. S. Bureau of Chemistry and Soils.
Erosion: NRPB tomo II, 1934.
tion of run-off. Zoning of flood plains so as to prevent construction on such plains should be provided as one of the best plans for protection of private lands and should be recommended by the National Planning Board.

Proposals: Pollution abatement

This outstanding need is particularly evident in cities such as Fray Bentos and others on the Uruguay River where package meat plants or other industries are located and no sewage treatment is provided. A careful study of such conditions should be made, and the location of sewage treatment plants should be proposed in the different regions.

Reservations

We have zoned almost 4,400 square miles "reservations." These areas, as we can see in the actual land use map and in the pictures following it, are of very little use, and undoubtedly it is undesirable to have them in private ownership. They should be taken over by the State and improved by careful studies and research in soil erosion, flood control, reforestation, and suitability for agriculture or cattle raising.

After improvement, they should be devoted to the most suitable uses and returned to private ownership. We are locating one of the principal highways of the country
Proposed "National reservations."
through this area, and this area could be very closely related to the recreational areas of the Rio Negro Valley and the future forests of the Eden Valley and its recreational areas.

Proposals (Submarginal land and land without any use)

In addition to acquisition of lands by public agencies for retirement from unsuitable use, there is increasing need that such lands as are not acquired be zoned against improper use. Unfortunately, however, the use of the zoning technique for control of rural land use, so effective in Wisconsin, has not been used in Uruguay.

In order to bring about more sensible use of rural lands, other remedies need also to be developed, including:

1. More liberal policies of land acquisition, particularly in the case of tax delinquent lands.

2. Control of public services and capital expenditures, notably for roads and education, according to the economic life and potentialities of rural areas as revealed by land classification.

3. Creation of local and departmental planning legislation.

4. Protection of farmland and watershed from soil erosion by improved farm and woods management practices. (Soil erosion is severe in Uruguay.)
Problem areas. Rivera.
Future reservations.
Premature Land Subdivision

A particularly malignant type of land exploitation is evident in the subdivision of land in the suburban fringes surrounding metropolitan areas, such as Montevideo, Colonia or the main cities on the Uruguay River, far beyond any present or even future need. Such excess plotting not only leaves in its wake much tax delinquency, defaulted benefit assessments, and private financial liabilities, but even when such areas become built up, the heterogeneous design of scores of adjacent subdivisions results in no uniform road plan or provision for an economic system of utilities. In short this patchwork plan has little suitability for public use or for the public interest. Future growth and expansion are sorely hampered, and any future uniform development is well nigh impossible.

The extent of premature subdivision and the financial ills that follow in its wake have been clearly shown by the studies made about Montevideo metropolitan area. (1) Recommended remedies include:

1. Reclamation of existing substandard subdivisions either by replatting in accordance with an overall plan or by restoration to rural or other suitable uses.

2. Power upon subdivision should be provided to the municipalities. Prevention of surplus and uneconomical land subdivision through municipalities taking full

(1) School of Architecture, 1933.
advantage of platting control powers provided by such law, by refusing to finance subdivision development and requiring reasonable improvement of subdivisions by the owners before supplying public services to subdivided areas, and by augmenting legislation where necessary to accomplish the above.

3. Revision of tax laws, where necessary, to insure prompt tax sale and provide for "in rem" or other simplified and inexpensive foreclosure procedure.

4. Improve methods of municipal real estate management and sale, including the permanent public ownership of lands suitable for parks, playgrounds, schools, street extension and widenings, municipal housing project, and other public purposes.
POPULATION PROBLEMS

Resettlements
Centralization of Cities
Future Cities
General Recommendations
Resettlements - State Aid to Settlers

The principal means adopted by the Uruguayan Government to place agricultural production on a sounder foundation lies in measures for facilitating settlement and the acquisition of land by the workers. Out of 33,964 farms recorded in 1932-33, 15,543 were worked by their owners, 13,109 (38.6%) by tenant farmers, and 5,312 (15.64%) by share farmers. In other words, more than half the farms were worked by persons who merely rented the land.

The first official settlement measure was taken under an Act of 22 January, 1913, authorizing the issue of a loan of 500,000 pesos, the proceeds of which were to be devoted to the purchase of land for subdivision. The lots could be paid for in cash or by 30 annual installments, and in the latter case a mortgage was placed on them. The Executive was authorized to negotiate with the Mortgage Bank for the subsequent transfer of these mortgages to the Bank so that the funds involved in the settlement operations might be set free as soon as possible and used for breaking up further estates. Under this Act, which also provided for the right of expropriation for settlement purposes, the State purchased two estates comprising 5,726 hectares (22 square miles) which were broken up and allotted to 157 settlers' families.

By a second act, dated 20 June 1921, the Mortgage Bank was empowered to grant loans directly for settlement
transactions up to 85 per cent of the value of the holding. The Technical Settlement Committee which had been set up in the meantime was authorized to purchase estates suited for settlement in agreement with the Mortgage Bank. Thus the settlers had to possess a minimum capital of 15 per cent of the value of the holding together with the capital to meet their first working expenses. The Committee was, however, given a fund of 50,000 pesos with authority to use it for advancing to settlers the sums needed for first installation and working.

Persons who joined the settlements formed by private companies were also entitled to receive these loans up to 85 per cent of the value of the property. For those settled by the Committee in official centers there was a system of preference in the allocation of holding. Farmers who were of Uruguayan nationality and heads of families were given priority, followed by aliens who had worked for not less than six years in agriculture in the country, and in the last place by newly arrived immigrants. This Act also prescribed that the settler must live on and work his holding himself assisted by the members of his family and that he might employ paid workers only by way of exception.

This new act resulted in the creation of five settlements of a total area of 13,378 hectares (52.3 square miles) on which 262 families were settled.
Much the most important act, however, was that of 10 September 1923, which set up a permanent Settlement Service administratively connected with the Mortgage Bank but financially autonomous and endowed with a capital of 3 million pesos, increased to 5 million pesos in May, 1929. Since this act came into force, official settlement activities have been carried out solely through this body.

The Settlement Service may itself buy land for subdivision and settlement, or it may recommend that the Bank should grant a mortgage loan of 85 per cent to farmers who state that they wish to buy land they have chosen themselves outside the official settlement centers; such land may be either an isolated property or a holding proposed to the settler in a settlement organized by private initiative.

According to this act, the settler must thus possess 15 per cent of the value of the holding. Since, however, the Bank supplies the remaining 85 per cent, not in cash, but in the form of mortgage certificates which may perhaps not be realized on the money market without some loss, the Settlement Service is authorized to grant the settler a further loan representing any difference between the nominal value and the market value of the certificates; the settler must repay this loan within a period of not more than 30 years. The Settlement Service has power also
to make advances for the working of the holding on the security of the crop.

By an Act of 10 May 1929 even greater facilities were granted. In addition to the bank mortgage, limited in this case to 75 per cent, the settler may obtain at once from the Settlement Service itself a second mortgage of 25 per cent of the value of the holding. In other words he can acquire the holding entirely on credit. The losses, if any, incurred on the sale of the mortgage certificates may be included in the second mortgage.

The regulations that govern the transactions of the Settlement Service provide that applicants of Uruguayan nationality shall be given preference in the allocation of holdings, but that foreigners will also be admitted. Newly arrived immigrants who wish to benefit by the facilities granted by the Bank must produce a certificate, duly attested, that they are farmers or that they have engaged in an occupation in their own country qualifying them for work in agriculture. A qualifying period of employment in Uruguayan agriculture, as required by the act of 1921, is thus no longer insisted on.

It may be added that the holdings in the official settlements are exempt during ten years from all taxes on real estate and the credit transactions from all stamp duty, a privilege that may also be granted to private settlement companies having recourse to the services of the
Uruguayan towns.
Bank. Further, the holding, the harvest, the agricultural implements, and other effects of the settlers are not liable to judicial distraint.

Possibilities of Settlement

The area at present covered by all the settlements founded directly by the State or with State assistance by private companies is 78,210 hectares (293 square miles). If to these areas are added some 500 "individual" transactions, representing about 24,000 hectares, the total area is over 100,000 hectares, 394 square miles. (0.394 per cent of the total area of the country and one-eighth of the area at present under cultivation.) This area is at present occupied by 1,600 farmers and their families. (Nearly one-sixteenth of the total population engaged in agriculture.)

Moreover, production in the settlements, which is guided and encouraged by the technical experts of the Settlement Service, appears to be both very intensive and very varied.

The financial situation of the Settlement Service is quite satisfactory, in spite of the difficult situation in the last years. This Service itself grants certain loans, but as a general rule it is a link between the settlers and the Mortgage Bank, which grants most of the loans. As a general state we can consider that the situation of the
settlers was not very good; in fact in 1933 (August before the Conversion Act was passed that made it possible to consolidate arrears by combining them with the principal debt) the number of current rural loans (including settlement loans) was 4,616. Of this total 2,350 debtors or about half were in arrears. There is reason to believe that the proportion of debtors in arrears among the holders of settlement loans was also considerable.

It is not possible to answer the question whether in a country where the rise in land values—for the present degree of productivity—has come to a stop, a settlement scheme can still be financed solely by recourse to private capital, which demands a return more or less equal to what it could obtain if it were invested directly in the land; or whether the settlers' only chance of success lies in a non-repayable grant, which naturally can be provided only by the State. It is not yet possible to answer this question on the basis of experience, for in Uruguay this has been too short and relates to a period when, owing to the general optimism which also infected the official financial institutions, the selling price of holdings has nearly always exceeded their productive value, thus endangering the success of the settlement schemes in advance.

In Uruguay the settler cannot start without a fairly substantial working capital. If he can pay for the land, his livelihood as an independent farmer is assured, and
the capital he needs is much smaller than would be required in most European countries for buying an agricultural property sufficient to live on. His chances of success diminish with the amount of the debt that he has to contract in the absence of capital of his own. The margin of debt that he can assume without too seriously endangering his chances of success naturally varies in each particular case, and it is for the settler himself and the settlement institutions to assess it. In Uruguay it would be possible to organize on much the same principles the immigration of farmers with a small amount of capital, even if this is not sufficient to pay for the whole holding. The official Settlement Service and the Mortgage Bank of Uruguay are fully prepared to grant mortgage and any other loans that may prove necessary whenever a reliable institution submits a settlement scheme that offers a prospect of economic success.

A distinction must be made between the immigration of persons without means and that of persons owning some capital.

For the former, who are obviously much the more numerous, the problem is quite different according as the land to be settled has still to be cleared and developed, and is therefore cheap, or is land which has already reached its maximum value. There is hardly any land undeveloped in Uruguay.
In the case of immigrants who can contribute only their power to work, settlement schemes run by commercial bodies can no longer be taken into consideration except for land which has not yet risen much in value, where the price charged to the settlers can include a certain margin of profit without affecting their chances of success, and where they can pay for their holding in a few years only. There is no profit to private capital in settling persons without means on land the value of which has already risen to the maximum limit of productivity, as is the case in the central region of Argentina or in Uruguay, where any addition to the cost price would altogether prevent the settler's success, and he would have to be given several decades in which to repay his debt. Here settlement can succeed only if the immigration country or the emmigration country, or both, assume part of the cost.

Although settlement may still be a profitable business in regions where the value of land has not yet risen, this certainly does not mean that it is sufficient to rely on the desire for profit for the scheme to be a success. Obviously it will be all the easier for the settlers to succeed if the body organizing the settlement is satisfied with a small margin of profit. In addition, however, the modern outlook on the organization of migration movements imperiously demands that migrants should be protected against abuses, particularly serious cases of which have
often been observed in connection with settlement schemes. It follows that either the private settlement agencies must be prepared to give certain guarantees or else that the emigration country should itself take part in the constitution of such agencies.

For immigrants who have sufficient ready money to pay for their holding, or for the greater part of it, the problem is much simpler. Even in regions where the value of land has risen considerably, a capital well below that which would be needed in Europe is sufficient to believe that in European countries, where the average level of capital resources is relatively high, there are many people who might profit from this discrepancy in the amount of capital needed to establish themselves in Uruguay as compared with their own country. But here, too, reliable organizations should be set up to which applicants can apply. Unless it is desired to restrict still further this already limited category of prospective emigrants, the price demanded should be kept as low as is compatible with the financial equilibrium of the settlement agency. Such agencies might be set up by the immigration countries, which are particularly interested in receiving financially qualified immigrants or else by the emigration countries.

Thus, whichever group is considered—either the larger and more worthy of assistance, which is composed of immigrants and prospective settlers who have practically no
capital, or that which is of special interest to the countries of immigration, being composed of persons with a little capital—the only solution for the problems of immigration with a view to land settlement in Uruguay seems to lie in an organization in which the official institutions of both emigration and immigration countries would take part. To such an organization an international institution such as the International Labor Organization, which is at once disinterested and well informed, could render valuable assistance.\(^{(1)}\)

From this analysis we can assume that unless the prices of the agricultural products rises in the world market after the war, Uruguay does not seem capable of receiving a large number of immigrant settlers in the near future. However, if as it appears will happen, the demand for agricultural products is larger in the years to come, and if the State increases its actual policy towards new settlements, we do believe that Uruguay could be selected as one of the most desirable countries for new settlements.

The other reason which can confirm the last statement is the increase of the industries and manufacturing in Uruguay during the last ten years. Naturally, these activities demand new skilled labor and, consequently, a different pattern of distribution of its population. The State by lowering the taxes to these industries and by

\(^{(1)}\) International Labour Review, Jan-June 1937.
Fomento beach
Colonia Suiza
other means helps its development, and it can be accepted that new skilled labor will be needed even more.

Centralization of the Too Small Towns in Towns of No Less Than 15,000 Inhabitants

There are more than 50 towns of less than 5,000 inhabitants in Uruguay and more than 21 towns less than 15,000.

We consider that towns of such size are undesirable from a National standpoint because of their submarginal economy, and their weakness socially, financially, and physically.

In our proposals we try to centralize such towns into new ones of no less than 15,000 people.

Upward Limit of Size

There are definite social and planning advantages in keeping a town within a certain population and area limit where it can be done, and a population limit of about 50,000 has special validity. Experience in the requirements of the average family in Uruguay shows that something substantial is lost in residential amenity if the density of any large dwelling-house area exceeds about 45 persons per acre including roads, though small areas may exceed this density. A population of 50,000 at 25 persons per acre can thus be accommodated in an urban area of no less
than 2,000 acres, which corresponds to the area of a
circle of one mile radius. All the residents in such a
town are within possible reach, by walking or cycling,
of the workplaces, main shopping center, amusement center,
secondary and technical schools, churches, etc., and of
the surrounding countryside, while the minor centers
(shops, churches, halls, elementary schools, playing
facilities, etc.) are also within reach from any part of
the town. If a town exceeds about 50,000 population,
there not only arises a need of internal transport ser-
vices for routine travel, but as a result some of the
principal centers of the town would have to be duplicated,
and the unity of the town is sufficiently depreciated to
raise the question as to whether the creation of a sepa-
rate unit would not have a balance of advantages.

New Towns or Extension of Small Towns

We advocate both the extension of small towns and
villages capable of industrial development, and the crea-
tion of new towns. The latter policy is the one which has
been exemplified in England (Letchworth and Welwyn) where
there were only extremely small villages on parts of the
estates, and the centers created were entirely new ones.
The practical advantages of this method are very great.

Of course, there would be considerable practical dif-
ficulties, in the absence of new legislation, in applying
the same degree of planning to the extension of existing settlements; and full economic control would be even more difficult. But if the whole of the properties in an existing small town or village could be acquired by a publicly promoted body, or one working on a limited profit basis, similar principles of development might be applied. It would be desirable that all properties in the existing town should be taken into hand as opportunity offers and leased afresh with covenants similar to those in the garden-city leases. Thus, on redevelopment as properties reached their allotted term, any necessary revision of the old plan could be applied with full effect, while increments of value due to new developments would, at least partially, come to the scheme as a whole. If no more than the area for further development were acquired for the extension of an existing town, that development would not reach maximum effectiveness unless it were coupled with very firm statutory planning control of the old center. There would be great possibilities, and great interest, in the planning of the extension of an existing town or village to meet modern industrial requirements while respecting historic and architectural character. But there would be many obstacles which do not exist in the case of an entirely new settlement.

In the case of the addition of small scale industries to villages which are expected and intended to remain
essentially rural and predominantly related to agriculture and its ancillary pursuits, the capital expenditure on local development may not be large enough to make important the recovery for the developing agency of consequential increases of value. If such developments by private initiative or otherwise are to be encouraged by the State, it is most important for the protection of agricultural interests that statutory planning control shall be strengthened. In particular, the power of the planning administration to concentrate such extensions and the housing related thereto in defined areas, and to preserve from building development large areas of farm land which might otherwise acquire building value, must be made fully effective. Such proper claims for compensation as may arise as a result of that policy ought not to fall on the local authority. Given adequate safeguards, industrial developments of this type would be beneficial to the rural community and would provide a small proportion of industrial workers with conditions which selected types of workers would find very acceptable, though no such large proportion of mobile industry, or of urban workers, could be acceptably provided for by this kind of development as could be cared for in towns of 15,000 to 30,000.

Check to Undesirable Rural Development

Rural lands of high farming potentiality, "national
park" areas and coastal strips, and districts of special landscape beauty should also be scheduled as restricted areas. In such cases, as in the case of urban restricted areas, the prohibition would not be automatic. But any proposed new establishment would have to be argued before the regional siting board.

Positive Encouragement; Unemployment Areas

There should be scheduled "favored areas" where, owing to the existence of an underemployment settled population, either well housed or capable of being well housed over a reasonable period in satisfactory social conditions, new business establishments are desired as a matter of national policy. In such areas the Planning Body should have powers such as these: to promote trading estates or authorize the local authority to do so, to provide, sell, and lease factories and commercial buildings and sites, to advertize and make known industrial advantages, to pay the removal expenses of firms and their employees, and to arrange with local authorities, housing corporations, and social service agencies for all desirable accompanying developments and redevelopments.

Extension of Small Towns and Villages

Similar methods of encouragement should be available for promoting the settlement of industry in small towns and
villages to be specifically scheduled in planning schemes for extension.

**New Towns**

In the case of new towns there might be no existing local authority to promote or take the initiative in development. In such cases there is a need for a new machinery of quasi-public corporations and of new powers for the larger authorities (municipal corporations and county councils) who could be responsible for development. Local authorities and profit-limited corporations should be enabled to acquire sites for garden cities; the Central Planning Board should have new powers such as: to promote and finance public corporations for building new towns, and also to make advances on favorable terms to profit-limited bodies privately initiated. The new towns should be scheduled as favored areas for industrial and business settlement and the same encouragement given to establishments set up in them.

**Choice of Areas and Sites**

The choice of areas of restriction and encouragement of small towns and villages suitable for industrial extension, and of sites for entirely new settlements is a matter in which both the Central Planning Board and the regional and local planning administration should take part.
The initiative in defining favored areas will normally come from town and village authorities desiring or welcoming expansion and will be sifted by the Regional Offices before final decision by the Central Planning Board. The initiative for the creation of new towns will normally come from (a) municipal corporations expecting a "spill over" of industry and population as a consequence of a policy of reducing spreadation; (b) county councils able to suggest suitable sites, whether or not they wish to take part in actual promotion and finance; (c) Regional Offices taking a wide view of the future development of their regions; (d) industrialists who would like to establish business with first-class technical and social facilities; and (e) private enterprise corporations willing to establish new towns with the aid of State loans and inducements. Planning in the sense of dictating a tidy pattern of future distribution of industry and population is not only undesirable, but entirely impracticable, so long as a substantial element of private initiative in industry remains. In the sense of giving guidance, giving the benefit of the expert knowledge available, imposing rules and restrictions which avoid congestion or over-concentration, securing greater local diversification of industry, protecting the best farmlands, and promoting specific developments generally felt to be desirable in the national interests, planning is not only eminently
practicable, but imperatively and urgently necessary.

Summary of Recommendations

The main views and recommendations put forward relating to the terms of reference of the Committee may be summarized as follows:

1. Agricultural and industrial productivity should be a main objective of town and rural planning.

2. More than 400,000 people live in too small towns and too isolated from the great centers of the Nation. A general policy of consolidation of these towns into main important ones where industrial activities can be developed is advisable. In fact the social needs of most workers accustomed to urban life can be met in towns of 15,000 to 40,000 inhabitants, but are not so well met as a rule in towns of under 15,000. A rise in educational and cultural standards, however, and the provision of the right facilities tend to make the smaller places more acceptable.

3. Villages and small towns have special social attractions for many people, including some now in larger towns, and industries of selected character might be induced to settle in these smaller rural communities. The number of industries which they would suit, however, should not be under-estimated.

4. Existing small towns and new towns should not be planned for extension beyond about 40,000.
5. The industrial extension of small towns and the creation of new towns would bring many benefits to the surrounding agricultural countryside which in turn would benefit the inhabitants of the towns.

6. There are great planning advantages if the whole site of a new town is owned by the developing body. There are considerably greater practical difficulties, but interesting possibilities, in the planned extension of existing small towns.

7. The control of the siting of new and migrating industrial and business establishments is the key to the "planned" distribution of the population including the safeguarding of agriculture. Good farmlands should be scheduled as "restricted areas" and new establishments only admitted to them when no other situations are suitable. Selected small towns, villages, areas of unemployment, and new towns should be scheduled as "favored areas" and industries and businesses encouraged to choose them as sites.

8. The remaining farmland around the greater cities should be reserved as far as possible from building development.

9. In view of the slow increase of the population, it is not likely that more than 250,000 acres of rural land would be required for the policy of centralization recommended.
10. No recommendations are made as to the economic and organizational problems of agriculture. But it is recommended that the Central Planning Board should, after consultation with the Ministry of Agriculture, decide which areas of land should be specifically allocated to agriculture as against all other uses.

11. Government uses of land should come under planning control.

12. Observations are made on the proposals for the State acquisition of development rights and the Public acquisition of agricultural land. In the absence of one of these, a national compensation-pool is essential to protect large areas of farmland from development and to secure the general aims of planning.

Urban Planning

We divide the planning program of urban areas in Uruguay into three main subdivisions of work: (1) one of strict city planning for the most important and longest city of the region, Montevideo (750,000 inhabitants); (2) the three main cities of 50,000 people; and (3) towns of less than 50,000 people, which constitutes the average size of towns in the rural areas. We term the third categorial group town planning.

The term Urban Planning is concerned with the first two classes of cities, and the term Town Planning is
Montevideo.
Custom House and part of the harbor.
applied to the planning of scattered towns over the country.

The term Rural Planning is related with the problems of land use in the different comprehensive areas rather than with the settlements singularly.

City planning is a method of operation designed to produce an orderly and efficient growth. While the obvious view is that it has to do with physical things and their development in an economic and orderly sequence, yet its whole effect goes much deeper. A good city plan, properly administered, has a large effect upon mental and moral development.

A municipal body "Master plan division" has been set up in Montevideo in 1939. It has to do with all the elements of the city. This division is responsible to the Mayor, and it has control over subdivision, improvements in the city, building code and permission for building purposes, and it is the advisor of the other state divisions.

There is no planning commission in Montevideo. This "Master plan division" of the municipality is the one which develops the duties of a planning commission.

All the development under the limits of the city must be approved by such a division.

The rest of the country lacks commissions or other boards which can develop either a city or make any comprehensive plan for the development of the country.
There are no regional commissions in any of the departments.

In Uruguay all the improvements, harbors, highways, new developments, location of new industries, resettlements, etc. have been carried out by the government with money voted by the Congress through special boards called "Entes Autonomos" which practically are planning boards.

The police power and the right of eminent domain have been recognized as rights of the State in doing works for the welfare of the people.

In fact it is the duty of every municipality to provide for the health, welfare and happiness of its people; to conserve, protect and improve property values and to this end supply a means whereby future growth and expansion will be accomplished in an orderly, economic and efficient manner. The prosperity of the individual is inseparably bound to the prosperity of the community, and a city which makes no provision for the welfare of its citizenry fails in one of its most important functions. To be wholly successful such activities must be carefully fostered, encouraged and guided by the State.

Urban planning is based upon a careful and complete study of the growth and development of the community, its relation to the locality in which it is situated and the relations between its parts. From the data gathered, it forecasts future needs and directs and regulates further development. Included in the program are:
1. The regulation of land use and population density through zoning.

2. The protection of health and property.

3. The development of an adequate system of streets, transit, and transportation.

4. A forward looking program for recreational and educational needs.

5. The development of civic art.

6. A budget carefully planned to fit the program.

Town Planning

This uncommon denomination is being adopted in our study because of the special characteristics of the Uruguayan towns with no more than 15,000 people.

A careful study of zoning and subdivision should be emphasized in such towns. The prevention of growing cities along the highways or roads should be the aim of such policies. A belt of agricultural land, if possible, should be obtained for the life of such communities, and even the inducement to farm work on the big lots of the new subdivisions should be emphasized. In fact as we studied in our analysis, it is not to expect a great change in the Uruguayan population; consequently, we propose the change of the actual character of our towns by providing the rural character where they belong.

Actually these towns have been created by chance
without regard of any comprehensive plan for the future, and by copying what the other main cities had done.

The narrow lots of these towns avoid any occupation by the ownership in farm activities in his own yard such as he could have done otherwise. More than 50 per cent of the towns of less than 20,000 people buy the necessary vegetables in other areas, even in other countries.

The transition from the wide, open, enormous countryside of the Uruguayan land to these towns is enormous; from a pleasant rolling land with fairly good transportation system, the visitor is struck by the "civic" aspect of a town of 20,000, without open spaces, with lots 30 feet wide!!! To find a transitional plan between the country life and the town life is necessary by means of planning and zoning.

A careful study of the area within the town should be one of the first studies of all these towns.

Prevent or firmly check their further spread, while their internal density should be gradually reduced to acceptable standards and adequate open spaces introduced as rapidly as industrial and other circumstances permit.

**Rural Planning**

Departmental zoning and planning are particularly studied under this heading.

Uruguayan status should give every department the
right to organize a planning commission. It should be the
duty of such a commission to make a thorough study of the
department with reference to reserving and acquiring land
for public uses—particularly for parks, playgrounds, forest
reservations, parkways, boulevards, camps and for a county
park system and a system of county streets and parkways.
These may include contiguous areas of any shape to be used
for the same purpose. The planning commission must con-
sider the health, comfort, enjoyment, and general welfare
of the people. It shall also consider the protection of
streams, lakes, and pools from pollution, reforestation,
conservation of flooded areas and the preservation of
places of natural beauty or historic interest.

The powers of the planning commission should be suffi-
cient to supervise and develop the department along the
above lines and it may also acquire land through gift,
lease and condemnation.

This board should be enabled by the state to adopt
ordinances for regulation, restriction and the determina-
tion of areas within which agriculture, forestry, and re-
creation may be conducted. This authority is the power
to zone the county.

The value of this control of land use can well be
seen in the proposed master plan, land use section;
marginal agricultural lands can be put to other and more
appropriate uses and rural planning is the logical instru-
ment for the accomplishment of this work.

Department zoning and planning affects directly agriculture, conservation, education, health, population, public works, recreation, and water resources. When considered in the light of these connections it is plain that the proper use of this authority is of the greatest importance to rural planning.

The major objects of department zoning in the 19 departments should be: (1) the promotion of agriculture, (2) the promotion of forestry, (3) the removal from agricultural use of isolated and non-productive farmlands, (4) the reduction in costs of local government, particularly schools, and of state government, particularly highways. Department zoning is a most important factor in the plans for rural rehabilitation.
TRANSPORTATION PROBLEMS

Highways - Proposals
Railroads
Navigation
Airways
Summary
Highways and Parkways

The percentage of highways in this area is the highest among all the South American countries. There are about 1500 miles of good roads.

Uruguay has 64,766 cars (46 persons per car). It occupies the eighth place among the South American countries.

The layout of highways, however, is typical of the growth of the nation. It has expanded radially from the capital to the hinterland. There are very few direct connections between the eastern and the western towns; practically these connections are established at Montevideo, and by this route the distance is further than if direct routes were available, sometimes 200 miles.

We propose the construction of new highways as indicated in our master plan. This new highway will connect transversally the principal towns on the eastern part with the towns on the Uruguay River and also the local terminals of railroad lines with the agricultural regions or with regions potentially important as industrial centers.

The total length of these proposed highways is (See master plan.)

Transportation: Highways

All major highways need protection against the uncon-
trolled development and use of abutting frontage, such as is to be achieved through zoning, the establishment of setback building lines, and the regulation of land subdivision activities.

In highway as in recreational planning much more consideration should be given in certain instances to the highway as a "recreational way," involving sufficient right-of-way for bicycle paths, riding trails, hiking trails, and water recreation where highways parallel rivers or canals. Many individually small but sumulatively great recreational opportunities are lost in this connection because of the lack of integration between highway and recreational plans.

**Parkways**

The problem of parkways is quite different in Uruguay from the same problem in the United States.

In fact the reason for the existance of extensive parkways in Uruguay is not very well justified. Uruguay, together with the other areas of Region 6 has no more than 200,000 cars for a population of less than 3,500,000.

The lack of bridges between Uruguay and the surrounding areas make the situation very complex.

Parkways will be justified only in short length and in the recreational areas primarily (in the east of the country, and in the Rio Negro Valley).
However, a parkway could be provided from the eastern part of Uruguay towards Brazil, but it is not the main need of transportation in Uruguay.

The land use of this country (82 per cent devoted to cattle raising) emphasizes even more such statement.

Of course, all the highways located along rivers or lagoons should be studied as parkways, but only in short distances and connecting the main spots of interest.

Railroads

Railroad lines cover practically all the area of Uruguay. It extends 1527 miles. Its layout, however, extends, as in the case of highways, radially from Montevideo, isolating some areas from the movement of the Nation.

There is no direct connections among several ports (Fray Bentos) and the capital or the center of the country.

The eastern part of the country has no direct connections with the west. In fact the point of change going from east to west lays 200 miles from these northern towns, in Montevideo, as we have seen in the study of highways.

There is a continuous overlapping between railroad lines and highways. This overlapping provokes, naturally, an inconvenient competence between trucks and railroad rather than complementary action of transportation into the different areas.
Navigation in the Uruguay river.
Uruguayan rivers
In order to plan some new lines, we must remember that the topography of Uruguay being practically flat, facilitates the location of such lines any place convenient for our general analysis.

We propose some new lines of railroads, such as the one connecting Colonia with Durazno and the other connecting Artigas with Melo. Total railroads proposed miles. Elimination of lines miles. (See Master Plan.)

**Navigation**

Although the possibilities of the principal rivers on this region, navigation is very uncommon in this region.

Practically the only river which is being utilized as a transportation system is the Uruguay River, but none of the other possibilities for navigation have been developed.

A careful study of this problem should be studied and, correlatively with the study of the transportation system, specific proposals should be made. In fact the transportation by water could be a complement of the railroad transportation or highway transportation if a sound policy can be provided. The Negro River, which divides the zone into two large areas, could be utilized primarily as such a navigation system, and by doing so revitalize a wide ribbon parallel to the river between cities such as Durazno and Santa Isabel.
Water versus Highway Transportation

Wherever in the Region minor channel improvements are proposed, they should be carefully scrutinized for their effect upon present and prospective land transportation convenience and costs, since increasingly dense development in many parts of the Region brings out the old conflict between the water borne and highway transportation. Many waterways of little and decreasing use, usually small tributary streams, should have the right-of-way over much more important and voluminous highway traffic. To the already disproportionately great costs of channel improvement and maintenance in many such cases must be added the extra costs of bridge construction that will not obstruct water traffic.

Airways

Air transportation has been developed during the last ten years in Uruguay. More than eight airports are located in this region as we can appreciate in map number .

The National airport in Montevideo has been under construction for the last three years; this National airport has been studied relately with the airbase in the eastern part of this region, actually almost finished. This air base represents an important stage in our present life, and it probably will represent a very important place in our future development. In fact after the war, this base
could be readjusted to the needs of the region itself, and it could be coordinated with the general pattern of the eastern part of Uruguay. (See Master Plan.)

Transportation Summary

1. Transport serves as the circulatory system of the commercial, industrial and geographical body of the nation.

2. Knowledge of past and present trends in agricultural, industrial, commerce and stock raising progress is prerequisite to a broad conception of present and future transport problems and their possible practical solution.

3. Every department is charged with the responsibility of attempting logical forecast of regional population expectancy and regional industrial growth, these forecasts serving as a foundation for (1) planning a ten year highway program, (2) planning a railroad grade separation progress, (3) planning for expansion of passenger and freight terminal facilities involving rail, water, highway and air transport.

4. The conclusion is inevitable that (1) truck transport is fulfilling an economic service in response to an existing need, (2) truck transport is an enterprise which will continue to grow, and (3) truck transport must be planned for as an integral part of the transport system of Uruguay.
City of Montevideo.
Some industrial plants.
Industrial Developments

The artificial stimulus of a protective tariff has bolstered up many small firms run on uneconomical lines. Rationalization has not yet spread to Uruguay, and these small firms with their high overhead charges increase the costs of production and are the object of constant solicitous legislation.

The four Uruguayan frigoríficos have an estimated capacity of 4,000 cattle and 7,000 sheep carcasses per day. In addition there are numerous saladeros producing charque, or jerked beef for country consumption and for export to Cuba.

The more important firms manufacture cloth and leather goods, building materials, and wines and non-alcoholic drinks. The cloth factories are improving the quality of their output every year, but it will be many years before the weavers can hope to equal British materials. Boots and shoes made locally are of first quality, and the building material industry turns out first class products. Uruguayan marble is used extensively, both in this country and in Argentina; and a first class Portland cement is manufactured although the supply is still insufficient to meet the demand.

Other important articles produced are cotton, woven and knitted goods, jute bags, cordage, flour and biscuits, glass and bottles, cigars and cigarettes, disinfectants,
wine, beer and spirits. A company formed to manufacture motor car tires and rubber articles now practically monopolizes the market.

A government organization, the Institute de Quimica Industrial, has a monopoly for the manufacture of chemicals in Uruguay. Among its products are alcohol, sulphate, chloride and carbonate of soda, chloroform, collodions, sulphuric ether and acid, superphosphate, commercial sulphate of iron, benzol, toluol, and naphthalene, nitric acid, hydrochloric acid, caustic soda and ammonia. Large quantities of soap are manufactured in 12 factories in Montevideo and 30 in the interior.

**Location of New Industries**

The principal factors to be analyzed when locating industries should be:

1. **Land**

Does the proposed site provide sufficient and suitable land for buildings and for protective purposes?

2. **Labor**

Is labor available in the new location of the industry?

3. **Power**

Sources of power. Availability. Costs.

4. **Water**

Sources of water, etc.
5. Fuel Item

What is the cost of transporting the fuel to this location as compared to alternative sites?

6. Raw materials

Source of raw materials and destination of products.

7. Transportation

8. Housing

9. Community facilities

10. Strategic considerations (Military conditions)

11. Alternative locations for the proposed expansions

12. Alternative facilities

13. Post-war readjustments

In accordance with the Charts we have proposed the new location for industrial centers in our Master Plan.

A taxation system should be studied with an objective to eliminating inadequate and proposing new legislation to bring the taxation structure into conformance with the Master Plan.

The evidenced lack of mineral resources characterizes Uruguay as a dependent nation; therefore, we propose in our Master Plan locations for only that type of manufacturing that can be classified as light and secondary industries.

The main industrial centers should be provided of all the facilities for the most important industry at the present time: frigorificos, canning factories, and...
package meat plants.

Proposals: National Land Acquisition Program for Industrial Sites

We propose that the National Land acquisition program for acquiring sites for industry be handled for purposes of protection and the welfare of the people against nuisance industries and for giving the National Government leadership in bringing to the country beneficial industries.

The land should be sold to the beneficial industries at very low cost as a gesture of their desirability in the country.

Joint national-state-local participation in planning program and purchasing of sites.

The National Government shall allocate 75 per cent, the state 25 per cent of the cost of purchasing. The cost of planning should be joint things among the National, state and municipalities to be provided by law. (See appendix.)
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<td>3. National land acquisition program for industrial sites.</td>
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<td>1. Propose enabling acts for local planning agencies.</td>
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<td>2. Propose national legislation for creation of National Planning Board specifying need of:</td>
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<td>(a) Land classification</td>
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<td>(b) Flood control and soil erosion</td>
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<td>(c) Public works (highways).</td>
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A regional plan has to be elastic; it has to consist of a broad outline of proposals for guidance of public authorities and utility corporations. It must, therefore, be limited in its proposals to opportunities and possibilities for development rather than extended to detailed proposals.
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How Planning Can Be Fitted Into the Uruguayan Government

Term paper submitted for the course of Planning Legislation.

Professor: Flavel Shurtleff
Student: Eduardo Baranano

Massachusetts Institute of Technology
City Planning Department
January 15, 1943

Comments by Professor Flavel Shurtleff:

Intelligent use of United States National Resources Board precedent to suit Uruguayan government structure and politics.

Scheme of correlation seems workable.

Making technical director of Planning Board a member of the Board open to criticism.

Classification: H
How Planning Can Be Fitted into the Uruguayan Government.

Creation of a National Planning Board.

General Analysis

Planning in Uruguay is not unknown. The State has been very aware of the problems of national importance, and it has accomplished quite a number of advanced reforms in the administration of the governmental agencies which have to do with public services and also with improvements thereof.

Uruguay has the principal public services under the ownership of the State. Public health (all the hospitals over the country are owned by the State and their service is offered free to the people); the government owns plants of alcohol, cement, oil refineries, packing plants, docks, chemical works, banks, insurance, hotels, resorts, two-thirds of the total length of the railroads. The State owns all the establishments of public instruction, elementary schools, colleges and graduate colleges.

The importance of the growth of several national bodies (decentralized authorities) and the great quantities of state employees has been underestimated by our "planners". If the government had realized the importance of planning and the advantages of correlation among its different branches, such a proposal as the creation of a National Planning Board would have been possible long ago.
The three main problems of planning in Uruguay are the use of land, the distribution of population and the planning of public works in a direct connection with the problems of the Nation as a whole.

The first two problems are closely related, but can be analyzed separately, although the solution of each one will directly affect the other. In fact, the present use of land is one of the reasons for the special pattern of distribution of the population, and both are closely related to the transportation system.

Because of the centralized type of government that the constitution of Uruguay holds, this type of a National Planning Board with an executive arm is very possible, and in my opinion is the main need of the Uruguay Republic.

The main problem of Uruguayan development is the lack of correlations among its different departments; and among the different elements, land, people, transportation, recreation, industrial development and services, due to the lack of foresight and international vision of some of our departments. In one word: the lack of PLANNING.

I do not think that success in planning would be obtained by means of an isolated "academic" board, such as the National Planning Board, for a factor in its success is the awakening of the public to the necessity of planning and the ACCOMPLISHMENT of such policies. The direct
way would be, I think, the creation of a National Planning Board in a very close relationship with our actual governmental setup, not just another isolated official body but an instrument for the creation and the struggle for the adoption of real national policies for a better development of the Nation.

I believe in this possibility. I believe in the final success of planning in our trend of development.

I believe in the success of superior national leaders with broad views about our Nation over those leaders who lack vision and planning ideals.

As I have said before, Uruguay is one of the most advanced countries in South America for its governmental setup and its social structure. Uruguay has had many political leaders with foresight who did planning without special training for it. And I do hope that Uruguay will have even more leaders like that in the future. Planning and politics have been together in the past when the meaning of planning was unknown. Planning and politics must collaborate in Uruguay as the two best tools for the progress of the Nation.

This paper has been written to develop this idea.
Creation of a New Department in the Uruguayan Cabinet.
The National Planning Board under the Ministry of National Development

Appointment and Executive Committee

The Executive Power (President of the Republic) shall appoint the members of the National Planning Board with the approval of the Senate.

The President shall elect its chairman among its members, who will be the Minister of National Development.

The Minister of National Development shall be a person with a specialized training in planning and National problems.

The members to be appointed should be:

1. at least, representative of the principal industries of the country: cattle raising and agriculture.
2. for the manufacturing and other industries.
3. specialist of economic or social sciences, and no more than
4. architects, lawyers, or physicians (total number: 2).
5. city and regional planner. (He will be the director).

The Board could be formed by no more than 8 members. Members of such board should be selected for breadth of view and for knowledge of national conditions and requirements; they should serve for terms of six years so arranged that not more than two members shall go out of office in
Actual set-up of the Executive Power.
Proposed set-up for the Executive Power.

**President**

**Master Plan and Recommendations**

**Executive Committee**
- Ministry of Public Works, Chairman
- Ministry of Interior of Foreign Affairs
- Finance
- Public Instruction
- Industry and labor
- Public Health
- Cattle and agric.

**National Planning Board**
- Ministry of National Development, Chairman
- Planner, Director
  - 1 representative of the main industries.
  - 1 representative of the secondary industries.
  - 2 specialist in Economics or Social Sciences.
  - 2 (Architects, lawyers or physicians).

Total number: 8

(Gives the approval to the recommendations of the National Planning Board.)

Total number: 8
any one year. They should devote approximately full time to the work of the board; and they will receive reasonable compensation.

This Board will work in close relationship with an Executive Committee formed with the Ministers of the Cabinet or their representatives appointed by them. This Executive Committee will be under the Ministry of Public Works as Chairman. The Cabinet in the Uruguayan Government is as follows:

- Public Works
- Interior
- Foreign Affairs
- Finance
- Public Instruction
- Industry and Labour
- Public Health
- Cattle and Agriculture

All the final decisions of the National Planning Board should be approved by this Executive Committee.

The Executive Committee will have regular meetings with the National Planning Board in which all the problems of the different departments of the Cabinet could be presented, interrelated and all the suggestions of these departments analyzed by the National Planning Board and the Executive Committee for a better solution.
The President may ask the National Planning Board and the Executive Committee for special meetings when he considers it necessary.
Organization

As I said before, the Board will be organized as follows:

1. Chairman. (Ministry of National Development.)
2. Director. (Planner.)
3. Representative of the principal industries of the country: cattle raising and agriculture.
4. Representative for the manufacturing and other industries.
5. Specialist of economic or social sciences.
6. Architects, lawyers or physicians.

A technical committee will be set up with 7 sections:
1. Land section. This section will prepare complete studies about "Classification," Soil Erosion, Recreation and land use adjustment (submarginal lands, etc.).
2. Water section: navigation, irrigation, flood control, etc.
3. Industrial section to study plant capacity, opportunities for employment, location of industries.
5. Transportation section: highways, railroads, airlines.

Each of these sections has a chairman, a director, and a planning committee. Each of these sections shall submit reports to the President by the end of the year on plans of their respective problems.

The administration and technical staff operate under the Director.
Part of the Board's work should be carried on through technical and advisory committees composed of specialists drawn from the Central Government, from State agencies, and from civil life. These Committees should study and prepare recommendations concerning specific problems. Among the committees are those functioning in the fields of land, water, energy, transportation, relief, science, and industry.

The Board should conduct its activities outside Montevideo through the regional chairman and counselor of the seven regional offices under the Director.

Consultants should be assigned to assist State, Regional, and the numerous local and private planning agencies.

These seven regional offices will centralize the work of the nineteen municipal units in which the country is divided at the present time. (See charts.)
Functions (1)

The National Planning Board shall be the planning arm of the Executive Office of the President. Its function is 1. To prepare and make available to the President and the Congress plans, programs, and information that may be helpful to the wise use and fullest development of national resources.

2. To prepare long range terms, plans (Master Plans) for Uruguay development. This work will be studied in collaboration with the Executive Committee. The Executive Committee will formulate its general policies from such analysis.

3. To advise the President and the Executive Committee from time to time of the trend of employment and of periods of business depression and unemployment in Uruguay; and to recommend measures leading to the improvements and stabilization of economic conditions.

4. To collect information concerning advance construction plans and estimates by all Governmental agencies, the Departments, municipalities, and other public and private agencies, and to list for the President and the Congress all proposed public works in the order of their relative importance with respect to

   (a) the greatest good to the greatest number of people,

(1) Source: National Planning Board and Uthward report.
(b) the emergency necessities of the Nation, and
(c) the social, economic, and cultural advancement of the people of Uruguay.

5. To receive and record all proposed National Projects involving the acquisition of land (including transfer of land jurisdiction) and land-research projects and, in an advisory capacity, to provide the agencies concerned with such information or data as may be pertinent to the projects.

6. To consult and cooperate with agencies of the National Government, with the Departments and municipalities or agencies thereof, and with any public or private planning or research agencies or institutions in carrying out any of its duties and functions, and to act as a clearing house and means of coordination for planning activities, linking together various levels and fields of planning.

7. All executive agencies shall notify the National Planning Board of such projects as they develop before major field activities are undertaken.

8. The National Planning Board and the Executive Committee although they will work correlatedly will have different functions.

The Executive Committee will be charged with the immediate problems of national development with special emphasis in physical planning (Public Works). It should
study periodically the reports and recommendations made by
the National Planning Board which will prepare the long
range planning policies.

The Executive Committee will be, then, the body which
will carry out the different proposals made by the National
Planning Board in its study of National development and in
its recommendations of the Master Plan for the Nation.

It is important to recognize that the function of the
Commission is a continuous one, thus making it possible to
benefit from the accumulation of knowledge and experience;
its task is continuous national planning and not the formu-
lation of a single fixed plan, for it is essential that
planning should be flexible and capable of modification to
meet changing needs.

It is anticipated that the Commission will maintain
regular and close contact with all departments of State
and statutory bodies concerned with the use of land
through the Executive Committee.

Much of the work of the Commission will thus be
advisory; it will advise the President on matters affect-
ing the formulation of National Planning policy, and it
will advise Government departments, statutory undertakings,
local authorities, and, where necessary, individuals, con-
cerned with the use of land and its development. There
should be a statutory obligation of all departmental
ministries to afford all requisite information to the Commission, and to consult with it, and to consider its advice.

In carrying on its activities the Board should consult and cooperate with the agencies of the National Government, with States and municipalities, and with public or private planning or research agencies, and act as a clearing house and means of coordination for planning activities.

Appropriate powers of fact-finding and facilities for plan analysis would be granted to the Board.
Five-Year Plan for Uruguay

Throughout this report we have stressed the importance of realizing that planning is a continuous and evolutionary process in national development. We have emphasized especially the need for long-term policies, for example, in cattle raising areas and in agriculture to secure the necessary conditions of stability for satisfactory development. In the realm of forestry, planning involves looking ahead for at least a century, in constructional development possibly for even longer periods. In thus calling attention to the long-term character of planning, there is danger that matters of real urgency demanding immediate attention may be deferred for future consideration.

We recommend completion within the five years of:

1. The realization of a total or partial study of land classification, land possibilities, areas subject to erosion, flooded areas, problem areas (areas with little use), and general problems of land use in Uruguay.

2. Town and country planning schemes to cover the whole country so that there will be thereby a full indication of the areas in which industrial zones exist or are to be established and satellite towns or new settlements to be located.

3. A definite number of houses for rural workers, the number to be decided by taking stock of the position
at the time.

4. A full survey of all villages and hamlets to determine the existing facilities for village social centers (including playing fields) and the drawing up of a plan for the provision, where suitable, of centers of the village college type and the opening in all counties of a long-term building program accordingly.

5. The study and concrete proposals (location, size, character) for the new towns which will centralize the actual towns of less than 5,000 inhabitants. These new towns will be reasonably located, and its population will be no less than 15,000 inhabitants.

6. Programs for electricity, water and gas, to be based on the survey to be made in the first year.

7. The National Park scheme with hostels, etc. in chronological order.

8. Rules, if any, for the control of access to the countryside, the use of commons and of highways and other rights of way.

9. The realization of a general transportation system which will comprehend highway-railroads, river navigation, and airlines.

10. Proposed zoning ordinance for the actual towns and the new centralized towns. Special study of rural zoning all over the country.

11. General analysis of the industrial development of
Uruguay and recommendation about this problem, state aid, taxation, power, location, etc.

12. Special study of the Rio Negro area with concrete recommendations about recreation, areas to be owned by the State, location of new cities and abandonment of old towns, navigation and highway system in that area.
Control of Land and Ownership of Land

Throughout this report our emphasis has been on the importance of an adequate control over the development of land.

We are aware that one method of obtaining control is by the purchase of the land; but we consider it important to emphasize that the changes we recommend are not contingent on the ownership of the land by the State or by public authorities; they are contingent upon adequate powers of control and regulation. A change from private to public ownership would still leave the necessity for the planning and development which we have recommended. Because State acquisition of land is only a step along one particular road towards the achievement of the objects we have in mind, we have not considered it within our terms of reference to express any opinion on its desirability or otherwise. We are of opinion that the reforms could be obtained by adequate control of land.

We recommend that the power of compulsory acquisition of agricultural land by the State be exercised where required in the interests of National Planning or for achieving that high degree of permanent efficiency in our agriculture which will affect so vitally the very essence of the problem. That problem is to advise on the principles to be applied by the deciding authority upon the issue arising in regard to any particular piece of
agricultural land as to whether it is or is not, on balance, in the national interest that it should be given up to constructional development; and the view of the authority must be directly affected by the degree of efficiency attributable to the agricultural industry as a whole.

Much progress has been achieved by the Minister of Agriculture if he is armed with the right powers; and we are convinced that the power of compulsory acquisition is one and the agriculture evidence we have received supports us strongly.

The essential point that should be made is that the use of land must be so controlled as to prevent, as far as possible, the alienation of good quality land from agriculture. It is regarded as the task of the National Planning Board so to plan the whole country that the optimum use is found for every type of land.
Bibliography

7. American Regionalism, Odum and Moore.
10. Regional Development Plans, National Resources Planning Board, January 1941.
TABLES;
### Table 1

#### AREAS SOWN and PRODUCTION

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**Totals**

8,630 | 5,033 | 42,150 | 28,025

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**Totals**

220 | 17,170 | 63,074 | 8,956 | 6,683

(1): Provisional Figures
(2): Pastoral Land

Estadística Agrícola, Diciembre 16 de 1942.
TABLE 2.

STATE OF CORRIENTES

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Totals                  | 3,280,088 | 2,393,341 | 47,785 |
## TABLE 3.

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</thead>
<tbody>
<tr>
<td>1908</td>
<td>15.3</td>
<td>12.9</td>
</tr>
<tr>
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<td>17.1</td>
<td>12.6</td>
</tr>
<tr>
<td>1910</td>
<td>18.3</td>
<td>12.9</td>
</tr>
<tr>
<td>1911</td>
<td>17.3</td>
<td>12.3</td>
</tr>
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<td>1912</td>
<td>18.2</td>
<td>11.3</td>
</tr>
<tr>
<td>1913</td>
<td>16.3</td>
<td>10.3</td>
</tr>
<tr>
<td>1914</td>
<td>16.2</td>
<td>10.3</td>
</tr>
<tr>
<td>1915</td>
<td>18.1</td>
<td>10.3</td>
</tr>
<tr>
<td>1916</td>
<td>17.6</td>
<td>10.5</td>
</tr>
<tr>
<td>1917</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1918</td>
<td>16.1</td>
<td></td>
</tr>
<tr>
<td>1919</td>
<td>18.3</td>
<td>11.5</td>
</tr>
<tr>
<td>1920</td>
<td>18.7</td>
<td>12.4</td>
</tr>
<tr>
<td>1921</td>
<td>22.6</td>
<td>10.9</td>
</tr>
<tr>
<td>1922</td>
<td>18.4</td>
<td></td>
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<tr>
<td>1923</td>
<td>18.1</td>
<td>10.1</td>
</tr>
<tr>
<td>1924</td>
<td>19.5</td>
<td></td>
</tr>
<tr>
<td>1925</td>
<td>18.4</td>
<td></td>
</tr>
<tr>
<td>1926</td>
<td>17.5</td>
<td></td>
</tr>
<tr>
<td>1930</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1935</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1939</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Birth Rate.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Montevideo</th>
</tr>
</thead>
<tbody>
<tr>
<td>1908</td>
<td>28.3</td>
</tr>
<tr>
<td>1909</td>
<td>29.3</td>
</tr>
<tr>
<td>1910</td>
<td>28.9</td>
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<tr>
<td>1911</td>
<td>29.1</td>
</tr>
<tr>
<td>1912</td>
<td>28.8</td>
</tr>
<tr>
<td>1913</td>
<td>29.3</td>
</tr>
<tr>
<td>1914</td>
<td>27.5</td>
</tr>
<tr>
<td>1915</td>
<td>26.3</td>
</tr>
<tr>
<td>1916</td>
<td>25.1</td>
</tr>
<tr>
<td>1917</td>
<td>24.2</td>
</tr>
<tr>
<td>1918</td>
<td>25.6</td>
</tr>
<tr>
<td>1919</td>
<td>27.7</td>
</tr>
<tr>
<td>1920</td>
<td>26.8</td>
</tr>
<tr>
<td>1921</td>
<td>27.7</td>
</tr>
<tr>
<td>1922</td>
<td>27.5</td>
</tr>
<tr>
<td>1923</td>
<td>27.4</td>
</tr>
<tr>
<td>1924</td>
<td>28.6</td>
</tr>
<tr>
<td>1925</td>
<td>28.3</td>
</tr>
<tr>
<td>1926</td>
<td>29.3</td>
</tr>
<tr>
<td>1930</td>
<td>25.3</td>
</tr>
<tr>
<td>1935</td>
<td>25.3</td>
</tr>
<tr>
<td>1939</td>
<td>25.3</td>
</tr>
</tbody>
</table>

**Source:** Julio Martinez Lemas. "Riqueza pobreza del Uruguay". Princeton University. School of Public Affairs. "Additional Vital Rates".
<table>
<thead>
<tr>
<th>Year</th>
<th>Children more than 14 Years</th>
<th>Percent with Total Popula.</th>
<th>Children Less than 14 Years</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1916</td>
<td>196,087</td>
<td>14.22</td>
<td>73,669</td>
<td>5.34</td>
</tr>
<tr>
<td>1925</td>
<td>230,000</td>
<td>10.9</td>
<td>84,000</td>
<td>4.54</td>
</tr>
<tr>
<td>1930</td>
<td>244,323</td>
<td>12.84</td>
<td>86,526</td>
<td>4.54</td>
</tr>
<tr>
<td>1937</td>
<td>268,172</td>
<td>12.81</td>
<td>74,187</td>
<td>3.54</td>
</tr>
<tr>
<td></td>
<td>1921-25</td>
<td>26-30</td>
<td>31-35</td>
<td>35</td>
</tr>
<tr>
<td>------------------</td>
<td>---------</td>
<td>-------</td>
<td>-------</td>
<td>----</td>
</tr>
<tr>
<td>Marriages Per 1,000 Population</td>
<td>5.3</td>
<td>2.1</td>
<td>5.3</td>
<td>5.6</td>
</tr>
<tr>
<td>Infant Mortality Rates. (Per 1,000 Population)</td>
<td>105</td>
<td>98</td>
<td>100</td>
<td>102</td>
</tr>
<tr>
<td>Death Rates. (Deaths Per 1,000 Population)</td>
<td>11.5</td>
<td>10.8</td>
<td>10.4</td>
<td>10.6</td>
</tr>
<tr>
<td>Birth Rates. (Live Births Per 1,000 Population)</td>
<td>25.8</td>
<td>24.7</td>
<td>21.6</td>
<td>20.4</td>
</tr>
</tbody>
</table>

Source: School of Public Affairs, Princeton University, and Population Association of America, Inc. "Additional Vital Rates".
<table>
<thead>
<tr>
<th>Livestock</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bovines</td>
<td>8,302.751</td>
</tr>
<tr>
<td>Sheep</td>
<td>17,361.160</td>
</tr>
<tr>
<td>Porcines</td>
<td>397.942</td>
</tr>
<tr>
<td>Stud</td>
<td>622.894</td>
</tr>
<tr>
<td>Mules</td>
<td>14.983</td>
</tr>
<tr>
<td>Caprines</td>
<td>25.801</td>
</tr>
</tbody>
</table>

Source: Department of Agriculture, Montevideo, 1939.
### TABLE 9.

**Production of Meat.**

Estimated Production in Metric Tons (000's).

<table>
<thead>
<tr>
<th></th>
<th>1930</th>
<th>1931</th>
<th>1932</th>
<th>1933</th>
<th>1934</th>
<th>1935</th>
<th>1936</th>
<th>1937</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef and Veal</td>
<td>251.</td>
<td>215.4</td>
<td>178.8</td>
<td>196.1</td>
<td>216.4</td>
<td>239.1</td>
<td>201.3</td>
<td>220.6</td>
</tr>
<tr>
<td>Mutton</td>
<td>52.2</td>
<td>31.7</td>
<td>14.2</td>
<td>17.9</td>
<td>14.8</td>
<td>18.4</td>
<td>16.1</td>
<td>16.4</td>
</tr>
<tr>
<td>Pig-Meat</td>
<td>4.7</td>
<td>5.2</td>
<td>4.6</td>
<td>4.2</td>
<td>4.3</td>
<td>4.5</td>
<td>5.6</td>
<td>6.4</td>
</tr>
<tr>
<td>Totals</td>
<td>307.9</td>
<td>252.3</td>
<td>197.6</td>
<td>218.2</td>
<td>235.5</td>
<td>262.</td>
<td>223.</td>
<td>243.4</td>
</tr>
</tbody>
</table>

Source:
### TABLE 10.

**ECONOMY.**

Agricultural Production, (Quintals 000's)

<table>
<thead>
<tr>
<th></th>
<th>31-35</th>
<th>36-37</th>
<th>38-39</th>
<th>39-40</th>
<th>40-41</th>
<th>41-42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>2.516</td>
<td>4.510</td>
<td>4.207</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oats</td>
<td>381</td>
<td>521</td>
<td>401</td>
<td>191</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maize</td>
<td>1.402</td>
<td>1.587</td>
<td>1.273</td>
<td>1.529</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rye</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source:**


Department of Agriculture Uruguay 1940.
**ECONOMY**

**Exportation**

Wool Shipments are about 30 per cent of Total Exports.

<table>
<thead>
<tr>
<th>Season</th>
<th>Bales</th>
</tr>
</thead>
<tbody>
<tr>
<td>1935-36</td>
<td>112,484</td>
</tr>
<tr>
<td>1936-37</td>
<td>120,054</td>
</tr>
<tr>
<td>1937-38</td>
<td>91,431</td>
</tr>
<tr>
<td>1938-39</td>
<td>126,225</td>
</tr>
<tr>
<td>1939-40</td>
<td>104,233</td>
</tr>
<tr>
<td>1940-41</td>
<td>170,364</td>
</tr>
</tbody>
</table>

83% of the Exports are to the U.S.A. (1940).


*Main Exports of Meat and By-Products during 1940.*

<table>
<thead>
<tr>
<th>Meat</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Canned Meat</td>
<td>28,635</td>
</tr>
<tr>
<td>Frozen Beef</td>
<td>48,861</td>
</tr>
<tr>
<td>Meat Extracts</td>
<td>550</td>
</tr>
<tr>
<td>Jerked Beef</td>
<td>1,813</td>
</tr>
<tr>
<td>Tongues Chilled</td>
<td>948</td>
</tr>
<tr>
<td>Salted Pork</td>
<td>262</td>
</tr>
<tr>
<td>Frozen Mutton</td>
<td>12,987</td>
</tr>
<tr>
<td>Cattle Grease</td>
<td>1,693</td>
</tr>
<tr>
<td>Tallow</td>
<td>2,017</td>
</tr>
<tr>
<td>Tripe</td>
<td>843</td>
</tr>
<tr>
<td>Meat Meal</td>
<td>5,561</td>
</tr>
<tr>
<td>Entrails</td>
<td>2,668</td>
</tr>
</tbody>
</table>

**Skins and Hides**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheepskins (dry)</td>
<td>3,539</td>
</tr>
<tr>
<td>Cattle Hides &quot;</td>
<td>1,281</td>
</tr>
<tr>
<td>Cattle Hides (salted)</td>
<td>16,107</td>
</tr>
</tbody>
</table>
TABLE 12.

Exportations.

% of Total.

<table>
<thead>
<tr>
<th>Stock Raising, Wool, Hides</th>
<th>Agriculture and Related Products</th>
<th>Extractive Industries, Mining, Fish</th>
<th>Provisions for Ships</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>83.40</td>
<td>10.55</td>
<td>5.61</td>
<td>0.41</td>
<td>1930</td>
</tr>
<tr>
<td>82.46</td>
<td>11.28</td>
<td>5.43</td>
<td>0.73</td>
<td>1931</td>
</tr>
<tr>
<td>82.38</td>
<td>7.32</td>
<td>8.75</td>
<td>1.45</td>
<td>1932</td>
</tr>
<tr>
<td>84.02</td>
<td>5.85</td>
<td>9.45</td>
<td>0.45</td>
<td>1933</td>
</tr>
<tr>
<td>78.54</td>
<td>14.61</td>
<td>5.36</td>
<td>0.37</td>
<td>1934</td>
</tr>
<tr>
<td>85.56</td>
<td>7.65</td>
<td>5.49</td>
<td>0.34</td>
<td>1935</td>
</tr>
<tr>
<td>80.06</td>
<td>14.08</td>
<td>4.95</td>
<td>0.20</td>
<td>1936</td>
</tr>
<tr>
<td>84.41</td>
<td>9.91</td>
<td>3.22</td>
<td>1.77</td>
<td>1937</td>
</tr>
<tr>
<td>93.90</td>
<td>10.61</td>
<td>3.53</td>
<td>1.52</td>
<td>1938</td>
</tr>
<tr>
<td>78.37</td>
<td>16.39</td>
<td>2.75</td>
<td>1.37</td>
<td>1939</td>
</tr>
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</table>

Source: Official Statistics of Uruguay. 1939 Vol. II.

Direccion General de Estadistica, Montevideo.
TABLE 13.

Exportations. In "pesos".

<table>
<thead>
<tr>
<th>Stock Raising, Wools, Hides</th>
<th>Agriculture and Related Products</th>
<th>Extractive Industries Mining Fish</th>
<th>Provisions for Ships</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>84.187.046</td>
<td>10.645.680</td>
<td>5.659.402</td>
<td>410.441</td>
<td>1930</td>
</tr>
<tr>
<td>64.589.968</td>
<td>8.819.024</td>
<td>4.244.690</td>
<td>576.579</td>
<td>1931</td>
</tr>
<tr>
<td>48.013.176</td>
<td>4.264.051</td>
<td>5.094.639</td>
<td>848.690</td>
<td>1932</td>
</tr>
<tr>
<td>56.030.690</td>
<td>3.897.182</td>
<td>6.304.302</td>
<td>318.202</td>
<td>1933</td>
</tr>
<tr>
<td>54.740.575</td>
<td>10.187.430</td>
<td>3.739.326</td>
<td>262.999</td>
<td>1934</td>
</tr>
<tr>
<td>81.577.930</td>
<td>7.301.394</td>
<td>5.243.253</td>
<td>320.965</td>
<td>1935</td>
</tr>
<tr>
<td>72.219.353</td>
<td>12.706.955</td>
<td>4.466.990</td>
<td>176.550</td>
<td>1936</td>
</tr>
<tr>
<td>83.510.146</td>
<td>9.796.162</td>
<td>3.184.471</td>
<td>1.753.990</td>
<td>1937</td>
</tr>
<tr>
<td>80.832.254</td>
<td>10.230.170</td>
<td>3.406.905</td>
<td>1.446.870</td>
<td>1938</td>
</tr>
<tr>
<td>79.949.787</td>
<td>16.613.314</td>
<td>2.788.827</td>
<td>1.384.858</td>
<td>1939</td>
</tr>
</tbody>
</table>
### TABLE 14.

**Exportation and Importation with the World.**

<table>
<thead>
<tr>
<th>Region</th>
<th>Value</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>99,878,174</td>
<td>61.</td>
</tr>
<tr>
<td>America</td>
<td>45,784,015</td>
<td>27.8</td>
</tr>
<tr>
<td>Asia</td>
<td>6,174,651</td>
<td>3.78</td>
</tr>
<tr>
<td>Africa</td>
<td>743,617</td>
<td>0.41</td>
</tr>
<tr>
<td>Oceania</td>
<td>12,198</td>
<td>0.01</td>
</tr>
<tr>
<td>Canal</td>
<td>12,571,963</td>
<td>7.</td>
</tr>
<tr>
<td>Totals</td>
<td>165,164,618</td>
<td>100.</td>
</tr>
</tbody>
</table>

**Source:** Official Statistic of Uruguay. 1939 Vol.II.

Direccion General de Estadistica, Montevideo.
### TABLE 15.

**Exportations and Importations with the Other American Republics.**

<table>
<thead>
<tr>
<th>Countries</th>
<th>Importation</th>
<th>Exportation</th>
<th>Balance (Exp. less Import)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dutch Antilles</td>
<td>3,216,745</td>
<td>33,985</td>
<td>- 3,182,760</td>
</tr>
<tr>
<td>Argentina</td>
<td>4,454,679</td>
<td>2,203,570</td>
<td>- 2,251,109</td>
</tr>
<tr>
<td>Brazil</td>
<td>5,465,570</td>
<td>6,105,339</td>
<td>+ 639,769</td>
</tr>
<tr>
<td>Bolivia</td>
<td>13,584</td>
<td>80,004</td>
<td>+ 66,420</td>
</tr>
<tr>
<td>Canada</td>
<td>85,867</td>
<td>351,411</td>
<td>+ 265,544</td>
</tr>
<tr>
<td>Colombia</td>
<td>1,498</td>
<td></td>
<td>- 1,498</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>707</td>
<td>68,581</td>
<td>+ 67,876</td>
</tr>
<tr>
<td>Cuba</td>
<td>100,534</td>
<td>47,076</td>
<td>- 53,458</td>
</tr>
<tr>
<td>Chile</td>
<td>225,755</td>
<td>26,608</td>
<td>- 199,147</td>
</tr>
<tr>
<td>Ecuador</td>
<td>1,733,758</td>
<td></td>
<td>- 1,733,758</td>
</tr>
<tr>
<td>United States</td>
<td>3,469,780</td>
<td>14,052,263</td>
<td>+10,582,803</td>
</tr>
<tr>
<td>Guatemala</td>
<td>82,416</td>
<td>3,550</td>
<td>- 78,866</td>
</tr>
<tr>
<td>Honduras</td>
<td>1,489</td>
<td></td>
<td>+ 1,489</td>
</tr>
<tr>
<td>Hawaii</td>
<td>494</td>
<td>494</td>
<td>- 494</td>
</tr>
<tr>
<td>Mexico</td>
<td>282,323</td>
<td>628,793</td>
<td>+ 346,470</td>
</tr>
<tr>
<td>Nicaragua</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panama</td>
<td></td>
<td>94,736</td>
<td>+ 94,736</td>
</tr>
<tr>
<td>Paraguay</td>
<td>394,426</td>
<td>136,398</td>
<td>- 258,028</td>
</tr>
<tr>
<td>Peru</td>
<td>3,540,098</td>
<td>24,074</td>
<td>- 3,516,024</td>
</tr>
<tr>
<td>Puerto Rico</td>
<td>310,281</td>
<td></td>
<td>+ 310,281</td>
</tr>
<tr>
<td>Santo Domingo</td>
<td>19,447</td>
<td>11,446</td>
<td>- 8,001</td>
</tr>
<tr>
<td>Venezuela</td>
<td>266,171</td>
<td>254,679</td>
<td>- 11,492</td>
</tr>
</tbody>
</table>

**Source:** Official Statistic of Uruguay. 1939 Vol. II.
Direccion General de Estadistica Montevideo.
<table>
<thead>
<tr>
<th>Product</th>
<th>Metric Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>13,066</td>
</tr>
<tr>
<td>Wheat Flour</td>
<td>1,414</td>
</tr>
<tr>
<td>Brans</td>
<td>550</td>
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Source: Official statistic of Uruguay - 1939. Vol. II. Dirección General de Estadística
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Source: Official statistic of Uruguay
1939. Vol. II
Direccion General de Estadística
Montevideo. Uruguay
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Dirección General de Estadísticas, Montevideo.