

Appendix

Mexican Interpretations of the Water Treaty

EXTENSION OF REMARKS OF

HON. HARRY R. SHEPPARD

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Tuesday, November 6, 1945

Mr. SHEPPARD. Mr. Speaker, when the water treaty with Mexico was before the Senate for ratification, the State Department negotiators told the Senate Committee on Foreign Relations that, with respect to the Colorado River, the treaty obligated Mexico to accept water regardless of quality, even though it might be so salty as to be unusable; and that the so-called extraordinary drought clause of the treaty would relieve the United States from furnishing the guaranteed quantity of 1,500,000 acre-feet per year if the drought occurred in any portion of the basin in the United States and resulted in the curtailment of usage, and that it would not have to occur simultaneously in all portions of the basin to entitle us to relief.

There has recently been brought to my attention the interpretation given to the Mexican Senate by the Mexican negotiators of the treaty on these same two points, among others. Their interpretation is exactly opposite to that given the Senate by our State Department. As to quality of water, the Mexican negotiators reported that the water must be of good quality for irrigation, of the same quality as that delivered to American projects. As to extraordinary drought, the Mexicans reported:

The amount guaranteed to Mexico can only be reduced in cases of extreme drought and only if that extraordinary drought should bring about the reduction of all consumptions in the United States.

These, among others, were exactly the ambiguities which opponents of the treaty pointed out during debate. Now that these ambiguities have been so definitely established, certainly in the interests of proper relations with our neighbor, Mexico, and to obviate future misunderstandings or bitterness which might come from forced arbitration, and also so that the people of our Colorado River Basin States may know definitely the burdens which they must assume, under the treaty, the State Department is under the deepest obligation to remove them by exchange of notes before the treaty is made effective by exchange of ratifications, and certainly before this House appropriates money to implement the treaty. A deficiency bill containing money for this purpose is before the House Appropriations Committee at this moment.

For the information of the Members, as more will be heard of this grave matter in the near future, I am placing in the RECORD a full translation of the text of the report to the Mexican Senate by Engineer Adolfo Orive Alba, executive chairman of the National Irrigation Commission of Mexico.

The statements of Engineer Adolfo Orive Alba are taken from a prepared report which he submitted to the Foreign Relations Committee of the Mexican Senate on July 31, 1945. This committee was, at the time, holding hearings on the water treaty with the United States concerning the Colorado and Tijuana Rivers and the Rio Grande, which had been ratified by the United States Senate.

Engineer Adolfo Orive Alba is executive chairman of the National Irrigation Commission of Mexico. This Commission is under the Department of Agriculture and Development and is in charge of all irrigation and reclamation work in Mexico. It corresponds in Mexico to the Bureau of Reclamation in the United States and Engineer Orive Alba holds a position corresponding to that of Mr. Harry Bashore, Commissioner of the Bureau of Reclamation.

Engineer Orive Alba has been in charge of irrigation works on both the Rio Grande and Colorado Rivers. He speaks from intimate knowledge of both rivers and his statement is made officially in his capacity of executive chairman. Moreover, he was one of the negotiators of the Treaty which gives his interpretations and statements even greater weight. He closes his report with this statement:

The above considerations reach the conclusion that the treaty technically is beneficial for the country, and I express this in the name of the National Irrigation Commission and as a participant, in my character of executive chairman, in the technical aspects of its negotiation.

This brings to light the different attitude of the Mexican Government from that of our Government in the treaty negotiations. It is evident that Mexico recognized the value of including the executive chairman of its National Irrigation Commission as a participant in treaty negotiations in order to secure the detail knowledge which the Commission had acquired relative to the rivers in question. On the other hand, our State Department did not even consult Commissioner Bashore during the negotiations much less have him participate in those negotiations. Commissioner Bashore testified that he knew nothing of the treaty prior to its being signed in February 1944 and that he had never been consulted by our State Department in regard to it.

The full text of Engineer Orive Alba's statement is as follows:

[From El Universal, Mexico City, of August 1, 1945]

THE WATER TREATY OF THE COLORADO RIVER AND RIO GRANDE FAVORS MEXICO

Engineer Adolfo Orive Alba, executive chairman of irrigation, made a well-founded defense of that document before the Senate.

In the exposition which Engineer Adolfo Orive Alba, executive chairman of the National Irrigation Commission, made yesterday before the Foreign Relations Committee of the Senate, on the International Water Treaty recently signed by Mexico and the United States, that official, with obvious knowledge of his subject, maintained that the arrangements made between the two Governments not only merit the ratification of the Mexican Senate, but represent valuable advantages for the Nation.

He destroyed one by one the charges and objections which have been formulated against said agreement, making a documented study before the Senators of the channels of the Colorado River and Rio Grande, of their courses through American and Mexican territory, and of the conditions under which the waters of the two rivers were and still are used, without the beneficial provisions which the international treaty establishes subject to ratification.

Concretely, the executive chairman of the National Irrigation Commission affirmed that the maximum possibilities of areas irrigated without the treaty would reach at the highest to 360,000 hectares, that is, that the concrete advantage which Mexico obtains with that international instrument is that of counting on a volume of water sufficient to irrigate 445,000 hectares (1,000,000 acres) more than it could irrigate without the approval or existence of the treaty.

The exposition of the executive chairman of the National Commission of Irrigation constitutes, without doubt, a historical document which dissipates any doubt or suspicion which might have arisen regarding the international arrangements on the waters of the Colorado and Rio Grande Rivers, and punctually, as it has great importance, we transcribe it below just as Engineer Orive Alba read it, interrupting his reading only in order to make it more explicit with clarifications made on maps and diagrams fastened to the walls, which the senators, deputies, and the public in general could consult freely.

STATEMENT OF ENGINEER ADOLFO ORIVE ALBA, EXECUTIVE CHAIRMAN OF THE NATIONAL IRRIGATION COMMISSION¹

HONORABLE SENATORS: I am highly grateful for the kind invitation which you have given me for appearing at this round table, both in my character as executive chairman of the National Irrigation Commission and in that of participant, with that category, in the negotiation of the treaty.

The heated commentaries which this treaty has aroused, the importance that the Senate has given it in its study and this democratic form of discussing it before you, are undoubtedly not exaggerated, because the

¹ The words and figures enclosed in parentheses, e. g., "445,000 hectares (1,100,000 acres)" and also the supplement table following table 1 are interpolations of United States equivalents of quantities expressed in Mexican units.

country is one of the most important that our country has signed since its independence and is the most important of its kind in the entire world.

The National Irrigation Commission is preparing a voluminous report on the treaty which it will present to the Senate officially, at the opening of the next period of sessions. This report will contain all the data, calculations, etc., which served as a basis for the treaty. It will contain, moreover, a detailed study, from the technical point of view, of each of clauses, of each of the phrases, and even of the words of the treaty, with the interpretation which the National Irrigation Commission officially gives to them.

But with the hope that you may receive in due time this report now in preparation and in attention to your kind invitation, I have come to make a brief exposition of the treaty with the object of clarifying many of its concepts and of commenting on the observations which have been made about it to date by the press, from the point of view of the National Irrigation Commission.

This exposition should be begun by a brief description of the Rio Grande, Colorado, and Tijuana Rivers.

I. THE RIO GRANDE (RIO BRAVO)

It rises in the United States and runs through said country to the south until reaching Ciudad Juarez, where it is converted into a boundary between the two countries for some 2,000 kilometers (1,200 miles) to its outlet into the Gulf of Mexico.

The International Water Treaty of 1906, signed by the United States and by our country, distributed the waters of the Rio Grande up to the place called Fort Quitman, where the Juarez Valley terminates. The present treaty, therefore, is only occupied with the Rio Grande, from Fort Quitman to the Gulf.

From Fort Quitman to the Gulf of Mexico the impounding basin of the Rio Grande in the United States is 150,528 square kilometers (58,119 square miles) and in Mexico 211,177 square kilometers (81,536 square miles).

If there were no use of the waters either in Mexican territory or American territory, there would reach the Rio Grande as an annual average, from Fort Quitman to the Gulf:

	Millions of cubic meters	Percent	Thousands of acre-feet
1. Proceeding from the United States.....	3,047	35	(2,470)
2. Proceeding from Mexico.....	5,812	65	(4,712)
Total.....	8,859	100	(7,182)

The regimen of the Rio Grande, in spite of the dams that are constructed on its subsidiaries, both American and Mexico, is to this date very irregular. On numerous occasions each year the flow of the river is so reduced that it is not enough to satisfy the needs of irrigation on both banks. On the other hand, on other occasions great floods pass through the river, of short duration, which cause serious inundations of the bordering lands, and principally of Mexican lands.

II. THE COLORADO RIVER

It rises in the United States and its basin includes part of seven American States. It is 2,730 kilometers (1,696 miles) long, of which about 30 (19 miles) serve as the international boundary between Mexico and the United States, and the last 160 kilometers (100 miles) are totally within Mexican territory. It has no subsidiaries of any kind in Mexican territory. Its total runoff proceeds from the United States.

Before storage dams were constructed to regulate its current, its flow was highly irreg-

ular. Its current fluctuated from a few liters per second, which allowed it to be crossed on foot, practically without wetting the shoes, to imposing floods of 6,800 cubic meters per second (240,000 second feet). The average annual runoff of the Colorado River is estimated at 22,000,000,000 cubic meters (17,835,000 acre-feet), but this annual runoff, without dams, has fluctuated from 7,000,000,000 (5,675,000 acre-feet) to 28,000,000,000 cubic meters (22,700,000 acre-feet).

This very irregular flow of the river demonstrates the necessity of storing its waters so that they may be used for irrigation. In the United States there are numerous adequate sites for carrying out this storage. In our country, as the river is already in its deltaic zone, there is none.

III. THE TIJUANA RIVER

The Tijuana River is formed by two principal tributaries; the Las Palmas River which rises in Mexico and the Alamar River which rises in the United States, crosses the international line to enter Mexico and join with the Las Palmas River some 6 kilometers (4 miles) to the south of Tijuana. Both rivers together form the Tijuana River, which runs toward the northeast, again crossing the international line at Tijuana to enter American territory and empty into the Pacific three kilometers north of the frontier.

On the Las Palmas River our country has constructed the Rodriguez Dam and uses all of its waters. There are dams on the various American tributaries of the Alamar River.

The impounding basin of the Tijuana River is:

	Square kilometers	(Square miles)
In the United States.....	1,230	(475)
In Mexico.....	3,200	(1,235)
Total.....	4,430	(1,710)

Its run-off is even more irregular than that of the other international rivers, since the case has occurred in which the Tijuana River became completely dry for a continuous period of 7 years, and on the other hand, on other occasions it has carried floods of up to 2,000 cubic meters per second (70,000 second-feet). Its annual average run-off has been estimated at some 20,000,000 cubic meters (16,200 acre-feet).

IV. HISTORIC ANTECEDENTS

The treaties of 1848 and of 1853 between the United States and Mexico, with respect to the use of their currents, only considered the navigation of the Rio Grande and Colorado Rivers.

The active use of the waters of these rivers for irrigation only began at the commencement of the present century.

As these uses were increased and as both countries constructed irrigation works, the water commenced to become insufficient and the need of reaching an agreement between the two countries for the better use of the waters of these rivers became apparent.

In 1927 the United States and Mexico agreed to hold conversations for studying the problem of the international rivers. In 1928 the first of these conversations was held, it having been decided to gather the necessary technical data on the three rivers. In 1929, with this data collected by mixed commissions, conferences were held regarding the distribution of the waters of the Colorado and Rio Grande, but as there was not sufficient data about the Tijuana River and as this current has relatively small importance, it was decided to postpone its study until later.

The conferences of 1929 failed because the two delegations were not able to reach an agreement. It is interesting to note that

the American delegation made a proposition which in summary was equivalent to the following:

1. That of the waters which reached the Rio Grande, there should be assigned in the first place to the United States the volume which had been in use in Texas of 1188 million cubic meters (963,000 acre-feet), and to Mexico what it had been taking from the principal current, or 70,000,000 cubic meters (56,700 acre-feet), and the rest would be divided equally between the two countries. This was equivalent to assigning from the Mexican tributaries 985,000,000 cubic meters (798,500 acre-feet) to the United States.

2. In the case of the Colorado River, to assign to Mexico the maximum volume that it had used until then; that is, before the construction of Boulder Dam, a volume which was estimated at 925,000,000 cubic meters (750,000 acre-feet).

The Mexican delegation proposed that the waters of the Rio Grande should be divided in half between the two countries, which was equivalent to assigning to the United States 426,000,000 cubic meters (345,350 acre-feet) of water from the Mexican tributaries, since the latter carried more water to the Rio Grande than the American tributaries. In the case of the Colorado River the Mexican delegation asked that there be furnished sufficient water to irrigate the 600,000 hectares (1,482,600 acres), which were considered as irrigable on the Mexican side.

After the failure of the above conferences, it was not until 1943 when it was possible to again commence negotiations by engineers and lawyers of the two countries, which culminated with the signature of the present international water treaty, in the first part of 1944.

V. SIGNIFICANCE OF THE TREATY IN THE CASE OF THE RIO GRANDE

I am going to read the fundamental article of the treaty in the case of the Rio Grande:

"ART. 4. The waters of the Rio Grande (Bravo) between Fort Quitman, Tex., and the Gulf of Mexico are assigned to the two countries in the following manner:

"A. To Mexico:

"(a) The total of the waters that reach the principal current of the Rio Grande from the San Juan and Alamo Rivers, including the return water proceeding from the lands that these two rivers irrigate.

"(b) Half of the run-off from the principal basin of the Rio Grande below the lower main international storage dam, whenever said run-off is not assigned expressly in this treaty to one of the two countries.

"(c) A third part of the water which reaches the principal current of the Rio Grande proceeding from the Conchos, San Diego, San Rodrigo, Escondido, Salado, and Arroyo de Las Vacas Rivers, which third part shall not be less in total, on an average and in cycles of five consecutive years, than 431,721,000 cubic meters (350,000 acre-feet) annually. The United States will not acquire any right by the use of the waters of the tributaries mentioned in this clause in excess of the 431,721,000 cubic meters (350,000 acre-feet) mentioned, except the right of using the third part of the run-off which reaches the Rio Grande from said tributaries, although it exceeds the volume named.

"(d) Half of any other run-off in the principal basin of the Rio Grande, not assigned especially in this article, and half of the contributions of all the tributaries not measured—which are those not named in this article between Fort Quitman and the lower main international dam.

"In cases of extraordinary drought or serious accident to the hydraulic systems of the measured Mexican tributaries which may make it difficult for Mexico to allow to pass the 431,721,000 cubic meters (350,000 acre-feet) annually which are assigned to the

United States as the minimum contribution from the Mexican tributaries mentioned, in clause 'c' of paragraph 'B' of this article, the amount lacking which may exist at the end of the following cycle (will be replaced) with water proceeding from the same tributaries.

"If the useful capacity assigned to the United States of at least two of the main international dams, including that located upstream, is filled with water belonging to the United States, a cycle of 5 years will be considered terminated, and all the charges totally paid, a new cycle beginning from that amount."

In the first place I desire to call your attention especially to this fundamental phrase which, if it had not been carefully determined, would have given rise to much confusion: "There is assigned to the United States (c) a third part of the water which reaches the main current of the Rio Grande * * *." This it is not a matter of assigning the third part of the virgin run-off of the Mexican tributaries which this clause mentions, but only the third part of the water which freely reaches the Rio Grande, that is, the surplus, after having made all the use possible of the waters of these tributaries within national territory.

Thus, having cultivated an average from 1900 to 1943 on our tributaries of a total area estimated at 127,000 hectares (313,800 acres) under the plans of the Commission there will be cultivated some 315,000 hectares (778,400 acres) in the future.

In effect, our country, through the National Irrigation Commission, before negotiation of the treaty, studied the form of making use within the basin of each Mexican tributary of the Rio Grande the maximum possible volume of the water of said tributary. For example, in the case of the Conchos River the following utilizations in detail actually exist:

	Hectares	(Acres)
By direct intakes on the Conchos River, there are irrigated.....	17,239	(42,600)
On the San Pedro River, tributary of the Conchos.....	5,000	(12,400)
On the Florida River, with permanent irrigation.....	10,000	(24,700)
On the Chuvicuar River.....	3,150	(7,800)
In the Delicias irrigation district.....	33,421	(82,500)
Total.....	69,560	(170,000)

The Commission has made a study in order to make use of the waters of the Conchos River and its tributaries to the greatest degree possible, by the construction of numerous new dams which would permit regulation to the point where it is physically practicable of the torrential waters of the Conchos River and its tributaries, having found that the maximum utilizations which can be made are the following:

	Hectares	(Acres)
Increase in the Delicias irrigation district with the Las Virgenes and Villalba Dams.....	30,000	(74,100)
Increase of 8,200 hectares by means of the dams projected on the Florida River and permanent irrigation of 2,450 hectares not considered in the area benefited at present but evidently to be irrigated.....	10,650	(26,300)
Increase by utilization of the waters of the Chuvicuar River through the construction of the Los Aldamas Dam.....	2,100	(5,200)
Irrigation in the Ojinaga Valley through the construction of the dam at "El Piguis".....	4,500	(11,100)
Total possible increase.....	47,250	(116,700)

But in spite of the above increase it will not be physically possible to make use, every

year, of the total of the run-off of the Conchos River, because there will always be cases of extraordinary floods which are spilled over the dams and go to the Rio Grande, because there will always be return water from the irrigated lands which inevitably arrive at the river bed, etc., that is, in the case of the Conchos River as in the case of any other Mexican river in the center of the country, and to generalize even more, in the case of any river in any part of the world, there will always be surpluses, since it is never possible to use 100 percent of the current of the river. These future surpluses appear in estimates in the attached table, but it is necessary to state that the amounts given will be the average of numerous years, that is, there will be years in which the surplus from the Conchos River, which reaches the Rio Grande, will be almost nothing and on the other hand there will be abundant years in which, by spillings from the dams, large surpluses will reach the Rio Grande. The amount of 770,000,000 cubic meters (624,000 acre-feet) per year which is given, is the average of the future surpluses of many years.

In like form the National Irrigation Commission proceeded with the other tributaries of the Rio Grande, that is, without taking into account that they flow into the Rio Grande, it tried to make use of the total of its current in the irrigation of lands of the basin of these tributaries and thus determined the unavoidable surpluses to which we refer in the case of the Conchos River.

The attached table shows numerically the form in which the treaty will operate with respect to the Rio Grande. This table shows what the virgin current of the Rio Grande would be if no uses existed, the actual consumptions which diminish said virgin current, the total future consumptions which will diminish said virgin current even more, and the future surpluses which will result from deducting from the original amount of the current the future consumptions.

In its studies the National Irrigation Commission has not proceeded by methods, but analyzed the case month by month of each year and year by year, for a period of 45 years.

So then, having made all the imaginable utilizations of the waters of the tributaries of the Rio Grande, in the manner before explained, there still will reach the Rio Grande surpluses from these tributaries whose average volume for many years is that given by this table.

From these surplus volumes which reach the Rio Grande, proceeding from the six tributaries: Conchos, San Diego, San Rodrigo, Escondido, Salado, and Arroyo de Las Vacas Rivers, with an average total contribution of 1,423,000,000 cubic meters (1,153,600 acre-feet) per year, Mexico by the treaty assigns the third part to the United States. Mexico guarantees that the volume assigned to the United States from these tributaries will never be less than 431,000,000 cubic meters (350,000 acre-feet) which is an amount slightly inferior to the third part of the average volume of the surpluses before mentioned.

Why did Mexico assign this volume to the United States?

Because our country has always sustained the logical thesis that the waters which flow in the Rio Grande in its bounding section should be distributed by halves between the two countries, and the simple arithmetical operation made in this statement shows us that by means of the stipulations of the treaty the surplus water which runs in the Rio Grande is divided practically in half between the two countries. Please note that in 1929 our delegation made an equivalent proposition in the case of the Rio Grande and that the American delegation in that year asked for a volume three times greater than that which the present treaty grants it.

Moreover, it should be noted that the United States has been taking in all the latter years a large volume of water from the Rio Grande. Said volume is made up of water proceeding from the United States and of water proceeding from our country. It is calculated that the water proceeding from our tributaries and diverted by the United States is 922,000,000 cubic meters (747,400 acre-feet). The treaty, consequently, reduces the volume of Mexican waters used by the United States by half.

VI. SITUATION ON THE RIO GRANDE WITHOUT THE TREATY

Without the existence of this treaty, the situation of Mexico with respect to the Rio Grande would be the following:

(a) With respect to its tributaries, Mexico could develop the same projects which it can execute with the treaty, but not a single one more.

(b) With respect to the principal current of the Rio Grande during the first years, Mexico could continue to take the small volume which it uses by El Retamal for the irrigation of some 30,000 hectares (74,100 acres). The United States would continue taking in the first years a volume of 1,419,000,000 cubic meters (1,150,400 acre-feet) for the irrigation of 236,000 hectares (583,200 acres). But, and this is a decisive "but," the United States had already begun some gigantic works with the name of Federal Project No. 5, or Rincon, a project approved by the American Congress which would permit of carrying practically the total of the waters of the Rio Grande to American territory, with the very reasonable cost of \$60,000,000. On the Rio Grande there has existed a "race" of utilizations on the part of the two countries. The United States commenced installing a large number of pumps for taking water from the Rio Grande. Mexico, in 1937, began the use of these waters by opening the small gravity intake of Retamal. The United States answered with the gigantic works of Federal Project No. 5, or Rincon. Mexico would not have recourse nor physical possibilities for making an answer to these works, which, as we say, would be equivalent to taking the Rio Grande to American territory. These works were suspended at the beginning of the present war, but could be renewed on its termination.

VII. SITUATION ON THE RIO GRANDE WITH THE TREATY

If the treaty is approved by the Senate and goes into effect, the situation of Mexico with respect to the waters of the Rio Grande will be the following:

I. With regard to the use of the current of all the Mexican tributaries of the Rio Grande, our country could carry out exactly the same projects which it would have done if there had been no treaty. That is, there is no injury to any of the States in which the basins of these tributaries are found.

II. With the treaty in effect it will be possible to construct international dams in the bed of the Rio Grande itself, which will regulate through their storage the surpluses which, with a very irregular regimen, flow and will flow in the future in the bed of the Rio Grande. Through the use of its waters, Mexico will be able to irrigate in the Mexican part of the delta of the Rio Grande, blessed with extraordinary fertile lands, an area estimated at 245,000 hectares (605,400 acres).

By means of the treaty, the danger for Mexico will disappear which was implied in the Federal Project No. 5, or Rincon project, which if constructed by the United States at the end of the war, will only be for carrying the part which corresponds to it of the waters of the Rio Grande, and not the total of said current.

The treaty will bring the following additional advantages for the two countries:

1. Thanks to the international dams, it will control the floods which now cause great destruction, principally on the Mexican side.

2. Energy will be generated which will be distributed equally between the two countries and which will permit on the one hand the amortization of part of the cost of the international dams and on the other, the industrialization of our frontier region.

VIII. PRINCIPAL OBJECTIONS MADE TO THE TREATY WITH REGARD TO THE RIO GRANDE

The great majority of the objections which I have read or heard about the treaty have been made through the lack of knowledge about it or of the technical data which served as a basis for it. For example, various opponents of the treaty have objected by stating that it assigns 60 percent of the water of our tributaries to the United States, which, as we have seen, shows a complete lack of knowledge of the treaty, or of the amounts of water which are really involved. I do not refer, therefore, to these objections since I am sure that those who made them will modify their opinion on better knowledge of the treaty and will revise it dispassionately with the correct data of the National Irrigation Commission. But if they still have some doubts, I will make the offer of hearing them in the Commission's office and giving them all the numerical explanations that may be necessary to convince them.

The National Irrigation Commission cannot refer to the objections which are derived from legal theories, and I will confine myself to considering the objections of a technical character. On the other hand, as engineers, the realities weigh more in our minds than the abstract theories.

With the above clarifications made, I am going to refer to the principal objections which it is our duty to remove for you.

1. Various opponents say that the treaty assigns the third part of the waters of our tributaries, the Conchos, San Diego, San Rodrigo, Escondido, Salado, and Arroyo de Las Vacas Rivers. We have already explained that the third part of the waters of said tributaries is not assigned, but simply the third part of the surpluses which reach the Rio Grande after having made all the possible developments in the basins of each one of said streams. The guaranteed amount of 431,000,000 cubic meters (350,000 acre-feet) is slightly less than the third part of the average surpluses which the national irrigation commission has calculated as the quantities which will reach the Rio Grande after having made all possible developments of the current of the six Mexican tributaries mentioned.

2. It is said that projects which now appear impossible to us could perhaps be carried out in the future, when some new powerful pump is invented, etc. The National Irrigation Commission has calculated that the average surpluses which will reach the Rio Grande from the six Mexican tributaries affected by the guaranty of the treaty will be 1,423,000,000 cubic meters (1,153,600 acre-feet) per year. As the treaty only guarantees to the United States 431,000,000 cubic meters (350,000 acre-feet) per year, there still remains to Mexico 992,000,000 cubic meters (747,400 acre-feet) per year to cover amply any project which might have been omitted as being impossible of construction at present. I believe it pertinent to call your attention to the fact that, in the case of the Colorado River, the American opponents to the celebration of the treaty with Mexico adduced exactly the same reasoning, that is, they say that the United States ought not to promise to Mexico a single drop of water of the Colorado River because all the water of that stream could be used in the future by the execution of projects which now are deemed impossible. I only desire to add that if for this reasoning, in one or the other of the countries, the treaty were to be rejected, it would surely be the United States, which

by its economic potentialities would sooner be able to carry out those fantastic projects in the case of the Colorado River, in order not to leave a drop to Mexico.

3. It is objected that "a preferential right is given to the United States to the use of 431,000,000 cubic meters (350,000 acre-feet) from our tributaries which would bring it about that, in years of shortages, the permanent Mexican cultivations would be deprived of water and would die." The treaty clearly specified that Mexico guarantees that volume of 431,000,000 cubic meters (350,000 acre-feet) from any of its six tributaries and as an average in cycles of 5 years, therefore in 1, 2, or more years of scarcity, it would not need to give a single drop of water from one, various or all the six tributaries which the guaranty affects. Moreover, the treaty permits Mexico to pay the deficiencies of a 5-year cycle of scarcity in the following 5 years.

4. It is objected that "Mexico will bring quiet waters to the Rio Grande while the United States will bring floodwaters." This is not true and we have already demonstrated that the larger part of the surpluses of the Mexican tributaries in the future will be floodwaters. In any event, both the quiet waters of either country which reach the Rio Grande, and the floodwaters, will need dams to regulate them by their storage. The construction of these dams is something vital for the two countries, but principally for Mexico, which only can be realized by means of the treaty.

5. It is objected that "there appears to exist a lack of equity in the treaty, because it specifies that in the case of periods of extraordinary drought, Mexico must pay into the Rio Grande the shortages with respect to the volume guaranteed for a cycle of 5 years in the following cycle, while, in the case of the Colorado River, the United States, when such droughts occur, will not compensate Mexico for the volume lacking with respect to that guaranteed in the following year."

The difference is the following: In the case of the Rio Grande, Mexico does not agree to deliver the guaranteed volume in all and each one of the years—as, on the other hand, happens in the case of the Colorado River—but Mexico has the choice, according to the treaty, of giving the volume guaranteed in lesser or greater annual volumes, if the annual guaranteed volume is completed in cycles of 5 years. This, which is beneficial for Mexico, because it gives Mexico great elasticity in covering its obligations and which does not exist for the United States, in the case of the Colorado River, is compensated by the fact of having to pay the deficiencies in the following cycle of 5 years. On the other hand, in the case of the Colorado River, in which the United States, as we will see, is obligated to furnish us with exactly the volume guaranteed and even with the monthly distribution which our irrigation demand requires, there would be no object in having the deficiencies caused by extraordinary droughts compensated by paying us the water in the following years, since we would not have any place to store the excess volume of water from the abundant years to compensate for the dry ones, while, on the other hand, in the case of the Rio Grande the international storage dams are there.

6. It is objected that the cost of the international dams on the Rio Grande, which will be constructed in accordance with the treaty, will be so great (several hundred million dollars according to some, and a thousand million dollars according to others) that Mexico will not be able to defray its corresponding part, for which reason our country would have to be content with having a very small part of the capacity of these works.

It is estimated, by engineers of both countries, that the cost of the three international storage dams and of the necessary diversion

works will be 430,000,000 pesos. The hydroelectric plants at the two upper dams will generate 330,000,000 kilowatt-hours per year of firm energy, with additional secondary energy. The firm energy, sold at a minimum price, will permit the amortization, besides the cost of the hydroelectric plants, of 80,000,000 pesos of the cost of the dams. Therefore, between the two countries there would have to be paid 350,000,000 pesos for all the works. Our country surely will be able to pay the part corresponding to it of the above total sum. I wish to remind you that the National Irrigation Commission has at present an annual budget of 155,000,000 pesos and that this annual budget has been increasing in geometric progression in the last few years. I also wish to remind you that the Commission is constructing various dams of similar magnitude to that of the dams that are planned for the Rio Grande.

We should note, in this respect, that the international works of the Rio Grande will have a very economical cost, per hectare benefited. In reality the unit cost for the item of irrigation works per each hectare benefited in conformity with this international project will be slightly lower than the average obtained by the works which the National Irrigation Commission is developing.

IX. TIJUANA RIVER

In the case of the Tijuana River, the treaty in article 16 reads as follows:

"With the object of bettering the existing uses and of assuring any practicable future development, the Commission will study, investigate, and submit to the two Governments for their approval:

"1. Recommendations for the equitable distribution between the two countries of the waters of the Tijuana River system.

"2. Projects of storage and control of floods in order to promote and develop the domestic, irrigation, and other practicable uses of the waters of this system.

"3. Estimates of the costs of the works proposed and of the form in which the construction of said works or their costs should be divided between the two Governments.

"4. Recommendations with respect to the parts of the works which should be operated and maintained by the Commission and the parts of the same that should be operated and maintained by each section.

"The two Governments, each acting through its respective sections of the Commission, will construct the works that both Governments propose and approve, will divide the amount of the work or its cost and will distribute the waters of the Tijuana River system in the proportions on which they decide. The two Governments agree to pay by equal parts the cost of operation and maintenance of the works assigned to it for said object."

This article leaves, then, for the future decision of the two Governments, the manner of developing the waters of the Tijuana River for the two countries, which river, as we said, originates in the two countries. Naturally, neither of the two Governments would agree to having that part of its waters that could be used in its respective country assigned to the other. In reality, there is only one development on the Tijuana River of an international character that can be realized, which the International Boundary and Water Commission should study in accordance with the stipulations of the treaty. This is the Marron Dam which will remain in the United States and partly in Mexico. This dam will be fed by Mexican and American tributaries and its extractions could be 15,000,000 cubic meters (12,160 acre-feet). This amount would be distributed equitably between the two countries.

Summarizing, the problem remains to be discussed in the future by the two Governments and therefore, as regards the treaty, there cannot exist anything which

would harm the interests of one or the other country, and even less when we take in account what was said above. On the contrary, the construction of this dam will permit a better development on the part of our country of the waters of the Tijuana River, which is naturally very important for Lower California.

X. SIGNIFICANCE OF THE TREATY IN THE CASE OF THE COLORADO RIVER

In order to understand better the enormous importance that the treaty has for Mexico with respect to the Colorado River, it is necessary to give a brief historical description.

At the beginning of this century a concession was given to an American company, organized for the purpose as a Mexican company, in order that it might construct a canal, the Alamo, which passing through Mexico would carry the waters of the Colorado River for the irrigation of the rich Imperial Valley in the United States. By this concession, Mexico has the right to use up to 50 percent of the water that flows through said canal.

The existence of this canal permitted the rapid development of the American lands of the Imperial Valley and the slower development of the Mexican lands of the Mexicali Valley, with our country using not 50 percent of the water of the Alamo Canal, a percentage which it never reached, but an amount in the majority of cases close to the third part of the volume that passed through the canal. While the Alamo Canal functioned for carrying water to the American Imperial Valley, the Mexican lands did not have any problem other than that which arose from years of low current in the Colorado River, in which case the American and Mexican lands suffered equally.

In order to be able to use to better advantage the waters of the Colorado River the United States projected and constructed: (1) a great storage dam, the highest in the world, Boulder Dam, a work that was terminated in 1935 and that permits the storage of the flow of 2 average years of the Colorado River; and (2) the All-American Canal, which runs exclusively in American territory.

We Mexican engineers, when we saw that these gigantic works were being executed, understood that there approached a critical moment for Mexico in which the lands of Mexicali Valley ran the danger of returning to their condition of one of the most inhospitable deserts of the world through lack of water, since our country would have to depend on taking water, in the manner that it might best be able to do it, from the Colorado River by using the occasional surpluses that might flow through said river.

In 1942 the All-American Canal entered into operation, that is, it was now no longer necessary to carry the water of the Colorado River through Mexican territory in order to irrigate American lands and therefore it was not possible for Mexico to take part of the 50 percent of the water in the Alamo Canal to which it had the right, and this canal remained abandoned for the exclusive service of Mexico, which already had in cultivation that year more than 120,000 hectares (296,500 acres) in Mexicali Valley.

The situation in 1942 showed us how well founded were our fears because that year, during several of the hottest weeks, there came from the great American dams constructed on the Colorado River only a small volume which did not permit of filling the requirements of irrigation in Mexico. And with this came the clamor of the public land holders, the small owners and colonists of our Colorado River irrigation district, who saw their crops lost for lack of water. But there is even more, for at the end of the summer, there came from Boulder Dam a great flow of water which overflowed in Mexico, inundating cultivated lands and ruining the crops of other thousands of hectares.

That is, even when it is true that the total volume of the surpluses which flow through the Colorado River will still be very great in many years, its current is from now on so irregular that it can be stated that, while during some weeks the Mexican lands of the Mexicali Valley can be dying of thirst, in the following weeks they may be choked and submerged by the inundations provoked by discharges from the American dams.

Under these conditions the agriculture of Mexicali Valley is in desperate condition. In order to better it, without the treaty, it has been necessary for the Mexican Government, in the years of 1943, 1944, and the present year, to be constantly requesting of the American Government that the discharges be now increased, that tomorrow they be diminished, that part of the water be furnished through the All-American Canal, etc.

This critical situation makes clear how unfounded is the opinion of some of our citizens who believe that Mexico should not be preoccupied in the case of the Colorado River and that the treaty was not needed, as it could always take the abundant water which inevitably flows in the Colorado River. We insist that, effectively, in the case of the Colorado River as in the case of the Mexican tributaries of the Rio Grande, there will always be surpluses which will flow in the beds of said rivers but these surpluses cannot be used in irrigation due to their eminently irregular regimen in present years and much less in future years. The only solution for using them would be to regulate them by a storage dam and we must remember that at the beginning of this exposition we said that in Mexico there is not the slightest possibility of storing the surplus water of the Colorado River, a possibility which exists for the surplus waters that flow in the Rio Grande.

For this and many other reasons we who know the problem of Mexicali Valley in its painful reality have always been convinced that there was no other solution than that which a treaty gives which guarantees water from the Colorado River for the irrigation of its lands.

The treaty which is under your consideration resolves this problem. Its article 10 reads:

"From the waters of the Colorado River, whatever their source, there are assigned to Mexico:

"(a) A guaranteed volume of 1,850,234,000 cubic meters (1,500,000 acre-feet) each year, which will be delivered in accordance with the dispositions of article 15 of this treaty.

"(b) Any other volumes which reach the Mexican points of diversion; and the understanding that, when in the judgment of the United States Section, in any year there is water in the Colorado River in excess of that necessary to supply the consumptions in the United States and the volume guaranteed annually to Mexico of 1,850,234,000 cubic meters (1,500,000 acre-feet), the United States is obliged to deliver to Mexico, in accordance with the terms of article 15 of this treaty, additional amounts of water from the Colorado River system up to a total volume not in excess of 2,096,931,000 cubic meters (1,700,000 acre-feet) annually. Mexico will not acquire any right, other than that which this clause confers, to the use of the waters of the Colorado River system for any purpose, in excess of 1,850,234,000 cubic meters (1,500,000 acre-feet) annually.

"In cases of extraordinary drought or of serious accident to the irrigation system of the United States, which might make it difficult for the latter to deliver the guaranteed amount of 1,850,234,000 cubic meters (1,500,000 acre-feet) per year, the water assigned to Mexico, per clause "a" of this article, will be reduced in the same proportion as the consumptions are reduced in the United States."

As is seen by the above article, Mexico is guaranteed by the treaty a volume of 1,850,000,000 cubic meters (1,500,000 acre-feet) as

a minimum, a volume which in many years will be 2,097,000,000 cubic meters (1,700,000 acre-feet).

Now, then, before negotiating the treaty a precise estimate was made of the net area in Mexican territory irrigable with water from the Colorado River under economically practicable conditions. Accordingly this estimate found that there was an area of 200,000 net irrigable hectares (494,200 acres), equivalent to a gross area of 300,000 hectares. This gross area of 300,000 hectares (741,300 acres) is less than that estimated as irrigable by our engineers during the international conferences of 1929, to which we referred at the beginning of this report. The difference between these two estimates is that in the latter, great areas, considered in the estimate of 1929, are eliminated as being useless for agricultural operations due to the large amount of salts that the lands contain. For example, the basin of the Laguna Salada and the lands adjacent to the Gulf were eliminated. There were also eliminated some other areas of lands of poor quality where heavy pumping would be required.

Now then, for the irrigation of the net 200,000 hectares (494,200 acres) in accordance with the coefficient of irrigation observed as an average since the commencement of agricultural work in the Mexicali Valley (1.25 meters, or 4.1 feet), a volume of 2,500,000,000 cubic meters (2,026,700 acre-feet) would be needed.

This volume can be obtained with the amount guaranteed by the treaty of 1,850,000,000 cubic meters (1,500,000 acre-feet) in the minimum year or 2,097 cubic meters (1,700,000 acre-feet) in the majority of the years plus the water that is pumped from wells—similar to those existing on the Laguna—which will more than supply the deficiency between the quantity required and the quantity guaranteed by the treaty.

If the coefficient of irrigation in Mexicali Valley should be increased notably, it will be necessary to make a greater use of the abundant (freaticas) water which exists in the subsoil of Mexicali Valley. If on the contrary, as we hope, by a greater preparation of our farmers, the coefficient of irrigation diminishes, it will be practically possible to irrigate the whole of the 200,000 net hectares (494,200 acres) existing with the volume guaranteed by the treaty.

It is necessary to note that as Mexico did not have any place to regulate the waters of the Colorado River in order to distribute them day by day, during each year, according to the needs of irrigation, it was necessary to arrange by means of the treaty for the United States to deliver that water to us regulated to our wishes within certain limitations which do not impose on us any sacrifice for any plan of cultivation that is followed in Mexicali Valley. For this service of regulation of that water, our country does not have to pay a single cent. Besides this, on account of the topographical conditions of the lands to be irrigated on both banks of the Colorado River, it was necessary to arrange that the water of the Colorado River be delivered to us when desired by Mexico, compatible with the needs of the lands to be irrigated at three different points.

1. At Pilot Knob, in order to irrigate the high lands which are found adjacent to the Colorado River on its right bank;

2. At San Luis, Sonora, in order to irrigate the high lands which are found on the left bank of the Colorado River;

3. At the Colorado River in order that by means of the construction of an international dam at the site where Mexico may desire it the rest of the lands on both banks of the river can be irrigated.

Mexico even has the possibility, if it so desires, of obtaining construction by Arizona of a canal which would carry waters of the Colorado River from a diversion dam constructed on the section of the river bounding the lands of Sonora.

These are the advantages obtained by the treaty which cannot be relegated to a second place, but which for our country have a fundamental importance because if it were not for them we would not be able even to use the annual volume that the treaty assigns to Mexico.

XI. ADVANTAGES OF THE TREATY WITH RESPECT TO THE COLORADO RIVER

By means of the treaty the critical fortuitous condition of the crops of 120,000 hectares (296,500 acres) farmed at present is eliminated (area times 4.1 feet=1,215,650 acre-feet present annual use).

The treaty permits of increasing the cultivated area to the total of the area that can be cultivated economically, that is, to 200,000 net hectares (494,200 acres).

The treaty provides for the construction of works by the two countries for defense against inundations, with which this great danger to Mexican lands will be removed.

Finally, the cost of these works is extraordinarily reasonable, since the storage dams which always constitute the heaviest part of the costs of all large irrigation works are not included in any of the costs for Mexico and of the cost of the diversion works Imperial Dam and All-American Canal we will only have to pay a part proportional to the use that we may make of them.

In closing this chapter I believe it convenient to note that Mexicali Valley is agriculturally the most important zone in all of Lower California, because in the rest of the territory there cannot be irrigated, in total, even the fourth part of the area of 200,000 hectares (494,200 acres) which the great Colorado River irrigation district will have.

XII. OBJECTIONS TO THE TREATY WITH RESPECT TO THE COLORADO RIVER

As in the case of the Rio Grande, we will only refer to the objections of a technical character.

1. It is objected that the water which is given us from the Colorado River can be of poor quality, either because it may contain an excess of silt or an excess of salts.

With regard to the silt, the reality is exactly the contrary. The American dams constructed on the Colorado River have served so that the silt which the current brings with it is deposited in them, for which reason the Colorado River actually passes through Mexico with a small percentage of silt, and is scouring the bed of the river instead of filling it with silt.

With respect to the possibility that the waters of the Colorado River which are delivered to us may be of poor quality, because they contain dissolved salts, we are able to affirm, based on reasons of legal and technical nature, that fortunately such a danger does not exist. In the official report to the Senate that the National Irrigation Commission is terminating this theme will be considered more fully, in order to do away with any doubt that may be had in this respect. It is not within the purpose and the time set for this report to do it as fully as is necessary, but we may point out at least the following reasons:

(a) The negotiations of the treaty on the part of the American delegation and later its approval by the American Senate, were made by taking as a fundamental basis the official document called the Santa Fe Agreement, which with the approval of the American Federal Government distributed, since 1922, the main stream of the Colorado River among the American States of the upper and lower basins, and specified that the waters assigned to Mexico should be taken from the excess which the average virgin volume of the river (22,000,000,000 cubic meters) (17,835,000 acre-feet) had over the volume distributed among the American States of the upper and lower basins (20,000,000,000 cubic meters) (16,213,600 acre-feet). Our assignment of 1,850,000,000 cubic meters (1,500,000 acre-feet) is included, then, within the 2,000,000,

000 cubic meters (1,621,000 acre-feet) of the difference. The virgin waters of the Colorado River are of good quality. Besides this, even a superficial study of the treaty shows, from the introduction to the transitory articles with which it terminates, that it is inspired with the fact that "it is to the interests of both countries to take advantage of these waters in other uses and consumptions * * * in order to obtain its most complete and satisfactory utilization." This is a paragraph transcribed from the preface. In article 27 of the transitory articles it is clearly stated that the use to which these waters are to be put is that of irrigation. Therefore, in this treaty, as in any other of its kind, it is understood that the water must be of good quality. Mexico has the right to have the water that is assigned to it from the Colorado River proceed entirely from the virgin volume of the current, but knowing that this is physically impossible to obtain for any use of water downstream on any river fully utilized, as is the Colorado River, our country had no objection to receiving these waters the same as the other American users of the lower portion of the Colorado River, as long as they were of good quality for irrigation.

(b) The salinity of the return waters which may come in the Colorado River depends on the use that Arizona makes of the waters of the Colorado River that belong to it. If it constructs an irrigation project with a value of about \$1,000,000,000 to carry the water to the center of Arizona, then a certain volume of return water with a high percentage of salinity might reach the bed of the Gila River, but even this volume could not reach the Colorado River as it would be absorbed, as happens at present, by the great dry bed of the Gila River which for some years has not brought a drop of water to the Colorado River. If Arizona employs these waters to irrigate its southwest corner, which would cost it at least the tenth part (\$70,000,000), then the return waters would be of good quality. Whatever the project that it selected, it would not be totally developed for many years, probably at the end of the present century. The most pessimistic technical calculations show that even considering that Arizona would employ its water in its central region and that the return water with a high percentage of salinity would reach the Colorado River without being lost in the bed of the Gila River, these returns mixed with the rest of the assignment to our country of waters with very small percentage of salinity would give a mixture that our country would probably accept in accordance with what was said above relative to its undeniable right to receive waters of good quality.

3. It is objected that it is of no use to obtain water for Mexicali Valley because the lands of that valley are in the hands of foreigners.

Also in this case the reality is entirely opposite to that asseverated by the opponent.

4. That in a year of drought the treaty permits the volume guaranteed to Mexico

to be reduced and that the treaty only promises to reduce the American volumes in an equal proportion, which would be very difficult to carry out in practice. A reading of the final paragraph of transitory article 10 shows that the objection is completely unjust since the case is entirely the contrary. The amount guaranteed to Mexico can only be reduced in cases of extreme drought and only if that extraordinary drought should bring about the reduction of all consumptions in the United States.

XIII. CONCLUSIONS

The international water treaty which has been brought up for consideration of the Mexican Senate is beneficial for our country for the following reasons:

1. Because in the case of the Colorado River it terminates the critical situation in which the 120,000 cultivated hectares (296,500 acres) in Mexicali Valley was found, a critical situation which existed since 1942 when operation of the All-American Canal was commenced. Under the treaty the net 200,000 economically cultivable hectares (494,200 acres) which exist on the Mexican side along both banks of the Colorado River may be cultivated.

2. It also ends the existing danger that through the construction of the Federal project No. 5, or Rincon project, all the usable surpluses which flow in the Rio Grande, proceeding from Mexico and the United States will be diverted for the exclusive use of irrigation of the American lands of the region of Brownsville, Tex., thus leaving in a precarious situation the Mexican lands which with great effort are being opened to cultivation in the zone of Matamoros, Tamaulipas. On the other hand, with the treaty, not only can the water of all the Mexican tributaries of the Rio Grande be used to their maximum, up to the cultivation with them of an area of 315,000 hectares (778,400 acres), but with our surpluses which flow in the Rio Grande, duly regulated by the international dams, it will be possible to irrigate 245,000 hectares (605,400 acres) of the fertile lands of the Mexican part of the delta of the Rio Grande, that is, the region of Matamoros, Tamaulipas.

The attached table shows synthetically the situation of our country with the treaty and without the treaty. This table, a summary of what has been said, shows that thanks to the treaty, Mexico will be able to irrigate 445,000 hectares (1,100,000 acres) more, and that this will be achieved without any harm to our country, that is, as we have demonstrated in this statement, without injuring the maximum possibilities of development of all and each one of our frontier States with water from the tributaries of the Rio Grande which pass through them.

The above considerations reach the conclusion that the treaty technically is beneficial for the country, and I express this in the name of the National Irrigation Commission and as a participant, in my character of executive chairman, in the technical aspects of its negotiation.

TABLE 1.—Virgin regimen, actual and future consumptions, and future surpluses of the Rio Grande

[Millions of cubic meters (see supplement to table 1)]

Source	Virgin flow	Consumption		Future surpluses	Percent
		Present	Future		
FROM MEXICO					
1. Conchos River.....	2,045	843	1,275	770	-----
2. Arroyo de las Vacas, San Diego, San Rodrigo, Escondido Rivers.....	418	106	128	290	-----
3. Salado River.....	925	562	562	363	-----
I. Total, 6 tributaries.....	3,388	1,511	1,965	1,423	-----
II. Alamo and San Juan Rivers.....	1,537	372	953	604	-----
III. 50 percent direct basin.....	867	-----	-----	867	-----
Total for Mexico.....	5,812	1,883	2,918	2,894	88

TABLE 1.—Virgin regimen, actual and future consumption, and future surpluses of the Rio Grande—Continued

[Millions of cubic meters (see supplement to table 1)]

Source	Virgin flow	Consumption		Future surpluses	Percent
		Present	Future		
FROM THE UNITED STATES					
I. Pecos, Devils, Goodenough Springs Rivers, Terlingua, Alamito, San Felipe, and Pinto Creeks	2,180	988	988	1,192	
II. 50 percent direct basin (including Fort Quitman)	867	(1)		867	
Total for United States	3,047	(2)	988	2,059	42
Total for Rio Grande	8,859			4,953	100

Supplement to table 1
[Thousands of acre-feet]

	Virgin flow	Consumption		Future surpluses	Percent
		Present	Future		
1	1,657.8	683.4	1,033.6	624.2	
2	338.9	85.9	103.8	235.1	
3	749.9	445.6	455.6	294.3	
I	2,746.6	1,224.9	1,593.0	1,153.6	
II	1,262.2	301.6	772.6	489.6	
III	702.9			702.9	
Total for Mexico	4,711.7	1,526.5	2,365.6	2,346.1	58
I	1,767.3	801.0	801.0	966.3	
II	702.9	(1)		702.9	
Total for United States	2,470.2		801.0	1,699.2	42
Total for Rio Grande	7,181.9			4,015.3	100

¹ Without considering the present use of 1,419,000,000 cubic meters (1,150,000 acre-feet) in the American agricultural zone of Brownsville, Tex.
² The 265,000,000 cubic meters (215,000 acre-feet) which as an annual average pass by Fort Quitman and which are distributed equally between the 2 countries are not included in this table.

TABLE 2.—Distribution of future surpluses in the Rio Grande in accordance with the treaty

TO MEXICO		
	Millions of cubic meters	(1,000 acre-feet)
(1) Two-thirds of the surpluses of the Conchos River, Arroyo de Las Vacas, San Diego, San Rodrigo, Escobedo, and Salado Rivers	949	(709)
(2) One-half of the surpluses of the direct Mexican Basin	434	(352)
(3) One-half of the surpluses of the direct American Basin	433	(351)
(4) Total of the surpluses in the San Juan and Alamo Rivers	604	(490)
Total	2,420	(1,962)
TO THE UNITED STATES OF AMERICA		
(1) One-third of the surpluses of the Conchos River, Arroyo de Las Vacas, San Diego, San Rodrigo, Escobedo, and Salado Rivers	474	(384)
(2) Total of the surpluses from the Pecos, Devils, Goodenough Springs, Alamito Terlingua, San Felipe, and Pinto Rivers	1,192	(966)
(3) One-half of the surpluses from the direct Mexican Basin	433	(351)
(4) One-half of the surpluses from the direct American Basin	434	(352)
Total	2,533	(2,053)

SUMMARY

	Millions of cubic meters	Percent	1,000 acre-feet
To Mexico	2,420	49	(1,962)
To the United States	2,533	51	(2,053)
Total	4,953	100	(4,015)

TABLE 3.—Maximum possibilities of irrigated areas with treaty and without it

	Hectares		(Acres)
	With [with-out] the treaty	Without [with] the treaty	
A. With the Colorado River	0	200,000	(494,200)
B. With the Rio Grande:			
(1) In the basin of the Mexican tributaries	315,000	315,000	(778,400)
(2) In the Mexican part of the delta of the Rio Grande (Reynoso to Matamoros)	0	245,000	(605,400)
Total	315,000	760,000	(1,878,000)
Difference		445,000	(1,100,000)

¹ The words "with" and "without" in the 2 headings are obvious transpositions.

The Voice of America Abroad
EXTENSION OF REMARKS
OF
HON. JOSEPH E. TALBOT
OF CONNECTICUT

IN THE HOUSE OF REPRESENTATIVES
Wednesday, November 7, 1945

Mr. TALBOT. Mr. Speaker, under leave to extend my remarks in the RECORD, I include the following address by the Honorable William Benton, Assistant Secretary of State in Charge of Public Affairs, before the Herald Tribune forum, grand ballroom, Waldorf-Astoria

Hotel, New York City, Tuesday, October 30, 1945:

The Voice of America is a voice with 10,000 tongues. It is all that the people of other lands hear about us and all that they read about us. It is the American movies they see and the American GI's and tourists they meet.

I am glad we Americans speak with 10,000 voices. Some critics would call it a confusion of voices. But it is the democratic way of peoples speaking to peoples. The alternative way—the single voice—is the way of censorship and of ministries of propaganda.

My theme tonight is that the people of the United States, through their Government and their State Department, have a vital national interest in the Voice of America. Their national security may be at stake if this voice is inadequate or distorted—if it fails to represent us with reasonable fullness and fairness as we really are, our history and our culture, our faults and our fears, our hopes and our ambitions for our democratic processes and our free society.

Today, 38 short-wave radio transmitters, operating all over the world under the direction of our Government, are known to millions in Asia, Africa, and Europe by the name, the Voice of America. Here is an example of the new role of Government. The Voice of America radio programs supplement and help to clarify the message of America's 10,000 tongues. Further, they reach vast areas of the world which otherwise would be completely shut off from America.

There are people in Iceland, in China, Iran, the Argentine and the Balkans—millions of ordinary people all over the world who listen eagerly for America's voice. During the war these Voice of America broadcasts went out over the air every day in the year in 40 languages. Today, in the backwash of the war they go out in 18 languages. They give people in foreign lands straight, impartial news from America, news in their own languages, news untainted by special pleading or by propaganda.

The radio Voice of America was developed in war by the Government. Now before the American people and the Congress is the broad and inclusive question: "What role shall the Government play in America's voice abroad in peacetime?"

Is it enough, in the rapidly contracting world of today, for our people and our Government to be presented to the peoples of the world as a giant, completely equipped with battleships, superfortresses, and atomic bombs, but voiceless except for diplomatic exchanges and the erratic interplay of private communication?

There is one basis for judging the future information policy of the Government abroad upon which we can all agree.

Does an expanded peacetime role for Government help us to achieve national security? Is it worth while deliberately to explain ourselves to the rest of the world? Does this help give us willing and friendly allies, in times of crises as well as in peace? Is understanding also a force? Isn't it the kind of force we prefer? Suppose we had to choose between two investments in security—between a year's cost of the radio Voice of America and its rough equivalent, a year's cost of operating one battleship in a fleet of battleships?

These are new questions for America. They will be debated in the next few weeks and over the years to come. Battleships are the traditional symbols of our security. But to speak to the other peoples of the world about America—to speak through such new and miraculous channels as short-wave radio—to seek security through understanding rather than through force—that is a new role for our Government.

In the field of short-wave radio beamed abroad, we have not yet decided how best to operate or manage or control; we only